



Fact Sheet

The U.S. Environmental Protection Agency (EPA)

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

Town of Harrah

Harrah Wastewater Treatment Plant

Public Comment Start Date: November 25, 2024

Public Comment Expiration Date: December 27, 2024

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

This Fact Sheet (FS) includes:

- information on public comment, public hearing, and appeal procedures
- a listing of proposed effluent limitations and other conditions for the facility
- a map and description of the discharge location
- technical material supporting the conditions in the permit
- a listing of substantial changes relative to the prior permit (see Page 7).

CWA § 401 CERTIFICATION

Since this facility discharges to Yakama Tribe's Tribal waters and the Tribe does not have Treatment as a State (TAS), the EPA is the certifying authority for the permit. See FS Section

VI.C. Comments regarding the intent to certify should be directed to the EPA technical contact listed above.

CLEAN WATER ACT § 401(A)(2) REVIEW

CWA Section 401(a)(2) requires that, upon receipt of an application and 401 certification, the EPA as the permitting authority notify a neighboring State or Tribe with TAS when the EPA determines that the discharge may affect the quality of the neighboring State/Tribe's waters.

As stated above, the EPA is the certifying authority and is accepting comment regarding the intent to certify this permit. Once the EPA reviews any comments received regarding the intent to certify and has signed a final certification, the EPA will determine whether the discharge may affect a neighboring jurisdiction's waters (33 U.S.C. § 1341(a)(2)).

PUBLIC COMMENT

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

By the expiration date of the public comment period, all written comments and requests must be submitted to piscitelli.cody@epa.gov.

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

DOCUMENTS ARE AVAILABLE FOR REVIEW

The draft NPDES permit, fact sheet and other information can be downloaded from the internet at <https://www.epa.gov/npdes-permits/about-region-10s-npdes-permit-program>.

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

For technical questions regarding the Fact Sheet, contact Cody Piscitelli at (206) 553-1169 or piscitelli.cody@epa.gov. Services can be made available to persons with disabilities by contacting Audrey Washington at (206) 553-0523.

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ACRONYMS

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
30B3	Biologically-based design flow intended to ensure an excursion frequency of less than once every three years, for a 30-day average flow.
AML	Average Monthly Limit
AWL	Average Weekly Limit
BOD ₅	Biochemical oxygen demand, five-day
°C	Degrees Celsius
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CFU	Colony Forming Units
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
lbs/day	Pounds per day
LTA	Long Term Average
mg/L	Milligrams per liter
mL	Milliliters
ML	Minimum Level
µg/L	Micrograms per liter
mgd	Million gallons per day
MPN	Most Probably Number
N	Nitrogen
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
POTW	Publicly owned treatment works
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration

SS	Suspended Solids
s.u.	Standard Units
TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TRC	Total Residual Chlorine
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
UV	Ultraviolet
WD	Water Division
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WQS	Water Quality Standards
WWTP	Wastewater treatment plant

I. BACKGROUND INFORMATION

A. GENERAL INFORMATION

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

Table 1. General Facility Information

NPDES Permit #:	WA0022705	
Applicant:	Town of Harrah Harrah Wastewater Treatment Plant	
Type of Ownership	POTW	
Physical Address:	8761 Branch Road Harrah, WA 98933	
Mailing Address:	P.O. Box 10 Harrah, WA 98933	
Facility Contact:	Paul Diefenbach publicworks@harrahwa.us (509) 848-2432	
Facility Location:	46.4051°N	120.561°W
Receiving Water	Harrah Drain	
Facility Outfall	46.4047°N	120.5599°W

B. PERMIT HISTORY

The most recent NPDES permit for the Harrah Wastewater Treatment Plant (WWTP) was issued on August 29, 2012, became effective on October 1, 2012, and expired on September 30, 2017. A complete NPDES application for permit issuance was submitted by the permittee on March 29, 2017. The EPA determined that the application was timely and complete. Therefore, pursuant to 40 CFR § 122.6, the permit has been administratively continued and remains fully effective and enforceable.

C. TRIBAL CONSULTATION

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

Indian tribes. In May 2011, the EPA issued the “EPA Policy on Consultation and Coordination with Indian Tribes” which established national guidelines and institutional controls for consultation.

The Harrah WWTP is located on the Yakama Reservation of the Yakama Nation. Consistent with the Executive Order and the EPA Tribal consultation policies, the EPA coordinated with Yakama Nation during development of the draft permit and is inviting the Tribe to engage in formal Tribal consultation.

II. FACILITY INFORMATION

A. TREATMENT PLANT DESCRIPTION

1. Service Area

The Town of Harrah owns and operates the Harrah WWTP located in Harrah, WA. The collection system has no combined sewers. The facility serves a resident population of 640. There are no major industries discharging to the facility.

2. Treatment Process

The design flow of the facility is 0.055 mgd. The reported actual flows from the facility range from 0.031 to 0.037 mgd (average monthly flow). In 2017, the facility underwent significant upgrades, including the addition of two ammonia reduction treatment basins known as submerged attached growth reactors (SAGRs). The treatment process now consists of a two-stage lagoon system (anaerobic and aerobic), SAGRs, and ultraviolet (UV) disinfection. A schematic of the wastewater treatment process and a map showing the location of the treatment facility and discharge are included in Appendix A. Because the design flow is less than 1 mgd, the facility is considered a minor facility.

3. Outfall Description

The outfall consists of a submerged pipe within Harrah Drain, which is an irrigation canal with controlled flow between the months of April and October. The outfall is near the Branch Road Bridge over Harrah Drain.

B. EFFLUENT CHARACTERIZATION

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

Table 2. Effluent Characterization

Parameter	Minimum	Maximum	95 th Percentile	Limit
TSS Concentration (7-day) (mg/L)	1.00	14.00	6.75	92
TSS Concentration (30-day) (mg/L)	1.00	8.00	6.00	70

Parameter	Minimum	Maximum	95 th Percentile	Limit
TSS Loading (7-day) (mg/L)	0.25	5.00	2.23	42
TSS Loading (30-day) (mg/L)	0.25	3.00	1.94	32
TSS Percent Removal	96.00	99.00	99.00	65
BOD ₅ Concentration (7-day) (mg/L)	1.00	54.00	8.98	59
BOD ₅ Concentration (30-day) (mg/L)	1.00	28.25	8.23	39
BOD ₅ Loading (7-day) (lbs/day)	0.51	16.00	2.74	27
BOD ₅ Loading (30-day) (lbs/day)	0.43	8.00	2.64	18
BOD ₅ Percent Removal	87.50	99.00	99.00	65 (min.)
pH (S.U.)	6.40	8.90	8.70 – 8.80 ¹	6.3 – 9.0
<i>E. coli</i> Daily Max. (CFU/100ml)	1.5 ²	20.0	18.5	200
<i>E. coli</i> Monthly (CFU/100ml)	1.0 ²	5.0	4.61	100
Monthly Flow (mgd)	0.031	0.037	0.036	0.055
Monthly Nitrate + Nitrite as N (mg/L)	9.50	45.30	44.90	
Ammonia Daily Max. Concentration (mg/L) (March – November)	0.00	0.74	0.32	4.83
Ammonia Daily Max. Concentration (mg/L) (December – February)	0.02	4.13	3.72	4.54
Ammonia Monthly Average Concentration (mg/L) (March – November)	0.00	0.24	0.13	1.93
Ammonia Monthly Average Concentration (mg/L) (December – February)	0.02	1.69	1.44	1.82
Ammonia Daily Max Loading (lbs/day) (March – November)	0.00	0.19	0.08	2.22
Ammonia Daily Max Loading (lbs/day) (December – February)	0.01	1.06	1.01	2.08
Ammonia Monthly Average Loading (lbs/day) (March – November)	0.00	0.10	0.04	0.885
Ammonia Monthly Average Loading (lbs/day) (December – February)	0.01	0.51	0.47	0.835
Total Nitrogen. (mg/L)	0.7	48.1	47.4	
Dissolved Oxygen Daily Min. (mg/L)	6.77	12.47	11.99	
Dissolved Oxygen Monthly Avg. (mg/L)	7.52	12.99	12.62	

Parameter	Minimum	Maximum	95 th Percentile	Limit
Total Phosphorus (mg/L)	1.27	9.56	8.98	
Temperature Daily Max (°C)	7.6	27.9	26.98	
Temperature Monthly Average (°C)	6.9	26.8	25.6	

Source: DMR data
 Notes: 1. 95th percentiles of pH are the instantaneous minimum and maximum, respectively
 2. This was the lowest detected sample. 55 of the 67 samples were below the detection limit for both average monthly and maximum daily *E. coli* samples.

C. COMPLIANCE HISTORY

There was an informal enforcement action in 2016 due to 28 effluent limit exceedances; however, this enforcement action was taken prior to the facility's major upgrades. Overall, since the upgrades in 2018, the facility has had a good compliance record with two maximum pH exceedances in 2020.

Table 3. Summary of Effluent Violations

Parameter	Limit Type	Units	Number of Instances	Number of Violations
pH	Instantaneous Maximum	S.U.	2	2

Information accessed in ICIS/ECHO on 3/22/2024.

The EPA conducted an inspection of the facility in May 2020. The inspection encompassed the wastewater treatment process, records review, operation and maintenance, and the collection system. Overall, the results of the inspection noted that the facility is in overall good compliance standing. It did identify two procedural issues related to sampling methodology and reporting, as well as the lack of on-site Quality Assurance Plan and calibration records. The report also described the 28 effluent limit violations but noted these occurred prior to the major renovations.

Additional compliance information for this facility, including compliance with other environmental statutes, is available on Enforcement and Compliance History Online (ECHO). The ECHO web address for this facility is <https://echo.epa.gov/detailed-facility-report?fid=110039923410>.

III. RECEIVING WATER

In drafting permit conditions, the EPA must analyze the effect of the facility's discharge on the receiving water. The details of that analysis are provided in the Water Quality-Based

Effluent Limits (WQBEL) section in Part IV.A.4. This section summarizes characteristics of the receiving water that impact that analysis.

This facility discharges to Harrah Drain near the Town of Harrah, WA. The outfall is located upstream of the confluence with Marion Drain which flows into the Yakima River, and approximately 23 miles from the Yakama Reservation-Washington boundary.

A. WATER QUALITY STANDARDS

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

The facility is located near the Town of Harrah and discharges to Tribal waters on the Yakama Nation Reservation. The Yakama Nation applied for the status of Treatment as a State (TAS) in 1994 from the EPA for purposes of the CWA, and the current permit used Yakama Nation WQS as a basis for permit limits. However, to date, the EPA has not acted on the TAS submission nor does the Tribe have EPA-approved WQS. Therefore, Washington State WQS were used to develop permit limits and to protect downstream uses in the Yakima River, which is located approximately 22 miles downstream of the discharges via Harrah Drain and Marion Drain.

1. Designated Beneficial Uses

This facility discharges to Harrah Drain in the Yakima River Subbasin (HUC 17030003), within Water Resource Inventory Area 37.

Harrah Drain does not have specific use designations in the Washington WQS (WAC 173-201A). The WQS state that such "undesignated waterways" are to be protected for the uses of primary contact recreation; salmonid spawning, rearing, and migration; domestic, industrial, and agricultural water supply; stock watering; wildlife habitat; harvesting; commerce and navigation; boating; and aesthetic values (WAC 173-201A-600).

B. RECEIVING WATER QUALITY

The water quality for the receiving water is summarized in Table 4.

Table 4. Receiving Water Quality Data

Parameter	Units	Percentile	Value	Source
Temperature	°C	95 th	16.76	SWMR
pH	Standard units	5 th – 95 th	7.80 – 8.02	SWMR, Town of Harrah
Flow	CFS	5 th – 95 th	10 - 85	SWMR
Total Kjeldahl Nitrogen	mg/L	5 th – 95 th	0.29 – 0.50	SWMR
Dissolved Oxygen	mg/L	5 th – 95 th	8.38 – 12.70	SWMR
Nitrate-N	mg/L	5 th – 95 th	0.12 – 3.69	SWMR
Total Phosphorus	mg/L	maximum	0.073	SWMR
Ammonia	mg/L	maximum	0.09	SWMR

Source: Surface Water Monitoring Report data collected upstream of facility by permittee 2018-2024. pH data collected upstream by the Town of Harrah between 2007 and 2010.

1. Water Quality Limited Waters

Neither Harrah Drain or Marion Drain have been assessed under a CWA § 303(d) or 303(b) assessment program. The Yakima River at the point of confluence with Marion Drain near Granger is listed as impaired for polychlorinated biphenyl congeners (PCBs), dioxin, and certain pesticides (4,4'-DDE, 4,4'-DDT, dieldrin). Further downstream, the Lower Yakima River is impaired for bacteria and dissolved oxygen (DO).

The only total maximum daily load (TMDL) applicable to the Yakima River downstream of Marion Drain to address these impairments is a TMDL for the target parameter of total DDT using the surrogate parameter of total suspended solids (TSS). This TMDL did not impose wasteload allocations (WLAs) on point source discharges since agricultural practices were identified as the principal source of sediment loading to the river and its tributaries.

2. Low Flow Conditions

Harrah Drain is generally dry upstream of the discharge during the non-irrigation season (December through February). Available flow data for Harrah Drain collected by the Town of Harrah and the United States Geological Survey (USGS) indicate that Harrah Drain flows between March and November. Therefore, according to these data, the stream is intermittent and the flows between December and February are zero.

For Harrah Drain, there is not enough flow data available to calculate the 1Q10, 7Q10, 30B3, or 30Q5, for March - November. The EPA has therefore used the minimum measured flow rate in Harrah Drain, which is 10 CFS, in place of the 1Q10, 7Q10, and 30B3, for March - November. The harmonic mean flow rate for

March – November, calculated from 13 measurements taken by the permittee and USGS, is 22.36 CFS.

IV. EFFLUENT LIMITATIONS AND MONITORING

1. Changes Relative to Prior Permit

The draft permit proposes substantial changes relative to the prior permit, as described below:

- Minimum effluent pH limits from March to November have been changed from 6.3 S.U. to 6.5 S.U. to reflect Washington Water Quality Standards (see Section IV.A.4 of the fact sheet and Section I.B of the draft permit).
- Revised technology-based effluent limits for TSS due to the shift from Alternative State Requirements to Secondary Treatment Standards (see Section IV.A.2 of the fact sheet and Section I.B of the draft permit).
- More stringent technology-based effluent limits for BOD₅ due to shift from Equivalent to Secondary Treatment Standards to Secondary Treatment Standards (see Section IV.A.2 of the fact sheet and Section I.B of the draft permit).
- New monitoring requirements for PFAS (see Section IV.B.1 of the fact sheet and Section I.B of the draft permit).
- More stringent effluent limits of ammonia from December through February (see Section IV.A.4 of the fact sheet and Section I.B of the draft permit).
- Clarification on monitoring frequency description of BOD and TSS from 1 sample per two weeks to 2 samples per month.
- Removal of total residual chlorine limits and monitoring (See Section IV.A.3 of the fact sheet and Section I.B of the draft permit).
- The monitoring frequency for ammonia has been reduced because historic discharges have been below the effluent limits (see Section IV.A.4 of the fact sheet and Section I.B of the draft permit).
- The addition of pH monitoring in the surface water (see Section IV.B.2 of the fact sheet and Section I.B of the draft permit).

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

Table 5. 2012 Permit - Effluent Limits and Monitoring Requirements

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly Limit	Average Weekly Limit	Max Daily Limit	Sample Location	Sample Frequency	Sample Type
Flow	mgd	0.055	0.083	--	Effluent	Daily	Measure

Biochemical Oxygen Demand (BOD ₅)	mg/L	39	59	--	Influent and Effluent	1/2 weeks	8-Hour Composite
	lb/day	18	27	--			Calculation
	% removal	65% minimum	--	--		1/month	Calculation
Total Suspended Solids (TSS)	mg/L	70	92	--	Influent and Effluent	1/2 weeks	8-Hour Composite
	lb/day	32	42	--			Calculation
	% removal	65% minimum	--	--		1/month	Calculation
pH March-November	S.U.	6.3 – 9.0 at all times			Effluent and Each Cell	2/week	Grab
pH December-February	S.U.	6.5 – 8.5 at all times			Effluent and Each Cell	2/week	Grab
E. coli Bacteria ¹	#/100 ml	100 (geomean)	--	200	Effluent	1/week	Grab
Total Residual Chlorine ^{1,2}	µg/L	8	--	4.83	Effluent	1/week	Grab
	gram/day	1.7	--	2.22			Calculation
Total Ammonia as N Until August 31, 2017	mg/L	Report		Report	Effluent	1/month	8-Hour Composite
Total Ammonia as N ^{1,3} March – Nov. beginning September 1, 2017	mg/L	1.93	--	4.83	Effluent	1/week	8-Hour Composite
	lb/day	0.885	--	2.22			Calculation
Total Ammonia as N ^{1,3} Dec - Feb. beginning September 1, 2017	mg/L	1.82	--	4.54	Effluent	1/week	8-Hour Composite
	lb/day	0.835	--	2.08			Calculation
Temperature	°C	Report Effluent	--	Report Effluent	Effluent and Each Cell	2/week	Grab
Dissolved Oxygen	mg/L	Report minimum and monthly average effluent DO			Effluent and Each Cell	2/week	Grab
Alkalinity	mg/L	Report	--	Report	Effluent	1/quarter ⁴	8-Hour Composite
Nitrate + Nitrite as N	mg/L	Report	--		Effluent	Semi-	8-Hour

						annually ⁵	Composite
Total Phosphorus as P	mg/L	Report	--		Effluent	Semi-annually ⁵	8-Hour Composite
Total Nitrogen as N	mg/L	Report	--		Effluent	Semi-annually ⁵	8-Hour Composite

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

Table 6. Draft Permit - Effluent Limits and Monitoring Requirements

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly Limit	Average Weekly Limit	Max Daily Limit	Sample Location	Sample Frequency	Sample Type
Flow	mgd	0.055	0.083	--	Effluent	Daily	Measure
Biochemical Oxygen Demand (BOD ₅)	mg/L	30	45	--	Influent and Effluent	2/month	8-Hour Composite
	lb/day	13.76	20.64	--			Calculation
	% removal	85% minimum	--	--		1/month	Calculation
	mg/L	30	45	--		2/month	8-Hour Composite
Total Suspended Solids (TSS)	lb/day	13.76	20.64	--			Calculation
	% removal	85% minimum	--	--		1/month	
	S.U.	6.5 – 9.0 at all times			Effluent	2/week	Grab
pH December – February	S.U.	6.5 – 8.5 at all times			Effluent	2/week	Grab
<i>E. coli</i> Bacteria ¹	#/100 mL	100 (geometric mean)	--	200	Effluent	1/week	Grab
Total Ammonia as N ¹ March - November	mg/L	1.93	--	4.83	Effluent	2/month	8-Hour Composite
	lb/day	0.885	--	2.22			Calculation

Parameter	Units	Effluent Limitations			Monitoring Requirements		
		Average Monthly Limit	Average Weekly Limit	Max Daily Limit	Sample Location	Sample Frequency	Sample Type
Total Ammonia as N ¹ December - February	mg/L	1.73	--	3.25	Effluent	2/month	8-Hour Composite
	lb/day	0.794	--	1.49			Calculation
Report Parameters							
Temperature	°C	--	--	--	Effluent	2/week	Grab
Dissolved Oxygen	mg/L	Report Minimum and monthly average effluent DO			Effluent	2/week	8-Hour Composite
Alkalinity	mg/L	--	--	--	Effluent	1/quarter ²	8-Hour Composite
Nitrate + Nitrite as N	mg/L	--	--	--	Effluent	Semi-annually ³	8-Hour Composite
Total Phosphorus as P	mg/L	--	--	--	Effluent	Semi-annually ³	8-Hour Composite
Total Nitrogen as N	mg/L	--	--	--	Effluent	Semi-annually ³	8-Hour Composite
Per- and Polyfluoroalkyl Substances (PFAS) ⁴	ng/L	--	--	--	Influent and Effluent	1/quarter ⁴	8-Hour Composite
	mg/kg dry weight	--	--	--	Sludge	1/quarter ⁴	Grab
<ol style="list-style-type: none"> 1. Reporting is required within 24 hours of a maximum daily limit violation. See Permit Parts I.B.2 and III.G. 2. Quarters are defined as January through March, April through June, July through September, and October through December. Monitoring results for pollutants with a sample frequency of quarterly must be reported on the March, June, September and December DMRs. 3. Sampling to be performed semi-annually must be performed at least once from April through September and at least once from October through March. Monitoring results for pollutants with a sample frequency of semi-annually must be reported on the March and September DMRs. 4. Monitoring for PFAS chemicals is required for 2 years (8 quarters), beginning at the start of the first complete quarter in the third year of the permit term. 							

A. BASIS FOR EFFLUENT LIMITS

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based effluent limits (TBELs) or WQBELs. TBELs are set according to the level of treatment that is achievable using available

technology. A WQBEL is designed to ensure that the WQS applicable to a waterbody are being met and may be more stringent than TBELs.

1. Pollutants of Concern

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

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

The wastewater treatment process for this facility includes both primary and secondary treatment, as well as UV disinfection. Pollutants expected in the discharge from a facility with this type of treatment, include but are not limited to: five-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), *E. coli* bacteria, pH, ammonia, temperature, phosphorus, and dissolved oxygen (DO).

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

- BOD₅
- DO
- TSS
- *E. coli* bacteria
- pH
- Temperature
- Ammonia
- Nitrogen
- Nitrate-Nitrite
- Phosphorus
- Per- and polyfluoroalkyl substances (PFAS)

2. Technology-Based Effluent Limits (TBELs)

a. Federal Secondary Treatment Effluent Limits

The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. CWA § 301 established a required performance level, referred to as “secondary treatment,” which POTWs were required to meet by July 1, 1977. 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 BOD₅, TSS, and pH. The federally promulgated secondary treatment effluent limits are listed in Table 7. For additional information and background refer to Part 5.1 *Technology Based Effluent Limits for POTWs* in the Permit Writers Manual.

Table 7. Secondary Treatment Effluent Limits

Parameter	30-day average	7-day average
BOD ₅	30 mg/L	45 mg/L
TSS	30 mg/L	45 mg/L
Removal for BOD ₅ and TSS (concentration)	85% (minimum)	--
pH	within the limits of 6.0 - 9.0 s.u.	

Source: 40 CFR § 133.102

b. Equivalent to Secondary Treatment Effluent Limits

The EPA has additionally established effluent limitations (40 CFR § 133.105) that are considered “equivalent to secondary treatment” which apply to facilities that meet certain conditions established under 40 CFR § 133.101(g). The federally promulgated equivalent to secondary treatment effluent limits are listed below in Table 8.

Table 8. Equivalent to Secondary Treatment Effluent Limits

Parameter	30-day average	7-day average
BOD ₅	45 mg/L	65 mg/L
TSS	45 mg/L	65 mg/L
Removal for BOD ₅ and TSS (concentration)	65% (minimum)	--

Source: 40 CFR § 133.105

Using DMR data from 2018 to 2024, after upgrades to the treatment process were completed, the EPA evaluated the facility’s eligibility for effluent limits based on equivalent to secondary treatment standards. To be eligible, a POTW must meet all three of the following criteria:

Criterion #1 – Consistently Exceeds Secondary Treatment Standards: The first criterion that must be satisfied to qualify for the equivalent to secondary standards is demonstrating that the BOD₅ and TSS effluent concentrations consistently achievable through proper operation and maintenance of the treatment works exceed the secondary treatment standards set forth in 40 CFR § 133.102(a) and (b). The regulations at 40 CFR § 133.101(f) define “effluent concentrations consistently achievable through proper operation and maintenance” as

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

Criterion #2 – Principal Treatment Process: The second criterion that a facility must meet to be eligible for equivalent to secondary standards is that its principal treatment process must be a trickling filter or waste stabilization pond (i.e., the largest percentage of BOD₅ and TSS removal is from a trickling filter or waste stabilization pond system).

Criterion #3 – Provide Significant Biological Treatment: The third criterion for applying equivalent to secondary standards is that the treatment works provides significant biological treatment of municipal wastewater. 40 CFR § 133.101(k) defines significant biological treatment as using an aerobic or anaerobic biological treatment process in a treatment works to consistently achieve a 30-day average of at least 65 percent removal of BOD₅.

The determinations for the three criteria are listed below. See Table 8 for the detailed Treatment Equivalent to Secondary Treatment determinations for BOD₅ and TSS for the determination regarding Significant Biological Treatment.

- Criterion 1 – Consistently Exceeds Secondary Treatment Standards, BOD₅: No; TSS: No
- Criterion 2 – Principal Treatment Process (waste stabilization ponds or trickling filter): Yes
- Criterion 3 – Provide Significant Biological Treatment: Yes

The EPA has determined that the facility does not meet Criterion 1, therefore secondary treatment standards are applicable. The 30-day average 95th percentile for BOD₅ and TSS, respectively, between 2018 and 2024 was 8.23 and 6.00 mg/L. The 7-day average in this timeframe was 8.98 and 5.75 mg/L, respectively.

c. Alternative State Requirements and Equivalent to Secondary Treatment Effluent Limits

The 2012 permit used Alternative State Requirements, described in 40 CFR § 133.105(d), as the basis for TSS limits. However, after the 2018 facility upgrades, the facility no longer meets the criteria set forth in 40 CFR § 133.105(d); therefore, the EPA cannot use Alternative State Requirements to establish effluent limits.

d. Mass-Based Limits

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

Mass based limit = concentration limit (mg/L) × design flow (mgd) × 8.34¹

Since the design flow for this facility is 0.055 mgd, the technology-based mass limits for BOD₅ and TSS are calculated as follows:

Average Monthly Limit = 30 mg/L × 0.055 mgd × 8.34 = 13.761 lbs/day

Average Weekly Limit = 45 mg/L × 0.055 mgd × 8.34 = 20.64 lbs/day

3. Chlorine

Chlorination is cited in the 2012 permit as a form of disinfection to the wastewater prior to discharge. The facility confirmed that chlorine is no longer used anywhere within the facility. As chlorine is no longer used for disinfection, the EPA proposes to remove the chlorine effluent limits.

4. Water Quality-Based Effluent Limits (WQBELs)

a. Statutory and Regulatory Basis

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

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

¹ 8.34 is a conversion factor with units (lb ×L)/(mg × gallon×10⁶)

Table 9. Applicable Water Quality Standards

Pollutant	Designated Use	Criteria
Dissolved Oxygen (DO)	Salmonid spawning, rearing, and migration	10 mg/L or 90% saturation
<i>E. coli</i>	Salmonid spawning, rearing, and migration	Geometric mean value of 100 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than 10 sample points exist) obtained within the averaging period exceeding 320 CFU or MPN per 100 mL.
Temperature	Salmonid spawning/rearing	Temperature shall not exceed a 1-DMax of 21.0°C due to human activities. When natural conditions exceed a 1-DMax of 21.0°C, no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C; nor shall such temperature increases, at any time, exceed $t = 34/(T + 9)$.

b. Reasonable Potential Analysis and Need for WQBELs

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

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

The Washington WQS at WAC 173-201A-400 provides Washington's mixing zone policy for point source discharges. The EPA proposes to use a mixing zone of 25% per Washington WQS during irrigation season between March and November. During non-irrigation season between December and February, when there is no flow in the receiving water, there is no authorized mixing zone, and the dilution factors are 1.0. The proposed mixing zones are summarized in Table 10. All dilution factors are calculated with the effluent flow rate set equal to the design flow of 0.055 mgd.

In the 2012 permit, there was a narrative WQBEL stating that the permittee must not discharge any floating solids, visible foam in other than trace amounts, or oily wastes that produce a sheen on the surface of the receiving water. This was included in error and was based on the Idaho permit and fact sheet template.

Table 10. Mixing zones

Criteria Type	Critical Low Flow (cfs)	Mixing Zone (% of Critical Low Flow)	Dilution Factor (March – November)
Acute Aquatic Life	10	2.5	3.94
Chronic Aquatic Life (except ammonia)	10	25	30.38

The reasonable potential analysis and WQBEL calculations were based on mixing zones shown in Table 10. The equations used to conduct the reasonable potential analysis and calculate the WQBELs are provided in Appendix C.

As discussed in Part IV.A.1, the pollutants of concern in the discharge are BOD_5 , DO, TSS, pH, temperature, *E. coli*, ammonia, nitrate plus nitrite, nitrogen, phosphorous, and PFAS. Each parameter is summarized in Part IV.A.4.c and the equations used to conduct the reasonable potential analysis and calculate the WQBELs are provided in Appendix D.

The facility discharges to Tribal waters on the Yakama Nation Reservation. However, since there are no Tribal WQS, the Washington WQS were used to develop permit limits.

c. Reasonable Potential and WQBELs

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

Ammonia

Ammonia criteria are based on a formula which relies on the pH and temperature of the receiving water, because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature. Therefore, the criteria become more stringent as pH and temperature increase. Figure 1, below, details the equations used to determine water quality criteria for ammonia.

Figure 1. Ammonia Criteria calculation

INPUT	
1. Receiving Water Temperature (deg C):	17.7
2. Receiving Water pH:	7.7
3. Is salmonid habitat an existing or designated use?	Yes
4. Are non-salmonid early life stages present or absent?	Present
OUTPUT	
Using mixed temp and pH at mixing zone boundaries?	
Ratio	14.543
FT	1.400
FPH	1.250
pKa	9.476
Unionized Fraction	0.015
Unionized ammonia NH ₃ criteria (mg/L as NH ₃)	
Acute:	0.187
Chronic:	0.031
RESULTS	
Total ammonia nitrogen criteria (mg/L as N):	
Acute:	10.486
Chronic:	1.759

Two reasonable potential calculations were conducted to assess ammonia across the seasonal flow periods of Harrah Drain; one for December – February, when there is no flow in Harrah Drain, and one for March – November, when flow in Harrah Drain is present. The EPA found that the Harrah WWTP discharge would have the reasonable potential to cause or contribute to an excursion of the water quality criteria between the months of December and February, but there would not be reasonable potential to cause or contribute to an excursion of the water quality criteria between the months of March and November. Therefore, more stringent ammonia limits are proposed for the December – February period, with the 2012 permit limits continued for the March – November period. See Table 5 of the fact sheet and Section I.B. of the draft permit. See Appendix D for reasonable potential and effluent limit calculations for ammonia.

The monitoring frequencies of ammonia have been reduced to one sample every two weeks because historic discharges have been below the effluent limits, as well as the significant upgrades the facility has undergone since the last permit. The average ammonia discharge between the months of

December and February is 1.09 mg/L, with the March through November average at 0.12, both below the respective average monthly limits of 1.82 and 1.93 mg/L. The proposed reduction in ammonia monitoring is consistent with the Interim Guidance for Performance-Based Reduction of NPDES Permit Monitoring Frequency (EPA 1996).

pH

The applicable water quality criterion at WAC 173-201A-200(1)(g) for pH states that the pH must be within the range of 6.5 to 8.5 standard units, with a human-caused variation of less than 0.5 standard units. The minimum effluent pH measured between September 2018 and March 2024 was 6.4 standard units and the maximum effluent pH was 8.9 standard units. The 5th percentile pH in the Harrah Drain in this timeframe is 7.50 standard units and the 95th percentile pH is 8.80 standard units. Thus, the pH of the effluent is similar to the pH of the receiving water. The EPA therefore does not expect the effluent to change the pH of the Harrah Drain by more than 0.5 standard units.

From December through February, there is no flow in the receiving water upstream from the discharge; therefore, the effluent must meet the pH criterion (a range of 6.5 to 8.5 standard units) at the point of discharge.

From March through November, the receiving water can provide dilution of the effluent. A reasonable potential analysis determined that Ecology's water quality criteria for pH will be achieved in the receiving water if the effluent pH is within the range of 6.5 to 9.0 standard units (see Appendix D).

DO and BOD₅

Natural decomposition of organic material in wastewater effluent impacts dissolved oxygen in the receiving water. The BOD₅ of an effluent sample indicates the amount of biodegradable material in the wastewater and estimates the magnitude of oxygen consumption the wastewater will generate in the receiving water. It is assumed that the more stringent proposed BOD₅ TBEL will be stringent enough to protect DO downstream. The facility's average effluent DO is 9.64 mg/L. Using the facility's effluent temperature average of 17.6 °C, and at an elevation of 829 ft, the average effluent DO saturation is 104.1%. The Washington WQS at WAC 173-201A-200 for the applicable use describes a minimum DO saturation of 90%. Because the receiving water is intermittent and there is a concern for downstream DO, effluent monitoring of DO is required in this permit.

E. coli

The Washington WQS at WAC 173-201A-200(2)(b) state that for waters of the State of Washington that are designated for primary contact recreation, *E. coli* organism levels within an averaging period must not exceed a

geometric mean value of 100 CFU or MPN per 100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained within the averaging period exceeding 320 CFU or MPN per 100 mL. A mixing zone is not appropriate for bacteria for waters designated for contact recreation. The existing permit contains effluent limits for *E. coli* of 100 CFU per 100 mL (average monthly limit) and 200 CFU per 100 mL (daily maximum limit). Since these effluent limitations meet Washington's WQS, these limits are retained in the current permit.

Temperature

The applicable site-specific WQS, described in Table 9, include an annual maximum temperature criterion applicable to the receiving water at the closest point of Washington water quality standards, WRIA 37, Lower Yakima. This criterion states "temperature shall not exceed a 1-Dmax of 21°C due to human activities. When natural conditions exceed a 1-DMax of 21°C, no temperature increase will be allowed which will raise the receiving water temperature by greater than 0.3°C; nor shall such temperature increases, at any time, exceed $t=34/(T+9)$."

From December - February, the maximum effluent temperature is 16.5 °C which is less than the applicable temperature criterion. Between March and November, Harrah Drain has flow since irrigation occurs within this time period. Therefore, between March and November, the effluent is diluted when it discharges into Harrah Drain.

A reasonable potential analysis was completed for temperature, (see Appendix D) which found temperature would not have the reasonable potential to cause or contribute to an excursion of the water quality criteria. Therefore, limits are not included for temperature.

Total Phosphorus

Between 2018 and 2024, the median effluent total phosphorus (TP) concentration was 6.75 mg/L while the median effluent discharge was 0.034 mgd. Therefore, the median effluent TP load, is 1.9 lb/day.

The median TP load in Harrah Drain (estimated from the median flow and TP concentration in the drain) is 17.8 lb/day. Thus, the effluent loading of TP from the Town of Harrah WWTP is 10% of the TP load in Marion Drain. These calculations assume that TP is a conservative pollutant; however, some portion of the TP in the effluent is likely taken up by algae and aquatic plants in Harrah and Marion Drains before reaching the mouth of Marion Drain.

Because the effluent loading of TP is small relative to the total loading in the Yakima River or Marion Drain, the EPA has not established effluent limits for total phosphorus. The EPA has proposed to require continued monitoring for TP in the draft permit.

Total Nitrogen and Nitrate + Nitrite

The Washington WQS do not establish water quality criteria for total nitrogen or nitrate + nitrite. While required to do so by the 2012 permit, the operator did not monitor the receiving water for nitrate plus nitrite (as N). Because of this lack of data, a reasonable potential analysis is not possible for nitrate + nitrite. The geomean of effluent nitrate + nitrite between 2019 and 2024 is 24.83 mg/L. This draft permit proposes continued sampling of nitrate + nitrite.

The geomean of effluent total nitrogen between 2019 and 2024 is 8.71 mg/L. With an average discharge flow of 0.034 mgd and an average stream flow of 23.68 mgd in Harrah Drain, the Harrah WWTP's average dilution ratio is 0.14%. Between this high dilution rate and the reasonable potential analysis for ammonia not indicating the discharge would not cause or contribute to an excursion of the water quality criteria, limits for total nitrogen are not proposed.

d. Antibacksliding

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

The facility moved to UV disinfection and no longer uses chlorine in any part of its treatment process. CWA § 402(o)(2) states that a permittee may be exempt from backsliding if “material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation”. The replacement of chlorine with UV disinfection is a material and substantial alteration, therefore, an exception to backsliding applies and the chlorine effluent limits have been removed from this draft permit.

B. MONITORING REQUIREMENTS

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

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

The permit also requires the permittee to perform effluent monitoring required by Table A of the NPDES Form 2A application, so that these data will be available when the permittee applies for a renewal of its NPDES permit. See also Appendix J to 40 CFR Part 122.

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.

1. Effluent Monitoring

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

PFAS Monitoring

PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Discharges of PFAS above certain levels may cause adverse effects to human health or aquatic life. Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the draft permit requires that the permittee conduct quarterly influent, effluent, and sludge sampling for PFAS chemicals for two years. The monitoring requirements for PFAS chemicals are deferred until the third and fourth years of the permit term (beginning during the first complete quarter of the third year). This will give the permittee time to plan for this new monitoring requirement (e.g., to obtain funding, train employees, and find a suitable contract laboratory).

The purpose of these monitoring and reporting requirements is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits. The EPA is authorized to require this monitoring and reporting by CWA § 308(a). The permit conditions reflect the EPA's commitments in the PFAS Strategic Roadmap, which directs the Office of Water to leverage NPDES permits to reduce PFAS discharges to waterways "at the source and obtain more comprehensive information through monitoring on the sources of PFAS and quantity of PFAS discharged by these sources."

The EPA notes that there is currently not an analytical method approved in 40 CFR Part 136 for PFAS. As stated in 40 CFR § 122.44(i)(1)(iv)(B), in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test

procedure specified in the permit for such pollutants or pollutant parameters. Therefore, the Permit specifies that until there is an analytical method approved in 40 CFR Part 136 for PFAS, monitoring shall be conducted using Method 1633.

2. Surface Water Monitoring

In general, surface water monitoring may be required for pollutants of concern to assess the assimilative capacity of the receiving water for the pollutant. In addition, surface water monitoring may be required for pollutants for which the water quality criteria are dependent and to collect data for TMDL development if the facility discharges to an impaired water body. Table 11 presents the proposed surface water monitoring requirements for the draft permit. Surface water monitoring results must be submitted with the DMR.

Table 11. Surface Water Monitoring in Draft Permit

Parameter	Units	Monitoring Frequency ¹	Sample Type
Flow	CFS	2/year	Measure
Total Phosphorus as P	µg/L	2/year	Grab
Nitrate +Nitrite as N	mg/L	2/year	Grab
Total Nitrogen as N	mg/L	2/year	Grab
Dissolved Oxygen	mg/L	2/year	Grab
pH	S.U.	2/year	Grab

1. Receiving water samples must be taken when the Harrah Drain flows upstream of the discharge.

3. Electronic Submission of Discharge Monitoring Reports

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

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

C. 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.

V. OTHER PERMIT CONDITIONS

A. QUALITY ASSURANCE PLAN

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

B. OPERATION AND MAINTENANCE PLAN

The permit requires the Town of Harrah 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 permit. The plan must be retained on site and made available to the EPA upon request.

C. SANITARY SEWER OVERFLOWS AND PROPER OPERATION AND MAINTENANCE OF THE COLLECTION SYSTEM

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

The following specific permit conditions apply:

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

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

Third Party Notice – The permit requires that the permittee establish a process to notify specified third parties of SSOs that may endanger health due to a likelihood of human exposure; or unanticipated bypass and upset that exceeds any effluent limitation in the permit or that may endanger health due to a likelihood of human exposure. The permittee is required to develop, in consultation with appropriate authorities at the local, county, Tribal and/or state level, a plan that describes how, under various overflow (and unanticipated bypass and upset) scenarios, the public, as

well as other entities, would be notified of overflows that may endanger health. The plan should identify all overflows that would be reported and to whom, and the specific information that would be reported. The plan should include a description of lines of communication and the identities of responsible officials. (See 40 CFR § 122.41(l)(6)).

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

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

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

D. ENVIRONMENTAL JUSTICE

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

The Harrah WWTP is located within or near a Census block group that is potentially overburdened because of particulate matter, cancer risk, respiratory hazard index, lead paint. In order to ensure that individuals near the facility are able to participate meaningfully in the permit process, the EPA will work collaboratively with the community to conduct outreach activities. These include posting the proposed permit and fact sheet in public places, the Yakama Nation website, and in other media the Yakama Nation deems is necessary to ensure members are able to participate in the review and comment period.

Regardless of whether a facility is located near a potentially overburdened community, the EPA encourages permittees to review (and to consider adopting,

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

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

E. 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.

F. DESIGN CRITERIA

The permit includes design criteria requirements. This provision requires the permittee to compare influent flow to the facility's design flow and prepare a facility plan for maintaining compliance with NPDES permit effluent limits when the flow exceeds 85% of the design criteria values for any two months in a twelve-month period.

VI. OTHER LEGAL REQUIREMENTS

A. ENDANGERED SPECIES ACT

The Endangered Species Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the U.S. Fish and Wildlife Service (USFWS) if their actions could beneficially or adversely affect any threatened or endangered species. The threatened and endangered species lists states that the Gray Wolf, North American Wolverine, Yellow-billed Cuckoo, Middle Columbia River steelhead, and bull trout are threatened species found within the area. According to USFWS's Information for Planning and Conservation tool, the area of and immediately downstream of the discharge from the Harrah WWTP is not a designated critical habitat for any endangered or threatened species.

Gray Wolf (*Canis lupis*) (endangered) and North American Wolverine (*Gulo gulo luscus*) (threatened)

Both gray wolves and North American wolverines are typically high-elevation territorial animals that avoid the presence of human civilization and seek geographic isolation from anthropogenic stressors (USFWS, 2023(a); USFWS, 2023(b)). Because of

the proximity of the Town of Harrah, it is not likely that these animals are present within the immediate area of the Harrah WWTP.

Yellow-billed Cuckoo (*Coccyzus americanus*) (threatened)

The primary cause of decline of yellow-billed cuckoo is the loss and degradation of riparian breeding habitat, which typically entails wooded riparian zones with dense cover (USFWS, 2021). The area surrounding and immediately downstream of the Harrah WWTP is open agricultural land that is not designated as critical habitat for the yellow-billed cuckoo. Because the yellow-billed cuckoos generally prefer wooded and protected areas, the species is unlikely to come in contact with any area within the vicinity of the discharge.

Middle-Columbia River Steelhead (*Oncorhynchus mykiss*) and Bull Trout (*Salvelinus confluentus*) (threatened)

Bull trout are cold-water salmonid species that are seldom found in waters where temperatures exceed 15 to 17.8 °C. They require unblocked migratory corridors, and seek out clean gravel bottoms (USFWS, 2010), which are largely different from the rough irrigation canals that comprise the Harrah and Marion Drains. A review of the *Bull Trout (Salvelinus confluentus) Draft Recovery Plan* (USFWS, 2002) found that the Ahtanum Creek local population is the only population near the action area, which is 15-20 miles north of the action area. Because of the physical blockades and high temperatures of Harrah Drain, it is unlikely that bull trout are ever present within the stream.

Middle-Columbia River Steelhead are also cold-water salmonid species and seek out cold water refuges for spawning. Since Harrah Drain is relatively warm and does not contain cold water refuges, they are not likely present within Harrah Drain. However, if these steelhead are present, the permitted discharge is not likely to affect the species. Between 2018 and 2024, the average monthly dissolved oxygen in the effluent was 10.16 mg/L, compared to the average ambient dissolved oxygen of 10.40 mg/L. During this same period, the effluent average effluent temperature was 17.6 °C, while the ambient temperature in Harrah Drain was 13.7 °C. The temperature levels in the discharge may slightly increase the temperature near the outfalls. Given the information available, the EPA has determined that the permit is not likely to adversely impact the environmental baseline.

A Biological Evaluation (EPA, 2012) was developed in support of the 2012 permit issuance, and the EPA determined that the discharge would have *no effect* on listed species. The EPA evaluated the ESA Section 7 regulations at 50 CFR § 402.16 to determine if the permit reissuance would trigger ESA consultation. The EPA has determined that the wastewater discharge will continue to have *no effect* on listed species and/or designated critical habitat for the following reasons:

1. The 2012 BE concluded that the discharges would have no effect on listed species or designated critical habitat, therefore, there was no expected

take of listed species as a result of the wastewater discharges.

2. There is no new information that would indicate that there are possible effects to ESA-listed species and/or designated critical habitat as a result of the wastewater discharges that were not previously considered.

3. The proposed permit reissuance does not change the composition, appreciable magnitude, duration, and/or frequency of the authorized wastewater discharge. Additionally, the proposed permit reissuance includes the same and more stringent effluent limits and monitoring requirements as what was evaluated during the 2012 Permit issuance process. Therefore, the action has not been modified in a manner that would cause effects to listed species and/or designated critical habitat not previously considered.

4. There have been no new species listed or critical habitat designated that may be affected by the action (i.e. all species and critical habitats were previously considered).

B. ESSENTIAL FISH HABITAT

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires the EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH). A review of the Essential Fish Habitat documents and EFH mapper tool shows that no critical habitats are present in Harrah Drain.

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

The EPA has determined that issuance of this permit will not affect EFH in the vicinity of the discharge. The EPA has prepared an EFH assessment which appears in Appendix E.

C. CWA § 401 CERTIFICATION

CWA § 401 requires a certification that any permit requirements comply with the appropriate sections of the CWA, as well as any appropriate requirements of applicable State or Tribal Law. See 33 USC § 1341(d). Since this facility discharges to Tribal waters and the Tribe has not been approved for TAS from the EPA under the CWA, the EPA is the certifying authority. The EPA is taking comment on the EPA's intent to certify this permit. See the draft certification in Appendix G.

D. ANTIDEGRADATION

The EPA has completed an antidegradation review. Comments on the antidegradation review can be submitted to the EPA as set forth above.

E. PERMIT EXPIRATION

The permit will expire five years from the effective date.

VII. REFERENCES

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Appendix A. Facility Information

Figure 2. The flow area between Harrah WWTP's outfall, and the relation to the State of Washington- Yakama Reservation of the Yakama Nation border.

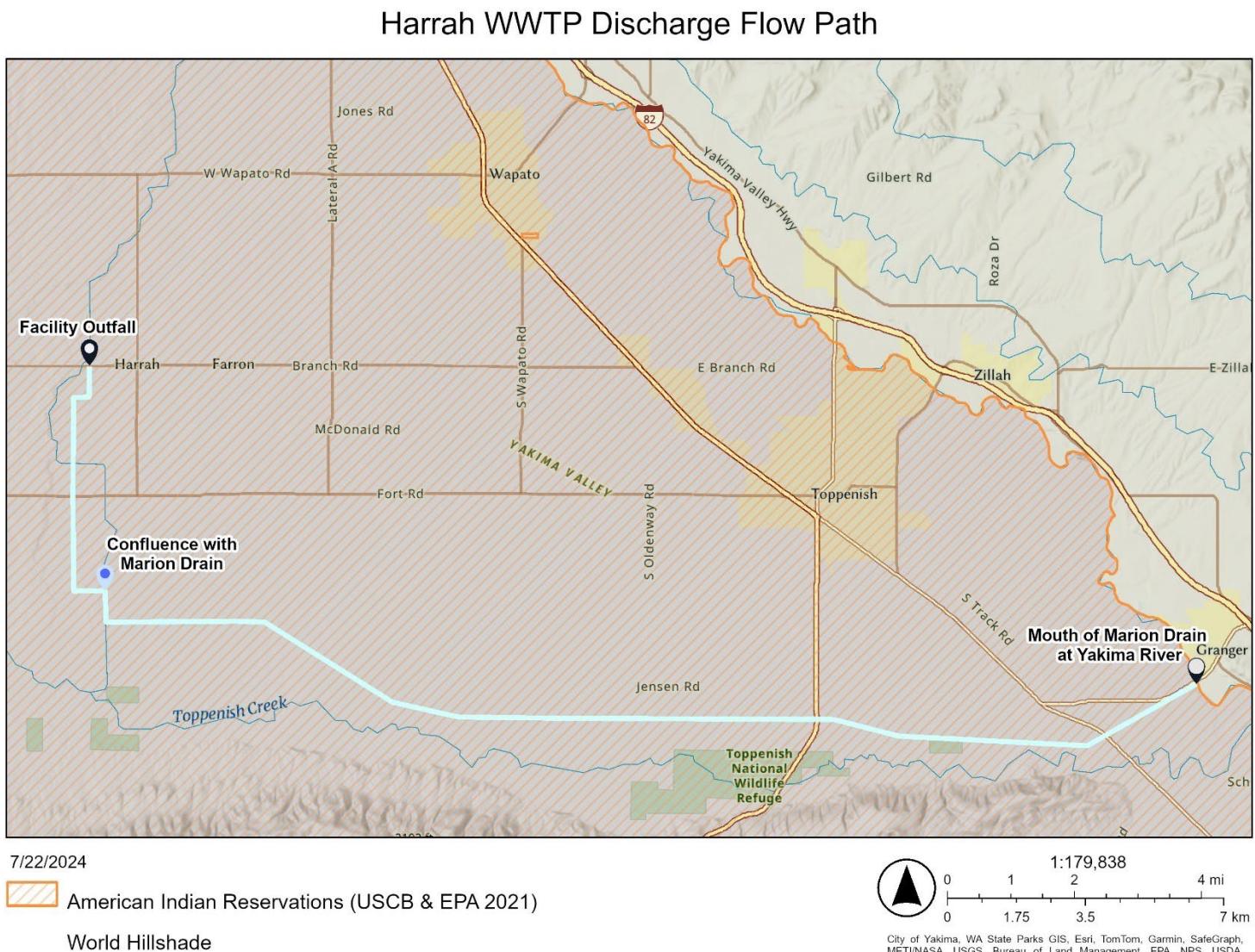
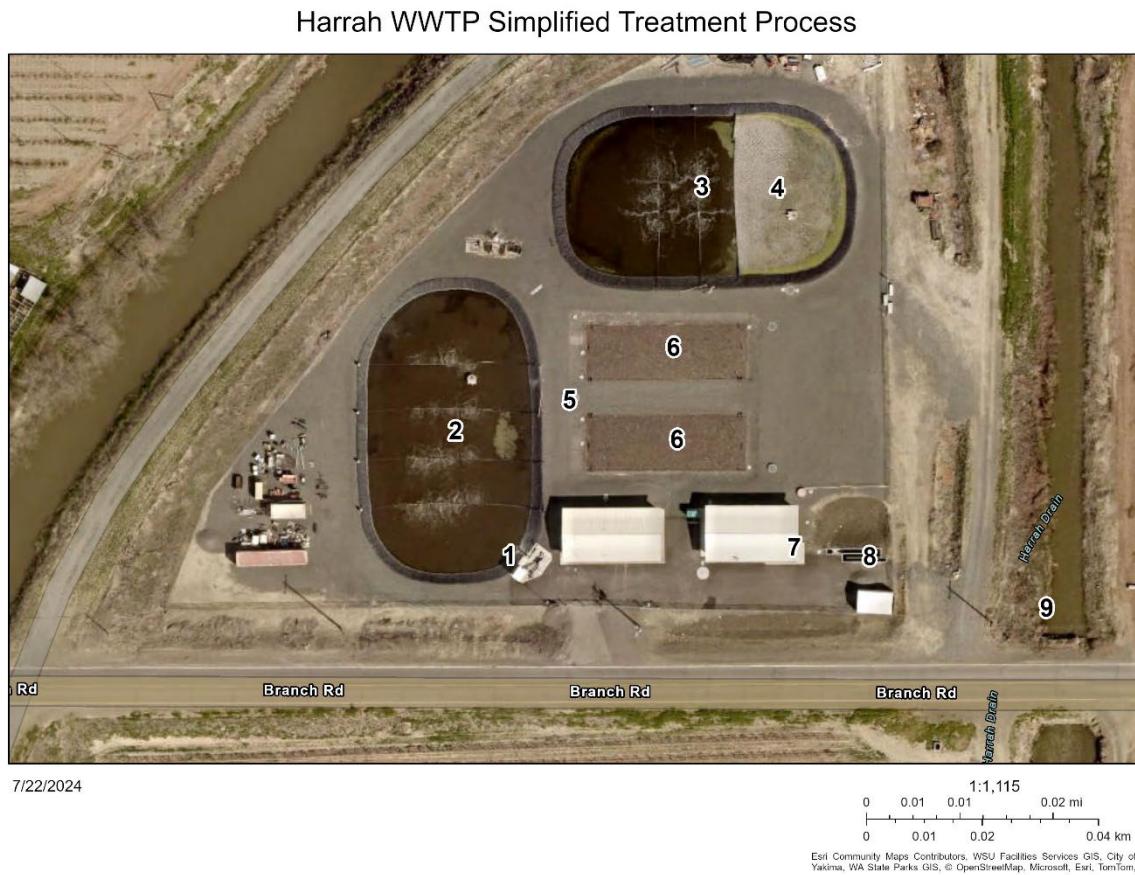


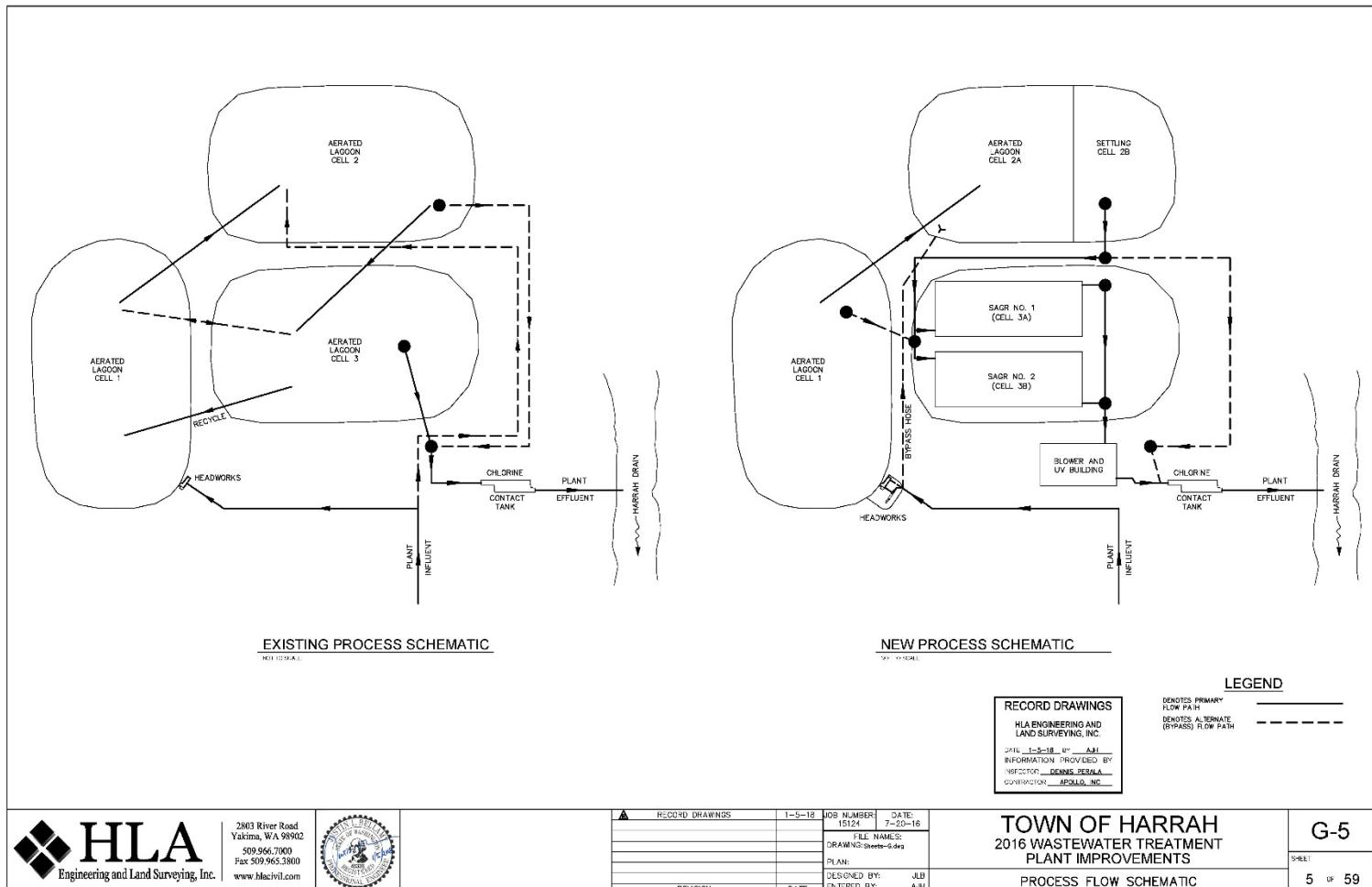
Figure 3. The facility map and basic treatment design



Facility treatment stages:

1. Raw effluent arrives at facility and is screened in the headworks.
2. Anaerobic biological decomposition begins in aeration lagoon 1.
3. Aeration lagoon 2 further breaks down sewage.
4. Soft wall divides the second lagoon into two portions. The second stage in this pond is settling. Duck weed and surface algae were observed.
5. Apportioning valve from aeration lagoon 2 into the two Submerged Attached Growth Reactors (SAGRs).
6. The two SAGR systems. These are a gravel aggregate designed to lower total nitrogen and are covered with bark for temperature insulation during summer and winter months.
7. UV treatment stations.
8. Final effluent flow meter and DMR sampling point.
9. Outfall into Harrah Drain.

Figure 4. the facility's pre upgrade and post upgrade layouts.



Appendix B. Water Quality Data

Tabulated Treatment Plant Effluent Data from DMRs

Parameter Desc	BOD, 7 day in mg/L		BOD, 7day in lbs/day		BOD, 30day in mg/L		BOD, 30day in lbs/day		BOD, % Removal		Monitoring Period End Date
	DMR	Limit	DMR	Limit	DMR	Limit	DMR	Limit	DMR	Limit	
BOD, 5-day, 20 deg. C	2.	59.	.57	27.	2.	39.	.57	18.	99.	65.	12/31/2018
BOD, 5-day, 20 deg. C	2.	59.	.57	27.	2.	39.	.57	18.	99.	65.	01/31/2019
BOD, 5-day, 20 deg. C	4.3	59.	.81	27.	3.15	39.	.51	18.	99.	65.	02/28/2019
BOD, 5-day, 20 deg. C	2.	59.	.55	27.	2.	39.	.55	18.	99.	65.	03/31/2019
BOD, 5-day, 20 deg. C	2.	59.	.57	27.	2.	39.	.57	18.	99.	65.	04/30/2019
BOD, 5-day, 20 deg. C	2.	59.	.58	27.	2.	39.	.58	18.	99.	65.	05/31/2019
BOD, 5-day, 20 deg. C	2.	59.	.58	27.	2.	39.	.58	18.	99.	65.	06/30/2019
BOD, 5-day, 20 deg. C	2.	59.	.61	27.	2.	39.	.61	18.	99.	65.	07/31/2019
BOD, 5-day, 20 deg. C	2.	59.	.61	27.	2.	39.	.61	18.	99.	65.	08/31/2019
BOD, 5-day, 20 deg. C	2.	59.	1.3	27.	2.	39.	.95	18.	99.	65.	09/30/2019
BOD, 5-day, 20 deg. C	2.	59.	.58	27.	2.	39.	.95	18.	99.	65.	10/31/2019
BOD, 5-day, 20 deg. C	2.	59.	.56	27.	2.	39.	.56	18.	99.	65.	11/30/2019
BOD, 5-day, 20 deg. C	2.	59.	.55	27.	2.	39.	.55	18.	99.	65.	12/31/2019
BOD, 5-day, 20 deg. C	3.	59.	.85	27.	2.5	39.	.7	18.	99.	65.	01/31/2020
BOD, 5-day, 20 deg. C	2.6	59.	.74	27.	2.6	39.	.73	18.	99.	65.	02/29/2020
BOD, 5-day, 20 deg. C	5.6	59.	1.6	27.	3.8	39.	1.1	18.	99.	65.	03/31/2020
BOD, 5-day, 20 deg. C	6	59.	1.7	27.	5	39.	1.5	18.	99.	65.	04/30/2020
BOD, 5-day, 20 deg. C	2.	59.	.52	27.	2.	39.	.52	18.	99.	65.	05/31/2020
BOD, 5-day, 20 deg. C	3	59.	.82	27.	2	39.	.68	18.	99.	65.	06/30/2020
BOD, 5-day, 20 deg. C	2.	59.	.57	27.	2.	39.	.57	18.	99.	65.	07/31/2020
BOD, 5-day, 20 deg. C	2	59.	.58	27.	2	39.	.58	18.	99.	65.	08/31/2020
BOD, 5-day, 20 deg. C	2.	59.	.57	27.	2	39.	.57	18.	99.	65.	09/30/2020
BOD, 5-day, 20 deg. C	2	59.	.55	27.	2	39.	.55	18.	99.	65.	10/31/2020
BOD, 5-day, 20 deg. C	3	59.	.83	27.	2.5	39.	.55	18.	99.	65.	11/30/2020
BOD, 5-day, 20 deg. C	5	59.	.13	27.	3.6	39.	1	18.	98.	65.	12/31/2020
BOD, 5-day, 20 deg. C	5.7	59.	1.47	27.	5.5	39.	1.42	18.	98.	65.	01/31/2021
BOD, 5-day, 20 deg. C	10.5	59.	2.8	27.	10.1	39.	2.7	18.	98.	65.	02/28/2021
BOD, 5-day, 20 deg. C	7.8	59.	2.2	27.	4.9	39.	1.38	18.	98.	65.	03/31/2021
BOD, 5-day, 20 deg. C	2	59.	.58	27.	2	39.	.58	18.	99.	65.	04/30/2021
BOD, 5-day, 20 deg. C	2.3	59.	.67	27.	2.15	39.	.62	18.	99.	65.	05/31/2021
BOD, 5-day, 20 deg. C	2	59.	.58	27.	2	39.	.58	18.	99.	65.	06/30/2021
BOD, 5-day, 20 deg. C	2	59.	.58	27.	2	39.	.58	18.	99.	65.	07/31/2021
BOD, 5-day, 20 deg. C	2	59.	.6	27.	2	39.	.6	18.	99.	65.	08/31/2021
BOD, 5-day, 20 deg. C	3.6	59.	1.02	27.	2.8	39.	.79	18.	99.	65.	09/30/2021
BOD, 5-day, 20 deg. C	2.4	59.	.68	27.	2.2	39.	.62	18.	99.	65.	10/31/2021
BOD, 5-day, 20 deg. C	7.7	59.	2.05	27.	4.8	39.	1.29	18.	99.	65.	11/30/2021
BOD, 5-day, 20 deg. C	2	59.	.53	27.	2	39.	.53	18.	99.	65.	12/31/2021
BOD, 5-day, 20 deg. C	5.8	59.	16.	27.	3.9	39.	8	18.	99.	65.	01/31/2022
BOD, 5-day, 20 deg. C	2	59.	.52	27.	2	39.	.52	18.	99.	65.	02/28/2022
BOD, 5-day, 20 deg. C	1	59.	.85	27.	1	39.	.7	18.	99.	65.	03/31/2022
BOD, 5-day, 20 deg. C	2	59.	.53	27.	2	39.	.53	18.	99.	65.	04/30/2022
BOD, 5-day, 20 deg. C	3	59.	.85	27.	2.5	39.	.56	18.	99.	65.	05/31/2022
BOD, 5-day, 20 deg. C	3	59.	.8	27.	2.5	39.	.66	18.	99.	65.	06/30/2022
BOD, 5-day, 20 deg. C	2.5	59.	.88	27.	2	39.	.8	18.	99.	65.	07/31/2022
BOD, 5-day, 20 deg. C	5.38	59.	1.57	27.	3.69	39.	1.07	18.	99.	65.	08/31/2022
BOD, 5-day, 20 deg. C	2	59.	.58	27.	2	39.	.58	18.	99.	65.	09/30/2022
BOD, 5-day, 20 deg. C	4.4	59.	1.19	27.	3.7	39.	1.04	18.	97.	65.	10/31/2022
BOD, 5-day, 20 deg. C	2.5	59.	.68	27.	2.3	39.	.6	18.	99.	65.	11/30/2022
BOD, 5-day, 20 deg. C	2.4	59.	.64	27.	2.2	39.	.6	18.	99.	65.	12/31/2022
BOD, 5-day, 20 deg. C	7.5	59.	1.9	27.	4.9	39.	1.2	18.	97.5	65.	01/31/2023
BOD, 5-day, 20 deg. C	54.	59.	14.41	27.	28.25	39.	7.54	18.	92.	65.	02/28/2023
BOD, 5-day, 20 deg. C	9.3	59.	2.55	27.	8.9	39.	2.45	18.	97.	65.	03/31/2023
BOD, 5-day, 20 deg. C	24.	59.	6.8	27.	16.4	39.	4.6	18.	87.5	65.	04/30/2023
BOD, 5-day, 20 deg. C	4.6	59.	1.32	27.	3.3	39.	.94	18.	98.	65.	05/31/2023
BOD, 5-day, 20 deg. C	8	59.	1.7	27.	6.2	39.	1.4	18.	93.5	65.	06/30/2023
BOD, 5-day, 20 deg. C	6.7	59.	1.95	27.	4.3	39.	1.26	18.	93.	65.	07/31/2023
BOD, 5-day, 20 deg. C	2	59.	.58	27.	1.5	39.	.43	18.	98.	65.	08/31/2023
BOD, 5-day, 20 deg. C	6.8	59.	1.98	27.	4.4	39.	1.28	18.	94.	65.	09/30/2023
BOD, 5-day, 20 deg. C	2.6	59.	.71	27.	2.3	39.	.62	18.	95.	65.	10/31/2023
BOD, 5-day, 20 deg. C	2	59.	.53	27.	2	39.	.53	18.	99.	65.	11/30/2023
BOD, 5-day, 20 deg. C	2	59.	.53	27.	2	39.	.53	18.	99.	65.	12/31/2023
BOD, 5-day, 20 deg. C	2	59.	.51	27.	2	39.	.51	18.	99.	65.	01/31/2024
BOD, 5-day, 20 deg. C	2	59.	.55	27.	2	39.	.55	18.	99.	65.	02/29/2024

Parameter Desc	TSS, 7 day in mg/L		TSS, 7day in lbs/day		TSS, 30day in mg/L		TSS, 30day in lbs/day		TSS, % Removal		Monitoring Period End Date
	DMR	Limit	DMR	Limit	DMR	Limit	DMR	Limit	DMR	Limit	
Solids, total suspended	8.	92.	2.3	42.	7.	70.	2.	32.	96.	65.	09/30/2018
Solids, total suspended	6.	92.	2.3	42.	4.5	70.	2.	32.	98.	65.	10/31/2018
Solids, total suspended	5.	92.	1.4	42.	4.5	70.	1.3	32.	98.	65.	11/30/2018
Solids, total suspended	5.	92.	1.4	42.	4.	70.	1.2	32.	99.	65.	12/31/2018
Solids, total suspended	5.	92.	1.4	42.	4.	70.	1.2	32.	99.	65.	01/31/2019
Solids, total suspended	5.	92.	1.2	42.	4.	70.	.99	32.	98.	65.	02/28/2019
Solids, total suspended	6.	92.	1.6	42.	4.5	70.	1.2	32.	98.	65.	03/31/2019
Solids, total suspended	14.	92.	3.96	42.	8.	70.	3.	32.	97.	65.	04/30/2019
Solids, total suspended	7.	92.	2.	42.	6.	70.	1.7	32.	97.	65.	05/31/2019
Solids, total suspended	5.5	92.	1.6	42.	6.	70.	1.75	32.	98.	65.	06/30/2019
Solids, total suspended	5.	92.	1.54	42.	5.	70.	1.54	32.	98.	65.	07/31/2019
Solids, total suspended	4.	92.	1.2	42.	4.	70.	1.2	32.	99.	65.	08/31/2019
Solids, total suspended	10.	92.	5.	42.	1.6	70.	3.	32.	97.	65.	09/30/2019
Solids, total suspended	3.5	92.	1.1	42.	4.	70.	.99	32.	99.	65.	10/31/2019
Solids, total suspended	2.	92.	.67	42.	2.	70.	.67	32.	99.	65.	11/30/2019
Solids, total suspended	2.	92.	.55	42.	1.5	70.	.41	32.	99.	65.	12/31/2019
Solids, total suspended	2.	92.	.57	42.	1.5	70.	.42	32.	99.	65.	01/31/2020
Solids, total suspended	2.	92.	.55	42.	2.	70.	.55	32.	99.	65.	02/29/2020
Solids, total suspended	3.	92.	.85	42.	2.5	70.	.7	32.	99.	65.	03/31/2020
Solids, total suspended	3.	92.	.85	42.	2.	70.	.56	32.	99.	65.	04/30/2020
Solids, total suspended	4.	92.	1.03	42.	3.	70.	.76	32.	99.	65.	05/31/2020
Solids, total suspended	4.	92.	1.1	42.	3.	70.	.82	32.	99.	65.	06/30/2020
Solids, total suspended	3.	92.	.85	42.	2.5	70.	.7	32.	99.	65.	07/31/2020
Solids, total suspended	4.	92.	1.16	42.	3.	70.	.87	32.	98.	65.	08/31/2020
Solids, total suspended	6.	92.	1.8	42.	4.5	70.	1.28	32.	99.	65.	09/30/2020
Solids, total suspended	3.	92.	.82	42.	2.5	70.	.68	32.	99.	65.	10/31/2020
Solids, total suspended	2.	92.	.83	42.	2.	70.	.55	32.	99.	65.	11/30/2020
Solids, total suspended	4.	92.	1.1	42.	2.5	70.	.68	32.	99.	65.	12/31/2020
Solids, total suspended	2.	92.	.52	42.	2.	70.	.52	32.	99.	65.	01/31/2021
Solids, total suspended	4.	92.	1.06	42.	2.	70.	.66	32.	99.	65.	02/28/2021
Solids, total suspended	4.	92.	1.1	42.	3.	70.	.83	32.	98.	65.	03/31/2021
Solids, total suspended	1.	92.	.29	42.	1.	70.	.29	32.	99.	65.	04/30/2021
Solids, total suspended	3.	92.	.87	42.	2.5	70.	.72	32.	99.	65.	05/31/2021
Solids, total suspended	2.	92.	.58	42.	2.	70.	.58	32.	99.	65.	06/30/2021
Solids, total suspended	2.	92.	.58	42.	1.5	70.	.43	32.	99.	65.	07/31/2021
Solids, total suspended	2.	92.	.6	42.	2.	70.	.6	32.	99.	65.	08/31/2021
Solids, total suspended	5.	92.	1.42	42.	3.5	70.	.99	32.	99.	65.	09/30/2021
Solids, total suspended	2.	92.	.56	42.	1.5	70.	.42	32.	99.	65.	10/31/2021
Solids, total suspended	4.	92.	1.06	42.	3.	70.	.79	32.	99.	65.	11/30/2021
Solids, total suspended	2.	92.	.53	42.	2.	70.	.53	32.	99.	65.	12/31/2021
Solids, total suspended	1.	92.	.27	42.	1.	70.	.27	32.	99.	65.	01/31/2022
Solids, total suspended	2.	92.	.51	42.	1.5	70.	.38	32.	99.	65.	02/28/2022
Solids, total suspended	1.	92.	.28	42.	1.	70.	.28	32.	99.	65.	03/31/2022
Solids, total suspended	4.	92.	1.06	42.	3.	70.	.78	32.	99.	65.	04/30/2022
Solids, total suspended	2.	92.	.56	42.	2.	70.	.56	32.	99.	65.	05/31/2022
Solids, total suspended	.	92.	.53	42.	1.5	70.	.4	32.	99.	65.	06/30/2022
Solids, total suspended	2.	92.	.58	42.	2.	70.	.58	32.	99.	65.	07/31/2022
Solids, total suspended	2.	92.	.58	42.	2.	70.	.58	32.	99.	65.	08/31/2022
Solids, total suspended	2.	92.	.58	42.	1.5	70.	.43	32.	99.	65.	09/30/2022
Solids, total suspended	2.	92.	.55	42.	1.5	70.	.41	32.	99.	65.	10/31/2022
Solids, total suspended	1.	92.	.26	42.	1.	70.	.26	32.	99.	65.	11/30/2022
Solids, total suspended	5.	92.	1.4	42.	3.5	70.	.97	32.	99.	65.	12/31/2022
Solids, total suspended	1.	92.	.25	42.	1.	70.	.25	32.	99.	65.	01/31/2023
Solids, total suspended	1.	92.	.53	42.	1.5	70.	.4	32.	99.	65.	02/28/2023
Solids, total suspended	2.	92.	.55	42.	1.5	70.	.41	32.	99.	65.	03/31/2023
Solids, total suspended	1.	92.	.28	42.	1.	70.	.28	32.	99.	65.	04/30/2023
Solids, total suspended	2.	92.	.56	42.	1.5	70.	.42	32.	99.	65.	05/31/2023
Solids, total suspended	1.	92.	.27	42.	1.	70.	.27	32.	99.	65.	06/30/2023
Solids, total suspended	2.	92.	.58	42.	1.5	70.	.43	32.	99.	65.	07/31/2023
Solids, total suspended	2.	92.	.58	42.	1.5	70.	.44	32.	99.	65.	08/31/2023
Solids, total suspended	1.	92.	.29	42.	1.	70.	.29	32.	99.	65.	09/30/2023
Solids, total suspended	2.	92.	.55	42.	2.	70.	.55	32.	99.	65.	10/31/2023
Solids, total suspended	2.	92.	.53	42.	1.5	70.	.39	32.	99.	65.	11/30/2023
Solids, total suspended	2.	92.	.53	42.	1.5	70.	.39	32.	99.	65.	12/31/2023
Solids, total suspended	1.	92.	.26	42.	1.	70.	.26	32.	99.	65.	01/31/2024
Solids, total suspended	1.	92.	.27	42.	1.	70.	.27	32.	99.	65.	02/29/2024

Parameter Desc	Daily Max Concentration		Daily Max Loading		Monthly Average Concentration		Monthly Average Loading		Monitoring Period End Date	
	µg/L		g/day		µg/L		g/day			
	DMR	Limit	DMR	Limit	DMR	Limit	DMR	Limit		
Chlorine, total residual		50.		10.4		50.		10.4	09/30/2018	
Chlorine, total residual		50.		10.4		50.		10.4	10/31/2018	
Chlorine, total residual		50.		10.4		50.		10.4	11/30/2018	
Chlorine, total residual		50.		10.4		50.		10.4	12/31/2018	
Chlorine, total residual		50.		10.4		50.		10.4	01/31/2019	
Chlorine, total residual		50.		10.4		50.		10.4	02/28/2019	
Chlorine, total residual		50.		10.4		50.		10.4	03/31/2019	
Chlorine, total residual		50.		10.4		50.		10.4	04/30/2019	
Chlorine, total residual		50.		10.4		50.		10.4	05/31/2019	
Chlorine, total residual		50.		10.4		50.		10.4	06/30/2019	
Chlorine, total residual		50.		10.4		50.		10.4	07/31/2019	
Chlorine, total residual		50.		10.4		50.		10.4	08/31/2019	
Chlorine, total residual		50.		10.4		50.		10.4	09/30/2019	
Chlorine, total residual		50.		10.4		50.		10.4	10/31/2019	
Chlorine, total residual		50.		10.4		50.		10.4	11/30/2019	
Chlorine, total residual		50.		10.4		50.		10.4	12/31/2019	
Chlorine, total residual		50.		10.4		50.		10.4	01/31/2020	
Chlorine, total residual		50.		10.4		50.		10.4	02/29/2020	
Chlorine, total residual		50.		10.4		50.		10.4	03/31/2020	
Chlorine, total residual		50.		10.4		50.		10.4	04/30/2020	
Chlorine, total residual		50.		10.4		50.		10.4	05/31/2020	
Chlorine, total residual		50.		10.4		50.		10.4	06/30/2020	
Chlorine, total residual		50.		10.4		50.		10.4	07/31/2020	
Chlorine, total residual		50.		10.4		50.		10.4	08/31/2020	
Chlorine, total residual		50.		10.4		50.		10.4	09/30/2020	
Chlorine, total residual		50.		10.4		50.		10.4	10/31/2020	
Chlorine, total residual		50.		10.4		50.		10.4	11/30/2020	
Chlorine, total residual		50.		10.4		50.		10.4	12/31/2020	
Chlorine, total residual		50.		10.4		50.		10.4	01/31/2021	
Chlorine, total residual		50.		10.4		50.		10.4	02/28/2021	
Chlorine, total residual		50.		10.4		50.		10.4	03/31/2021	
Chlorine, total residual		50.		10.4		50.		10.4	04/30/2021	
Chlorine, total residual		50.		10.4		50.		10.4	05/31/2021	
Chlorine, total residual		50.		10.4		50.		10.4	06/30/2021	
Chlorine, total residual	9.	50.	9.	10.4	9.	50.	9.	10.4	07/31/2021	
Chlorine, total residual	9.	50.	9.	10.4	9.	50.	9.	10.4	08/31/2021	
Chlorine, total residual		50.		10.4		50.		10.4	09/30/2021	
Chlorine, total residual		50.		10.4		50.		10.4	10/31/2021	
Chlorine, total residual		50.		10.4		50.		10.4	11/30/2021	
Chlorine, total residual		50.		10.4		50.		10.4	12/31/2021	
Chlorine, total residual		50.		10.4		50.		10.4	01/31/2022	
Chlorine, total residual		50.		10.4		50.		10.4	02/28/2022	
Chlorine, total residual		50.		10.4		50.		10.4	03/31/2022	
Chlorine, total residual		50.		10.4		50.		10.4	04/30/2022	
Chlorine, total residual		50.		10.4		50.		10.4	05/31/2022	
Chlorine, total residual		50.		10.4		50.		10.4	06/30/2022	
Chlorine, total residual		50.		10.4		50.		10.4	07/31/2022	
Chlorine, total residual		50.		10.4		50.		10.4	08/31/2022	
Chlorine, total residual		50.		10.4		50.		10.4	09/30/2022	
Chlorine, total residual		50.		10.4		50.		10.4	10/31/2022	
Chlorine, total residual		50.		10.4		50.		10.4	11/30/2022	
Chlorine, total residual		50.		10.4		50.		10.4	12/31/2022	
Chlorine, total residual		50.		10.4		50.		10.4	01/31/2023	
Chlorine, total residual		50.		10.4		50.		10.4	02/28/2023	
Chlorine, total residual		50.		10.4		50.		10.4	03/31/2023	
Chlorine, total residual		50.		10.4		50.		10.4	04/30/2023	
Chlorine, total residual		50.		10.4		50.		10.4	05/31/2023	
Chlorine, total residual		50.		10.4		50.		10.4	06/30/2023	
Chlorine, total residual		50.		10.4		50.		10.4	07/31/2023	
Chlorine, total residual		50.		10.4		50.		10.4	08/31/2023	
Chlorine, total residual		50.		10.4		50.		10.4	09/30/2023	
Chlorine, total residual		50.		10.4		50.		10.4	10/31/2023	
Chlorine, total residual		50.		10.4		50.		10.4	11/30/2023	
Chlorine, total residual		50.		10.4		50.		10.4	12/31/2023	
Chlorine, total residual		50.		10.4		50.		10.4	01/31/2024	

Limits.Monitoring Location Desc	Parameter Code	Parameter Desc	DMR Parameters. Monitoring Location Desc	Statistical Base Short Desc	DMR Value	Limit Value	Limit Unit Desc	Monitoring Period Start Date	Monitoring Period End Date
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	28.	Milligrams per Liter	9/1/2018	09/30/2018	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	43.7	Milligrams per Liter	3/1/2019	03/31/2019	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	24.	Milligrams per Liter	9/1/2019	09/30/2019	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	44.4	Milligrams per Liter	3/1/2020	03/31/2020	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	13.8	Milligrams per Liter	9/1/2020	09/30/2020	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	45.3	Milligrams per Liter	3/1/2021	03/31/2021	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	15.5	Milligrams per Liter	9/1/2021	09/30/2021	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	43.6	Milligrams per Liter	3/1/2022	03/31/2022	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	11.7	Milligrams per Liter	9/1/2022	09/30/2022	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	36.2	Milligrams per Liter	3/1/2023	03/31/2023	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX	9.5	Milligrams per Liter	9/1/2023	09/30/2023	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	DAILY MX		Milligrams per Liter	3/1/2024	03/31/2024	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	28.	Milligrams per Liter	9/1/2018	09/30/2018	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	43.7	Milligrams per Liter	3/1/2019	03/31/2019	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	24.	Milligrams per Liter	9/1/2019	09/30/2019	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	44.4	Milligrams per Liter	3/1/2020	03/31/2020	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	13.8	Milligrams per Liter	9/1/2020	09/30/2020	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	45.3	Milligrams per Liter	3/1/2021	03/31/2021	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	15.5	Milligrams per Liter	9/1/2021	09/30/2021	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	43.6	Milligrams per Liter	3/1/2022	03/31/2022	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	11.7	Milligrams per Liter	9/1/2022	09/30/2022	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	36.2	Milligrams per Liter	3/1/2023	03/31/2023	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG	9.5	Milligrams per Liter	9/1/2023	09/30/2023	
Effluent Gross	00630	Nitrite + Nitrate total [as N]	Effluent Gross	MO AVG		Milligrams per Liter	3/1/2024	03/31/2024	

Limits.Monitoring Location Desc	Parameter Code	Parameter Desc	DMR Parameters.Monitoring Location Desc	Statistical Base Short Desc	DMR Value	Limit Value	Limit Unit Desc	Monitoring Period Start Date	Monitoring Period End Date
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	1.2		Milligrams	9/1/2018	09/30/2018
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	45.9		Milligrams	3/1/2019	03/31/2019
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	.7		Milligrams	9/1/2019	09/30/2019
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	46.6		Milligrams	3/1/2020	03/31/2020
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	1.		Milligrams	9/1/2020	09/30/2020
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	48.1		Milligrams	3/1/2021	03/31/2021
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	1.1		Milligrams	9/1/2021	09/30/2021
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	43.6		Milligrams	3/1/2022	03/31/2022
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	11.7		Milligrams	9/1/2022	09/30/2022
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	41.1		Milligrams	3/1/2023	03/31/2023
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX	11.		Milligrams	9/1/2023	09/30/2023
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	DAILY MX			Milligrams	3/1/2024	03/31/2024
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	1.2		Milligrams	9/1/2018	09/30/2018
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	45.9		Milligrams	3/1/2019	03/31/2019
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	.7		Milligrams	9/1/2019	09/30/2019
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	46.6		Milligrams	3/1/2020	03/31/2020
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	1.		Milligrams	9/1/2020	09/30/2020
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	48.1		Milligrams	3/1/2021	03/31/2021
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	1.1		Milligrams	9/1/2021	09/30/2021
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	43.6		Milligrams	3/1/2022	03/31/2022
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	11.7		Milligrams	9/1/2022	09/30/2022
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	41.1		Milligrams	3/1/2023	03/31/2023
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG	11.		Milligrams	9/1/2023	09/30/2023
Effluent Grc 00600		Nitrogen, total [as N]	Effluent Grc	MO AVG			Milligrams	3/1/2024	03/31/2024

Limits Monitoring Location Desc	Parameter Code	Parameter Desc	DMR Parameters Monitoring Location	Statistical Base Short Desc	DMR Value	Limit Value	Limit Unit Desc	Monitoring Period Start	Monitoring Period End Date
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.8	9.	Standard Units	9/1/2018	09/30/2018
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.9	9.	Standard Units	10/1/2018	10/31/2018
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.5	9.	Standard Units	11/1/2018	11/30/2018
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.1	8.5	Standard Units	12/1/2018	12/31/2018
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.4	8.5	Standard Units	1/1/2019	01/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	7.7	8.5	Standard Units	2/1/2019	02/28/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	7.6	9.	Standard Units	3/1/2019	03/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	7.5	9.	Standard Units	4/1/2019	04/30/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.1	9.	Standard Units	5/1/2019	05/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	6.56	9.	Standard Units	6/1/2019	06/30/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.42	9.	Standard Units	7/1/2019	07/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.1	9.	Standard Units	8/1/2019	08/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.4	9.	Standard Units	9/1/2019	09/30/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.5	9.	Standard Units	10/1/2019	10/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.9	9.	Standard Units	11/1/2019	11/30/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.9	8.5	Standard Units	12/1/2019	12/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.8	8.5	Standard Units	1/1/2020	01/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.3	8.5	Standard Units	2/1/2020	02/29/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.4	9.	Standard Units	3/1/2020	03/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	7.9	9.	Standard Units	4/1/2020	04/30/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.1	9.	Standard Units	5/1/2020	05/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.2	9.	Standard Units	6/1/2020	06/30/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.44	9.	Standard Units	7/1/2020	07/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.6	9.	Standard Units	8/1/2020	08/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.67	9.	Standard Units	9/1/2020	09/30/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	7.72	9.	Standard Units	10/1/2020	10/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.7	9.	Standard Units	11/1/2020	11/30/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.5	8.5	Standard Units	12/1/2020	12/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.3	8.5	Standard Units	1/1/2021	01/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	7.9	8.5	Standard Units	2/1/2021	02/28/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	7.9	9.	Standard Units	3/1/2021	03/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.18	9.	Standard Units	4/1/2021	04/30/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.44	9.	Standard Units	5/1/2021	05/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	9.	9.	Standard Units	6/1/2021	06/30/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.8	9.	Standard Units	7/1/2021	07/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.49	9.	Standard Units	8/1/2021	08/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.5	9.	Standard Units	9/1/2021	09/30/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.5	9.	Standard Units	10/1/2021	10/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.45	9.	Standard Units	11/1/2021	11/30/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.4	8.5	Standard Units	12/1/2021	12/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.3	8.5	Standard Units	1/1/2022	01/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.26	8.5	Standard Units	2/1/2022	02/28/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.2	9.	Standard Units	3/1/2022	03/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.4	9.	Standard Units	4/1/2022	04/30/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.4	9.	Standard Units	5/1/2022	05/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.3	9.	Standard Units	6/1/2022	06/30/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.3	9.	Standard Units	7/1/2022	07/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.4	9.	Standard Units	8/1/2022	08/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.53	9.	Standard Units	9/1/2022	09/30/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.6	9.	Standard Units	10/1/2022	10/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.6	9.	Standard Units	11/1/2022	11/30/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.6	9.	Standard Units	12/1/2022	12/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.5	9.	Standard Units	1/1/2023	01/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.2	8.5	Standard Units	2/1/2023	02/28/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.08	8.5	Standard Units	3/1/2023	03/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.1	9.	Standard Units	4/1/2023	04/30/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.33	9.	Standard Units	5/1/2023	05/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.6	9.	Standard Units	6/1/2023	06/30/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.6	9.	Standard Units	7/1/2023	07/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.77	9.	Standard Units	8/1/2023	08/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.79	9.	Standard Units	9/1/2023	09/30/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.79	9.	Standard Units	10/1/2023	10/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.74	9.	Standard Units	11/1/2023	11/30/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.24	9.	Standard Units	12/1/2023	12/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.	8.5	Standard Units	1/1/2024	01/31/2024
Effluent Gross	00400	pH	Effluent Gross	INST MAX	8.3	8.5	Standard Units	2/1/2024	02/29/2024

Limits Monitoring Location Desc	Parameter Code	Parameter Desc	DMR Parameters Monitoring Location	Statistical Base Short Desc	DMR Value	Limit Value	Limit Unit Desc	Monitoring Period Start	Monitoring Period End Date
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.7	6.3	Standard Units	9/1/2018	09/30/2018
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.5	6.3	Standard Units	10/1/2018	10/31/2018
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.3	6.3	Standard Units	11/1/2018	11/30/2018
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.	6.5	Standard Units	12/1/2018	12/31/2018
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.6	6.5	Standard Units	1/1/2019	01/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.5	6.5	Standard Units	2/1/2019	02/28/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	6.9	6.3	Standard Units	3/1/2019	03/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.2	6.3	Standard Units	4/1/2019	04/30/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.7	6.3	Standard Units	5/1/2019	05/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.97	6.3	Standard Units	6/1/2019	06/30/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.9	6.3	Standard Units	7/1/2019	07/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.9	6.3	Standard Units	8/1/2019	08/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.3	6.3	Standard Units	9/1/2019	09/30/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.3	6.3	Standard Units	10/1/2019	10/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.7	6.3	Standard Units	11/1/2019	11/30/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.8	6.5	Standard Units	12/1/2019	12/31/2019
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.5	6.5	Standard Units	1/1/2020	01/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.2	6.5	Standard Units	2/1/2020	02/29/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.7	6.3	Standard Units	3/1/2020	03/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.8	6.3	Standard Units	4/1/2020	04/30/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.	6.3	Standard Units	5/1/2020	05/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.1	6.3	Standard Units	6/1/2020	06/30/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.3	6.3	Standard Units	7/1/2020	07/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.5	6.3	Standard Units	8/1/2020	08/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.62	6.3	Standard Units	9/1/2020	09/30/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.67	6.3	Standard Units	10/1/2020	10/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.5	6.3	Standard Units	11/1/2020	11/30/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.4	6.5	Standard Units	12/1/2020	12/31/2020
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.	6.5	Standard Units	1/1/2021	01/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.7	6.5	Standard Units	2/1/2021	02/28/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.8	6.3	Standard Units	3/1/2021	03/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.87	6.3	Standard Units	4/1/2021	04/30/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.2	6.3	Standard Units	5/1/2021	05/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.2	6.3	Standard Units	6/1/2021	06/30/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.1	6.3	Standard Units	7/1/2021	07/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.36	6.3	Standard Units	8/1/2021	08/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.4	6.3	Standard Units	9/1/2021	09/30/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.4	6.3	Standard Units	10/1/2021	10/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.36	6.3	Standard Units	11/1/2021	11/30/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.9	6.5	Standard Units	12/1/2021	12/31/2021
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.1	6.5	Standard Units	1/1/2022	01/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.03	6.5	Standard Units	2/1/2022	02/28/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.	6.3	Standard Units	3/1/2022	03/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.2	6.3	Standard Units	4/1/2022	04/30/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.8	6.3	Standard Units	5/1/2022	05/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.9	6.3	Standard Units	6/1/2022	06/30/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.87	6.3	Standard Units	7/1/2022	07/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.2	6.3	Standard Units	8/1/2022	08/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.36	6.3	Standard Units	9/1/2022	09/30/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.4	6.3	Standard Units	10/1/2022	10/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.44	6.3	Standard Units	11/1/2022	11/30/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.5	6.3	Standard Units	12/1/2022	12/31/2022
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.4	6.3	Standard Units	1/1/2023	01/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.3	6.3	Standard Units	2/1/2023	02/28/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.4	6.3	Standard Units	3/1/2023	03/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.11	6.3	Standard Units	4/1/2023	04/30/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.2	6.3	Standard Units	5/1/2023	05/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.56	6.3	Standard Units	6/1/2023	06/30/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.6	6.3	Standard Units	7/1/2023	07/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.74	6.3	Standard Units	8/1/2023	08/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.69	6.3	Standard Units	9/1/2023	09/30/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	8.06	6.3	Standard Units	10/1/2023	10/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.97	6.3	Standard Units	11/1/2023	11/30/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.9	6.5	Standard Units	12/1/2023	12/31/2023
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.7	6.5	Standard Units	1/1/2024	01/31/2024
Effluent Gross	00400	pH	Effluent Gross	INST MIN	7.5	6.5	Standard Units	2/1/2024	02/29/2024

Limits Monitoring Location Desc	Parameter Code	Parameter Desc	DMR Param	Statistical Base Shor	DMR Value	Limit Value	Limit Unit	Monitoring	Monitoring Period
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.	Milligrams per L	9/1/2018	09/30/2018	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.26	Milligrams per L	10/1/2018	10/31/2018	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.46	Milligrams per L	11/1/2018	11/30/2018	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.91	Milligrams per L	12/1/2018	12/31/2018	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	12.47	Milligrams per L	1/1/2019	01/31/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	12.25	Milligrams per L	2/1/2019	02/28/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.8	Milligrams per L	3/1/2019	03/31/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.11	Milligrams per L	4/1/2019	04/30/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.04	Milligrams per L	5/1/2019	05/31/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.46	Milligrams per L	6/1/2019	06/30/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.24	Milligrams per L	7/1/2019	07/31/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.2	Milligrams per L	8/1/2019	08/31/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.2	Milligrams per L	9/1/2019	09/30/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.9	Milligrams per L	10/1/2019	10/31/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.5	Milligrams per L	11/1/2019	11/30/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	12.4	Milligrams per L	12/1/2019	12/31/2019	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.9	Milligrams per L	1/1/2020	01/31/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.68	Milligrams per L	2/1/2020	02/29/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.3	Milligrams per L	3/1/2020	03/31/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.13	Milligrams per L	4/1/2020	04/30/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.03	Milligrams per L	5/1/2020	05/31/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.6	Milligrams per L	6/1/2020	06/30/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.12	Milligrams per L	7/1/2020	07/31/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.95	Milligrams per L	8/1/2020	08/31/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.18	Milligrams per L	9/1/2020	09/30/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.26	Milligrams per L	10/1/2020	10/31/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.71	Milligrams per L	11/1/2020	11/30/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	12.02	Milligrams per L	12/1/2020	12/31/2020	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.32	Milligrams per L	1/1/2021	01/31/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.69	Milligrams per L	2/1/2021	02/28/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.73	Milligrams per L	3/1/2021	03/31/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.76	Milligrams per L	4/1/2021	04/30/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.04	Milligrams per L	5/1/2021	05/31/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.93	Milligrams per L	6/1/2021	06/30/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.75	Milligrams per L	7/1/2021	07/31/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.92	Milligrams per L	8/1/2021	08/31/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.66	Milligrams per L	9/1/2021	09/30/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.37	Milligrams per L	10/1/2021	10/31/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.47	Milligrams per L	11/1/2021	11/30/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.12	Milligrams per L	12/1/2021	12/31/2021	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.88	Milligrams per L	1/1/2022	01/31/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.11	Milligrams per L	2/1/2022	02/28/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.51	Milligrams per L	3/1/2022	03/31/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.01	Milligrams per L	4/1/2022	04/30/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.6	Milligrams per L	5/1/2022	05/31/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.54	Milligrams per L	6/1/2022	06/30/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.75	Milligrams per L	7/1/2022	07/31/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	6.77	Milligrams per L	8/1/2022	08/31/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.96	Milligrams per L	9/1/2022	09/30/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.78	Milligrams per L	10/1/2022	10/31/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.8	Milligrams per L	11/1/2022	11/30/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.67	Milligrams per L	12/1/2022	12/31/2022	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	11.43	Milligrams per L	1/1/2023	01/31/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.19	Milligrams per L	2/1/2023	02/28/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.33	Milligrams per L	3/1/2023	03/31/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.15	Milligrams per L	4/1/2023	04/30/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.73	Milligrams per L	5/1/2023	05/31/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.74	Milligrams per L	6/1/2023	06/30/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.49	Milligrams per L	7/1/2023	07/31/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.43	Milligrams per L	8/1/2023	08/31/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	7.93	Milligrams per L	9/1/2023	09/30/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.4	Milligrams per L	10/1/2023	10/31/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.66	Milligrams per L	11/1/2023	11/30/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.52	Milligrams per L	12/1/2023	12/31/2023	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	10.56	Milligrams per L	1/1/2024	01/31/2024	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	8.77	Milligrams per L	2/1/2024	02/29/2024	
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gross	DAILY MN	9.31	Milligrams per L	3/1/2024	03/31/2024	

Limits Monitoring Location Desc	Parameter Code	Parameter Desc	DMR Param	Statistical Base Shown	DMR Value	Limit Value	Limit Unit	Monitoring freq	Monitoring Period
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.6		Milligrams per L	9/1/2018	09/30/2018
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	9.7		Milligrams per L	10/1/2018	10/31/2018
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	10.72		Milligrams per L	11/1/2018	11/30/2018
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.53		Milligrams per L	12/1/2018	12/31/2018
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.76		Milligrams per L	1/1/2019	01/31/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.99		Milligrams per L	2/1/2019	02/28/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.63		Milligrams per L	3/1/2019	03/31/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	10.78		Milligrams per L	4/1/2019	04/30/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	9.52		Milligrams per L	5/1/2019	05/31/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.83		Milligrams per L	6/1/2019	06/30/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.39		Milligrams per L	7/1/2019	07/31/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.5		Milligrams per L	8/1/2019	08/31/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.96		Milligrams per L	9/1/2019	09/30/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	10.6		Milligrams per L	10/1/2019	10/31/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.7		Milligrams per L	11/1/2019	11/30/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.16		Milligrams per L	12/1/2019	12/31/2019
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.		Milligrams per L	1/1/2020	01/31/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.97		Milligrams per L	2/1/2020	02/29/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.7		Milligrams per L	3/1/2020	03/31/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	10.54		Milligrams per L	4/1/2020	04/30/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	9.28		Milligrams per L	5/1/2020	05/31/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.8		Milligrams per L	6/1/2020	06/30/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.37		Milligrams per L	7/1/2020	07/31/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.13		Milligrams per L	8/1/2020	08/31/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.73		Milligrams per L	9/1/2020	09/30/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	9.88		Milligrams per L	10/1/2020	10/31/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.16		Milligrams per L	11/1/2020	11/30/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.26		Milligrams per L	12/1/2020	12/31/2020
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.73		Milligrams per L	1/1/2021	01/31/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.06		Milligrams per L	2/1/2021	02/28/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.24		Milligrams per L	3/1/2021	03/31/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	10.31		Milligrams per L	4/1/2021	04/30/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	9.25		Milligrams per L	5/1/2021	05/31/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.59		Milligrams per L	6/1/2021	06/30/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	7.9		Milligrams per L	7/1/2021	07/31/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.07		Milligrams per L	8/1/2021	08/31/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.85		Milligrams per L	9/1/2021	09/30/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	9.94		Milligrams per L	10/1/2021	10/31/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.02		Milligrams per L	11/1/2021	11/30/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.34		Milligrams per L	12/1/2021	12/31/2021
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.73		Milligrams per L	1/1/2022	01/31/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.55		Milligrams per L	2/1/2022	02/28/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.24		Milligrams per L	3/1/2022	03/31/2022
Effluent Gross	.	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	10.33		Milligrams per L	4/1/2022	04/30/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	9.72		Milligrams per L	5/1/2022	05/31/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.99		Milligrams per L	6/1/2022	06/30/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.01		Milligrams per L	7/1/2022	07/31/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	7.52		Milligrams per L	8/1/2022	08/31/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.41		Milligrams per L	9/1/2022	09/30/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	9.1		Milligrams per L	10/1/2022	10/31/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.		Milligrams per L	11/1/2022	11/30/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.3		Milligrams per L	12/1/2022	12/31/2022
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	12.31		Milligrams per L	1/1/2023	01/31/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.55		Milligrams per L	2/1/2023	02/28/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.04		Milligrams per L	3/1/2023	03/31/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	10.5		Milligrams per L	4/1/2023	04/30/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.75		Milligrams per L	5/1/2023	05/31/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.02		Milligrams per L	6/1/2023	06/30/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	7.7		Milligrams per L	7/1/2023	07/31/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	7.6		Milligrams per L	8/1/2023	08/31/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.01		Milligrams per L	9/1/2023	09/30/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.9		Milligrams per L	10/1/2023	10/31/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	10.53		Milligrams per L	11/1/2023	11/30/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	10.89		Milligrams per L	12/1/2023	12/31/2023
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	11.35		Milligrams per L	1/1/2024	01/31/2024
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	9.61		Milligrams per L	2/1/2024	02/29/2024
Effluent Gross	00300	Oxygen, dissolved [DO]	Effluent Gr	MO AVG	8.		Milligrams per L	3/1/2024	03/31/2024

Limits.Monitoring Location Desc	Parameter Code	Parameter Desc	DMR Parameters.Monitoring Location Desc	Statistical Base Short Desc	DMR Value	Limit Value	Limit Unit Desc	Monitoring Period Start Date	Monitoring Period End Date
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	7.83		Milligrams per Liter	9/1/2018	09/30/2018
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	5.9		Milligrams per Liter	3/1/2019	03/31/2019
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	6.75		Milligrams per Liter	9/1/2019	09/30/2019
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	3.6		Milligrams per Liter	3/1/2020	03/31/2020
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	4.09		Milligrams per Liter	9/1/2020	09/30/2020
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	7.52		Milligrams per Liter	3/1/2021	03/31/2021
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	4.1		Milligrams per Liter	9/1/2021	09/30/2021
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	7.26		Milligrams per Liter	3/1/2022	03/31/2022
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	9.56		Milligrams per Liter	9/1/2022	09/30/2022
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	1.27		Milligrams per Liter	3/1/2023	03/31/2023
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX	8.4		Milligrams per Liter	9/1/2023	09/30/2023
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	DAILY MX			Milligrams per Liter	3/1/2024	03/31/2024
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	7.83		Milligrams per Liter	9/1/2018	09/30/2018
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	5.9		Milligrams per Liter	3/1/2019	03/31/2019
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	6.75		Milligrams per Liter	9/1/2019	09/30/2019
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	3.6		Milligrams per Liter	3/1/2020	03/31/2020
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	4.09		Milligrams per Liter	9/1/2020	09/30/2020
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	7.52		Milligrams per Liter	3/1/2021	03/31/2021
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	4.1		Milligrams per Liter	9/1/2021	09/30/2021
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	7.26		Milligrams per Liter	3/1/2022	03/31/2022
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	9.56		Milligrams per Liter	9/1/2022	09/30/2022
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	1.27		Milligrams per Liter	3/1/2023	03/31/2023
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG	8.4		Milligrams per Liter	9/1/2023	09/30/2023
Effluent Gr00665		Phosphorus, total [as P]	Effluent Gr00665	MO AVG			Milligrams per Liter	3/1/2024	03/31/2024

Limits Monitor	Parameter Col	Parameter Desc	UMH Param	Statistical Base	DMR Value	Limit Value	Limit Unit Des	Monitoring Period	Monitoring Period End Date	Violation Col			
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	22.9		Degrees Centigrade	3/1/2018	03/30/2018				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	19.2		Degrees Centigrade	10/1/2018	10/31/2018				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	14.3		Degrees Centigrade	11/1/2018	11/30/2018				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	10.9		Degrees Centigrade	12/1/2018	12/31/2018				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	12.8		Degrees Centigrade	1/1/2019	01/31/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	8.8		Degrees Centigrade	2/1/2019	02/28/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	7.6		Degrees Centigrade	3/1/2019	03/31/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	16.4		Degrees Centigrade	4/1/2019	04/30/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	20.3		Degrees Centigrade	5/1/2019	05/31/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	24.1		Degrees Centigrade	6/1/2019	06/30/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	25.1		Degrees Centigrade	7/1/2019	07/31/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	25.9		Degrees Centigrade	8/1/2019	08/31/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	24.3		Degrees Centigrade	9/1/2019	09/30/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	18.6		Degrees Centigrade	10/1/2019	10/31/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	8.9		Degrees Centigrade	11/1/2019	11/30/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	10.1		Degrees Centigrade	12/1/2019	12/31/2019				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	9.		Degrees Centigrade	1/1/2020	01/31/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	10.2		Degrees Centigrade	2/1/2020	02/29/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	12.2		Degrees Centigrade	3/1/2020	03/31/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	16.3		Degrees Centigrade	4/1/2020	04/30/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	21.3		Degrees Centigrade	5/1/2020	05/31/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	23.3		Degrees Centigrade	6/1/2020	06/30/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	26.		Degrees Centigrade	7/1/2020	07/31/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	26.9		Degrees Centigrade	8/1/2020	08/31/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	24.8		Degrees Centigrade	9/1/2020	09/30/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	19.7		Degrees Centigrade	10/1/2020	10/31/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	14.7		Degrees Centigrade	11/1/2020	11/30/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	9.5		Degrees Centigrade	12/1/2020	12/31/2020				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	16.5		Degrees Centigrade	1/1/2021	01/31/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	9.9		Degrees Centigrade	2/1/2021	02/28/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	12.2		Degrees Centigrade	3/1/2021	03/31/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	16.9		Degrees Centigrade	4/1/2021	04/30/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	19.6		Degrees Centigrade	5/1/2021	05/31/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	27.		Degrees Centigrade	6/1/2021	06/30/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	27.9		Degrees Centigrade	7/1/2021	07/31/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	27.8		Degrees Centigrade	8/1/2021	08/31/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	23.1		Degrees Centigrade	9/1/2021	09/30/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	19.8		Degrees Centigrade	10/1/2021	10/31/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	14.2		Degrees Centigrade	11/1/2021	11/30/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	11.9		Degrees Centigrade	12/1/2021	12/31/2021				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	8.2		Degrees Centigrade	1/1/2022	01/31/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	10.9		Degrees Centigrade	2/1/2022	02/28/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	13.5		Degrees Centigrade	3/1/2022	03/31/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	15.3		Degrees Centigrade	4/1/2022	04/30/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	19.4		Degrees Centigrade	5/1/2022	05/31/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	22.7		Degrees Centigrade	6/1/2022	06/30/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	27.2		Degrees Centigrade	7/1/2022	07/31/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	26.9		Degrees Centigrade	8/1/2022	08/31/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	24.6		Degrees Centigrade	9/1/2022	09/30/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	22.1		Degrees Centigrade	10/1/2022	10/31/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	15.2		Degrees Centigrade	11/1/2022	11/30/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	9.		Degrees Centigrade	12/1/2022	12/31/2022				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	9.		Degrees Centigrade	1/1/2023	01/31/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	11.2		Degrees Centigrade	2/1/2023	02/28/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	12.6		Degrees Centigrade	3/1/2023	03/31/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	13.7		Degrees Centigrade	4/1/2023	04/30/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	22.5		Degrees Centigrade	5/1/2023	05/31/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	23.7		Degrees Centigrade	6/1/2023	06/30/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	26.2		Degrees Centigrade	7/1/2023	07/31/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	25.9		Degrees Centigrade	8/1/2023	08/31/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	24.6		Degrees Centigrade	9/1/2023	09/30/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	19.3		Degrees Centigrade	10/1/2023	10/31/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	14.5		Degrees Centigrade	11/1/2023	11/30/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	11.7		Degrees Centigrade	12/1/2023	12/31/2023				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	11.2		Degrees Centigrade	1/1/2024	01/31/2024				
Effluent Gr. 00010		Temperature, water c Effluent Gr.		DAILY MX	12.3		Degrees Centigrade	2/1/2024	02/29/2024				

Limits Monitor	Parameter Code	Parameter Description	UMH Parameter	Statistical Base	DMR Value	Limit Value	Limit Unit Description	Monitoring Period	Monitoring Period End Date
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	21.2		Degrees Centigrade	9/1/2018	09/30/2018
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	17.2		Degrees Centigrade	10/1/2018	10/31/2018
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	11.9		Degrees Centigrade	11/1/2018	11/30/2018
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	9.5		Degrees Centigrade	12/1/2018	12/31/2018
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	8.8		Degrees Centigrade	1/1/2019	01/31/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	7.1		Degrees Centigrade	2/1/2019	02/28/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	6.9		Degrees Centigrade	3/1/2019	03/31/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	14.7		Degrees Centigrade	4/1/2019	04/30/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	19.3		Degrees Centigrade	5/1/2019	05/31/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	23.4		Degrees Centigrade	6/1/2019	06/30/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	24.5		Degrees Centigrade	7/1/2019	07/31/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	24.6		Degrees Centigrade	8/1/2019	08/31/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	22.5		Degrees Centigrade	9/1/2019	09/30/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	16.4		Degrees Centigrade	10/1/2019	10/31/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	8.7		Degrees Centigrade	11/1/2019	11/30/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	9.4		Degrees Centigrade	12/1/2019	12/31/2019
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	8.5		Degrees Centigrade	1/1/2020	01/31/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	9.8		Degrees Centigrade	2/1/2020	02/29/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	11.1		Degrees Centigrade	3/1/2020	03/31/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	15.3		Degrees Centigrade	4/1/2020	04/30/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	18.5		Degrees Centigrade	5/1/2020	05/31/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	21.6		Degrees Centigrade	6/1/2020	06/30/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	23.8		Degrees Centigrade	7/1/2020	07/31/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	25.8		Degrees Centigrade	8/1/2020	08/31/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	22.5		Degrees Centigrade	9/1/2020	09/30/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	17.2		Degrees Centigrade	10/1/2020	10/31/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	11.9		Degrees Centigrade	11/1/2020	11/30/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	8.5		Degrees Centigrade	12/1/2020	12/31/2020
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	10.6		Degrees Centigrade	1/1/2021	01/31/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	8.6		Degrees Centigrade	2/1/2021	02/28/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	10.6		Degrees Centigrade	3/1/2021	03/31/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	14.4		Degrees Centigrade	4/1/2021	04/30/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	18.8		Degrees Centigrade	5/1/2021	05/31/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	21.		Degrees Centigrade	6/1/2021	06/30/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	26.8		Degrees Centigrade	7/1/2021	07/31/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	23.1		Degrees Centigrade	8/1/2021	08/31/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	21.9		Degrees Centigrade	9/1/2021	09/30/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	16.8		Degrees Centigrade	10/1/2021	10/31/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	12.6		Degrees Centigrade	11/1/2021	11/30/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	10.1		Degrees Centigrade	12/1/2021	12/31/2021
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	6.9		Degrees Centigrade	1/1/2022	01/31/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	7.04		Degrees Centigrade	2/1/2022	02/28/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	11.2		Degrees Centigrade	3/1/2022	03/31/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	14.2		Degrees Centigrade	4/1/2022	04/30/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	17.7		Degrees Centigrade	5/1/2022	05/31/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	20.8		Degrees Centigrade	6/1/2022	06/30/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	24.9		Degrees Centigrade	7/1/2022	07/31/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	26.3		Degrees Centigrade	8/1/2022	08/31/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	22.7		Degrees Centigrade	9/1/2022	09/30/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	19.3		Degrees Centigrade	10/1/2022	10/31/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	11.2		Degrees Centigrade	11/1/2022	11/30/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	7.4		Degrees Centigrade	12/1/2022	12/31/2022
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	7.5		Degrees Centigrade	1/1/2023	01/31/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	9.3		Degrees Centigrade	2/1/2023	02/28/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	10.3		Degrees Centigrade	3/1/2023	03/31/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	12.2		Degrees Centigrade	4/1/2023	04/30/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	19.2		Degrees Centigrade	5/1/2023	05/31/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	22.9		Degrees Centigrade	6/1/2023	06/30/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	25.6		Degrees Centigrade	7/1/2023	07/31/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	25.6		Degrees Centigrade	8/1/2023	08/31/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	22.2		Degrees Centigrade	9/1/2023	09/30/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	16.9		Degrees Centigrade	10/1/2023	10/31/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	11.9		Degrees Centigrade	11/1/2023	11/30/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	10.4		Degrees Centigrade	12/1/2023	12/31/2023
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	8.4		Degrees Centigrade	1/1/2024	01/31/2024
Effluent Gr	00010	Temperature, water c	Effluent Gr	MO AVG	10.1		Degrees Centigrade	2/1/2024	02/29/2024

Receiving Water Data

Parameter	Result	Unit	Upstream/Downstream	Date
TP	ND	mg/L	Downstream	4/25/2018
TP	0.18	mg/L	Downstream	10/8/2018
TP	ND	mg/L	Downstream	5/3/2019
TP	0.2	mg/L	Downstream	10/18/2019
TP	ND	mg/L	Downstream	5/8/2020
TP	0.09	mg/L	Downstream	10/26/2020
TP	ND	mg/L	Downstream	4/26/2021
TP	0.13	mg/L	Downstream	10/22/2021
TP	ND	mg/L	Downstream	4/13/2022
TP	0.1	mg/L	Downstream	10/25/2022
TP	0.099	mg/L	Downstream	4/24/2024
TP	ND	mg/L	Upstream	4/25/2018
TP	ND	mg/L	Upstream	10/8/2018
TP	ND	mg/L	Upstream	5/3/2019
TP	ND	mg/L	Upstream	10/18/2019
TP	ND	mg/L	Upstream	5/8/2020
TP	ND	mg/L	Upstream	10/26/2020
TP	ND	mg/L	Upstream	4/26/2021
TP	ND	mg/L	Upstream	4/28/2022
TP	ND	mg/L	Upstream	10/25/2022
TP	0.073	mg/L	Upstream	4/24/2024

ND = non-detect. Detection limit is <0.07 mg/L

Parameter	Result	Unit	Upstream/Downstream	Date
TKN	0.3	mg/L	Downstream	4/25/2018
TKN	0.4	mg/L	Downstream	10/8/2018
TKN	0.3	mg/L	Downstream	5/3/2019
TKN	0.4	mg/L	Downstream	10/18/2019
TKN	0.3	mg/L	Downstream	5/8/2020
TKN	0.3	mg/L	Downstream	10/26/2020
TKN	0.6	mg/L	Downstream	4/26/2021
TKN	0.6	mg/L	Downstream	10/22/2021
TKN	0.31	mg/L	Downstream	4/13/2022
TKN	0.392	mg/L	Downstream	10/25/2022
TKN	0.328	mg/L	Downstream	4/24/2024
TKN	0.3	mg/L	Upstream	4/25/2018
TKN	0.3	mg/L	Upstream	10/8/2018
TKN	0.3	mg/L	Upstream	5/3/2019
TKN	0.3	mg/L	Upstream	10/18/2019
TKN	0.3	mg/L	Upstream	5/8/2020
TKN	0.4	mg/L	Upstream	10/26/2020
TKN	0.4	mg/L	Upstream	4/26/2021
TKN	0.42	mg/L	Upstream	4/28/2022
TKN	0.56	mg/L	Upstream	10/25/2022
TKN	0.282	mg/L	Upstream	4/24/2024

Parameter	Result	Unit	Upstream/Downstream	Date
Nitrate-N	0.2	mg/L	Downstream	4/25/2018
Nitrate-N	3.92	mg/L	Downstream	10/8/2018
Nitrate-N	0.19	mg/L	Downstream	5/3/2019
Nitrate-N	4.68	mg/L	Downstream	10/18/2019
Nitrate-N	0.19	mg/L	Downstream	5/8/2020
Nitrate-N	2.12	mg/L	Downstream	10/26/2020
Nitrate-N	0.22	mg/L	Downstream	4/26/2021
Nitrate-N	1.3	mg/L	Downstream	10/22/2021
Nitrate-N	0.14	mg/L	Downstream	4/13/2022
Nitrate-N	1	mg/L	Downstream	10/25/2022
Nitrate-N	0.163	mg/L	Downstream	4/24/2024
Nitrate-N	0.16	mg/L	Upstream	4/25/2018
Nitrate-N	3.5	mg/L	Upstream	10/8/2018
Nitrate-N	0.17	mg/L	Upstream	5/3/2019
Nitrate-N	3.85	mg/L	Upstream	10/18/2019
Nitrate-N	0.17	mg/L	Upstream	5/8/2020
Nitrate-N	1.73	mg/L	Upstream	10/26/2020
Nitrate-N	0.92	mg/L	Upstream	4/26/2021
Nitrate-N	0.11	mg/L	Upstream	4/28/2022
Nitrate-N	0.776	mg/L	Upstream	10/25/2022
Nitrate-N	0.135	mg/L	Upstream	4/24/2024

Parameter	Result	Unit	Upstream/Downstream	Date
Nitrite-N	ND	mg/L	Downstream	4/25/2018
Nitrite-N	ND	mg/L	Downstream	10/8/2018
Nitrite-N	ND	mg/L	Downstream	5/3/2019
Nitrite-N	ND	mg/L	Downstream	10/18/2019
Nitrite-N	ND	mg/L	Downstream	5/8/2020
Nitrite-N	ND	mg/L	Downstream	10/26/2020
Nitrite-N	ND	mg/L	Downstream	4/26/2021
Nitrite-N	ND	mg/L	Downstream	10/22/2021
Nitrite-N	ND	mg/L	Downstream	4/13/2022
Nitrite-N	ND	mg/L	Downstream	10/25/2022
Nitrite-N	ND	mg/L	Downstream	4/24/2024
Nitrite-N	0.07	mg/L	Upstream	4/25/2018
Nitrite-N	ND	mg/L	Upstream	10/8/2018
Nitrite-N	ND	mg/L	Upstream	5/3/2019
Nitrite-N	ND	mg/L	Upstream	10/18/2019
Nitrite-N	ND	mg/L	Upstream	5/8/2020
Nitrite-N	ND	mg/L	Upstream	10/26/2020
Nitrite-N	ND	mg/L	Upstream	4/26/2021
Nitrite-N	ND	mg/L	Upstream	4/28/2022
Nitrite-N	ND	mg/L	Upstream	10/25/2022
Nitrite-N	ND	mg/L	Upstream	4/24/2024

ND = non-detect. Detection limit is <0.07 mg/L

Paramet	Resul	Unit	Upstream/Downstream	Date
Ammonia	0.14	mg/L	Downstream	4/25/2018
Ammonia	ND	mg/L	Downstream	10/8/2018
Ammonia	ND	mg/L	Downstream	5/3/2019
Ammonia	ND	mg/L	Downstream	10/18/2019
Ammonia	ND	mg/L	Downstream	5/8/2020
Ammonia	ND	mg/L	Downstream	10/26/2020
Ammonia	ND	mg/L	Downstream	4/26/2021
Ammonia	ND	mg/L	Downstream	10/22/2021
Ammonia	ND	mg/L	Downstream	4/13/2022
Ammonia	ND	mg/L	Downstream	10/25/2022
Ammonia	ND	mg/L	Downstream	4/24/2024
Ammonia	0.09	mg/L	Upstream	4/25/2018
Ammonia	ND	mg/L	Upstream	10/8/2018
Ammonia	ND	mg/L	Upstream	5/3/2019
Ammonia	ND	mg/L	Upstream	10/18/2019
Ammonia	ND	mg/L	Upstream	5/8/2020
Ammonia	ND	mg/L	Upstream	10/26/2020
Ammonia	ND	mg/L	Upstream	4/26/2021
Ammonia	ND	mg/L	Upstream	4/28/2022
Ammonia	ND	mg/L	Upstream	10/25/2022
Ammonia	ND	mg/L	Upstream	4/24/2024

ND = non-detect. Detection limit is <0.07 mg/L

Paramet	Resul	Unit	Upstream/Downstream	Date
DO	9.22	mg/L	Downstream	4/25/2018
DO	8.81	mg/L	Downstream	10/8/2018
DO	10.84	mg/L	Downstream	5/3/2019
DO	9.36	mg/L	Downstream	10/18/2019
DO	11.08	mg/L	Downstream	5/8/2020
DO	8.53	mg/L	Downstream	10/26/2020
DO	11.7	mg/L	Downstream	10/22/2021
DO	12.58	mg/L	Downstream	4/28/2022
DO	12.32	mg/L	Downstream	10/25/2022
DO	11.97	mg/L	Downstream	4/24/2024
DO	9.14	mg/L	Upstream	4/25/2018
DO	8.58	mg/L	Upstream	10/8/2018
DO	10.67	mg/L	Upstream	5/3/2019
DO	9.12	mg/L	Upstream	10/18/2019
DO	10.49	mg/L	Upstream	5/8/2020
DO	8.22	mg/L	Upstream	10/26/2020
DO	11.2	mg/L	Upstream	10/22/2021
DO	12.64	mg/L	Upstream	4/28/2022
DO	12.75	mg/L	Upstream	10/25/2022
DO	11.14	mg/L	Upstream	4/24/2024

Parameter	Result	Unit	Upstream/Downstream	Date
Flow	70	CFS	Upstream	4/25/2018
Flow	15	CFS	Upstream	10/8/2018
Flow	19	CFS	Upstream	10/18/2019
Flow	80	CFS	Upstream	5/3/2019
Flow	85	CFS	Upstream	5/8/2020
Flow	15	CFS	Upstream	10/26/2020
Flow	10	CFS	Upstream	10/22/2021
Flow	85	CFS	Upstream	4/28/2022
Flow	11	CFS	Upstream	10/25/2022
Flow	50	CFS	Upstream	4/24/2024

Parameter	Result	Unit	Upstream/Downstream	Date
pH	6.67	SU	Upstream	10/18/2019
pH	6.83	SU	Downstream	10/18/2019
pH	7.9	SU	Town of Harrah Upstream	4/11/2007
pH	7.6	SU	Town of Harrah Upstream	10/2/2007
pH	7.8	SU	Town of Harrah Upstream	4/22/2008
pH	7.94	SU	Town of Harrah Upstream	10/10/2008
pH	8.08	SU	Town of Harrah Upstream	4/15/2009
pH	7.6	SU	Town of Harrah Upstream	10/13/2009
pH	7.8	SU	Town of Harrah Upstream	6/17/2010
pH	7.5	SU	Town of Harrah Upstream	10/6/2010
pH	7.9	SU	Town of Harrah Downstream	4/11/2007
pH	7.6	SU	Town of Harrah Downstream	10/2/2007
pH	7.8	SU	Town of Harrah Downstream	4/22/2008
pH	7.95	SU	Town of Harrah Downstream	10/10/2008
pH	8.04	SU	Town of Harrah Downstream	4/15/2009
pH	7.6	SU	Town of Harrah Downstream	10/13/2009
pH	7.8	SU	Town of Harrah Downstream	6/17/2010
pH	7.5	SU	Town of Harrah Downstream	10/6/2010
pH	7.4	SU	USGS 12505466 HARRAH DRAIN AT HARRAH DRA	7/18/1987
pH	7.9	SU	USGS 12505466 HARRAH DRAIN AT HARRAH DRA	11/3/1987
pH	9.2	SU	USGS 12505466 HARRAH DRAIN AT HARRAH DRA	3/9/1988
pH	7.9	SU	USGS 12505466 HARRAH DRAIN AT HARRAH DRA	10/26/1989
pH	7.9	SU	USGS 462112120335001 HARRAH DRAIN NR MARIE	10/25/1989
pH	7.9	SU	USGS 462230120335001 HARRAH DRAIN AT FORT	10/25/1989

Parameter	Result	Unit	Upstream/Downstream	Date
Alkalinity	87.2	mg/L	Upstream	10/18/2019
Alkalinity	88.6	mg/L	Downstream	10/18/2019

Parameter	Result	Unit	Upstream/Downstream	Date
Bicarbonate	87.2	mg/L	Upstream	10/18/2019
Bicarbonate	88.6	mg/L	Downstream	10/18/2019

Parameter	Result	Unit	Upstream/Downstream	Date
Carbonate	ND	mg/L	Upstream	10/18/2019
Carbonate	ND	mg/L	Downstream	10/18/2019

Parameter	Result	Unit	Upstream/Downstream	Date
Temperature	11.1	C	Downstream	4/25/2018
Temperature	14.5	C	Downstream	10/8/2018
Temperature	13.2	C	Downstream	5/3/2019
Temperature	12.7	C	Downstream	10/18/2019
Temperature	13.3	C	Downstream	5/8/2020
Temperature	14	C	Downstream	10/26/2020
Temperature	14.9	C	Downstream	10/22/2021
Temperature	12.64	C	Downstream	4/28/2022
Temperature	18.8	C	Downstream	10/25/2022
Temperature	14.7	C	Downstream	4/24/2024
Temperature	10.7	C	Upstream	4/25/2018
Temperature	14.1	C	Upstream	10/8/2018
Temperature	13.8	C	Upstream	5/3/2019
Temperature	13.7	C	Upstream	10/18/2019
Temperature	14.6	C	Upstream	5/8/2020
Temperature	14.8	C	Upstream	10/26/2020
Temperature	15.6	C	Upstream	10/22/2021
Temperature	7.7	C	Upstream	4/28/2022
Temperature	17.7	C	Upstream	10/25/2022
Temperature	14.5	C	Upstream	4/24/2024

Parameter	Result	Unit	Upstream/Downstream	Date
TN	0.5	mg/L	Downstream	4/25/2018
TN	4.32	mg/L	Downstream	10/8/2018
TN	0.49	mg/L	Downstream	5/3/2019
TN	5.08	mg/L	Downstream	10/18/2019
TN	0.49	mg/L	Downstream	5/8/2020
TN	2.42	mg/L	Downstream	10/26/2020
TN	0.82	mg/L	Downstream	4/26/2021
TN	1.9	mg/L	Downstream	10/22/2021
TN	ND	mg/L	Downstream	4/13/2022
TN	1.39	mg/L	Downstream	10/25/2022
TN	ND	mg/L	Downstream	4/24/2024
TN	0.16	mg/L	Upstream	4/25/2018
TN	3	mg/L	Upstream	10/8/2018
TN	0.47	mg/L	Upstream	5/3/2019
TN	4.15	mg/L	Upstream	10/18/2019
TN	0.47	mg/L	Upstream	5/8/2020
TN	2.13	mg/L	Upstream	10/26/2020
TN	1.32	mg/L	Upstream	4/26/2021
TN	ND	mg/L	Upstream	4/28/2022
TN	1.34	mg/L	Upstream	10/25/2022
TN	ND	mg/L	Upstream	4/24/2024

Appendix C. Reasonable Potential and WQBEL Formulae

A. Reasonable Potential Analysis

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

1. Mass Balance

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

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

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:

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

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:

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

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,

$$C_d = C_e$$

Equation 4

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

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

Equation 5

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

$$C_d = \frac{C_e - C_u}{D} + C_u$$

Equation 6

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

2. Maximum Projected Effluent Concentration

When determining the projected receiving water concentration downstream of the effluent discharge, the EPA's Technical Support Document for Water Quality-based Toxics Control (TSD, 1991) recommends using the maximum projected effluent concentration (C_e) in the mass balance calculation (see equation 3, page C-5). To determine the maximum projected effluent concentration (C_e) 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 (C_e) can be calculated using the following equations:

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

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

Equation 8

where,

p_n = the percentile represented by the highest reported concentration

n = the number of samples

confidence level = 99% = 0.99

and

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

Where,

$$\begin{aligned}
 \sigma^2 &= \ln(CV^2 + 1) \\
 Z_{99} &= 2.326 \text{ (z-score for the 99th percentile)} \\
 Z_{P_n} &= \text{z-score for the } P_n \text{ percentile (inverse of the normal cumulative distribution function at a given percentile)} \\
 CV &= \text{coefficient of variation (standard deviation } \div \text{ mean)}
 \end{aligned}$$

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

$$C_e = (RPM)(MRC) \quad Equation\ 10$$

where MRC = Maximum Reported Concentration

3. Maximum Projected Effluent Concentration at the Edge of the Mixing Zone

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

4. Reasonable Potential

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

B. WQBEL Calculations

1. Calculate the Wasteload Allocations (WLAs)

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

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

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 EPA’s *Technical Support Document for Water Quality-based Toxics Control* (TSD):

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

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

Equation 14

where,

$$\sigma^2 = \ln(CV^2 + 1)$$

$$Z_{99} = 2.326 \text{ (z-score for the 99th percentile probability basis)}$$

$$CV = \text{coefficient of variation (standard deviation} \div \text{mean)}$$

$$\sigma_4^2 = \ln(CV^2/4 + 1)$$

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

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

Equation 15

where,

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

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

2. Derive the maximum daily and average monthly effluent limits

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

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

Equation 16

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

Equation 17

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

$$\sigma_n^2 = \ln(CV^2/n + 1)$$

$$z_a = 1.645 \text{ (z-score for the 95th percentile probability basis)}$$

$$z_m = 2.326 \text{ (z-score for the 99th percentile probability basis)}$$

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

Appendix D. Reasonable Potential and WQBEL Calculations

The reasonable potential analyses for seasonal ammonia limits (December – February and March – November).

Pollutant, CAS No. & NPDES Application Ref. No.		Dec - Feb	Mar - Nov
		AMMONIA, Criteria as Total NH3	AMMONIA, Criteria as Total NH3
<u>Effluent Data</u>	# of Samples (n)	18	48
	Coeff of Variation (Cv)	1.16	1.06
	Effluent Concentration, ug/L (Max. or 95th Percentile)	4,130	740
	Calculated 50th percentile Effluent Conc. (when n>10)		
<u>Receiving Water Data</u>	90th Percentile Conc., ug/L	90	90
	Geo Mean, ug/L		
<u>Water Quality Criteria</u>	Aquatic Life Criteria, ug/L	10,486	10,486
	Acute	1,759	1,759
	Chronic		
	WQ Criteria for Protection of Human Health, ug/L	-	
	Metal Criteria	-	
	Translator, decimal	-	
Carcinogen?		N	N
Aquatic Life Reasonable Potential			
Effluent percentile value		0.950	0.950
s $s^2=\ln(CV^2+1)$		0.923	0.868
Pn $Pn=(1-\text{confidence level})^{1/n}$		0.847	0.939
Multiplier		1.78	1.09
Max concentration (ug/L) at edge of...		7,338	271
Acute		7,338	113
Chronic			
Reasonable Potential? Limit Required?		YES	NO
Aquatic Life Limit Calculation			
# of Compliance Samples Expected per month		1	
LTA Coeff. Var. (CV), decimal		1.16	
Permit Limit Coeff. Var. (CV), decimal		1.16	
Waste Load Allocations, ug/L		10485.8	
Acute		1758.63	
Chronic			
Long Term Averages, ug/L		1875.03	
Acute		580.99	
Chronic			
Limiting LTA, ug/L		580.99	
Metal Translator or 1?		1.00	
Average Monthly Limit (AML), ug/L		1732.5	
Maximum Daily Limit (MDL), ug/L		3249.1	

Figure 5. The reasonable potential analysis for temperature.

	Core Summer Criteria	Supplemental Criteria
INPUT	July 1-Sept 14	Sept 15-July 1
1. Chronic Dilution Factor at Mixing Zone Boundary	48.5	48.5
2. 7DADMax Ambient Temperature (T) (Upstream Background 90th percentile)	15.8 °C	15.8 °C
3. 7DADMax Effluent Temperature (95th percentile)	27.8 °C	23.5 °C
4. Aquatic Life Temperature WQ Criterion in Fresh Water	17.5 °C	17.5 °C
OUTPUT		
5. Temperature at Chronic Mixing Zone Boundary:	16.0 °C	16.0 °C
6. Incremental Temperature Increase or decrease:	0.2 °C	0.2 °C
7. Maximum Allowable Incremental Temperature Increase:	1.2 °C	1.2 °C
8. Maximum Allowable Temperature at Mixing Zone Boundary:	17.0 °C	17.0 °C
A. If ambient temp is warmer than WQ criterion		
9. Does temp fall within this warmer temp range?	NO	NO
10. If YES - Use TMDL-based or performance-based limit - Do Not use this spreadsheet		
B. If ambient temp is cooler than WQ criterion but within $28/(T_{amb}+7)$ of the criterion		
11. Does temp fall within this Incremental temp. range?	NO	NO
12. Temp increase allowed at mixing zone boundary, if required:	---	---
C. If ambient temp is cooler than $(WQ \text{ criterion} - 28/(T_{amb}+7))$		
13. Does temp fall within this Incremental temp. range?	YES	YES
14. Temp increase allowed at mixing zone boundary, if required:	NO LIMIT	NO LIMIT
RESULTS		
15. Do any of the above cells show a temp increase?	NO	NO
16. Temperature Limit if Required?	NO LIMIT	NO LIMIT

Figure 6. The reasonable potential analysis for the maximum pH effluent limit

INPUT		
	@ Acute Boundary	@ Chronic Boundary
1. Dilution Factor at Mixing Zone Boundary	3.9	30.4
2. Ambient/Upstream/Background Conditions		
Temperature (deg C):	15.81	15.81
pH:	7.97	7.97
Alkalinity (mg CaCO ₃ /L):	87.20	87.20
3. Effluent Characteristics		
Temperature (deg C):	26.98	26.98
pH:	8.50	8.50
Alkalinity (mg CaCO ₃ /L):	174.80	174.80
4. Aquatic Life Use Designation	Other species (salmonid/redband trout/warmwater species)	
OUTPUT		
1. Ionization Constants		
Upstream/Background pKa:	6.41	6.41
Effluent pKa:	6.34	6.34
2. Ionization Fractions		
Upstream/Background Ionization Fraction:	0.97	0.97
Effluent Ionization Fraction:	0.99	0.99
3. Total Inorganic Carbon		
Upstream/Background Total Inorganic Carbon (mg CaCO ₃ /L):	90	90
Effluent Total Inorganic Carbon (mg CaCO ₃ /L):	176	176
4. Conditions at Mixing Zone Boundary		
Temperature (deg C):	18.65	16.18
Alkalinity (mg CaCO ₃ /L):	109.43	90.08
Total Inorganic Carbon (mg CaCO ₃ /L):	111.55	92.46
pKa:	6.39	6.41
5. Allowable pH change	NA	0.50
RESULTS		
pH at Mixing Zone Boundary:	8.11	7.99
pH change at Mixing Zone Boundary:	0.14	0.02
Is permit limit needed?	NO	NO

Figure 7. The reasonable potential calculation for the minimum pH effluent limit

INPUT		
	@ Acute Boundary	@ Chronic Boundary
1. Dilution Factor at Mixing Zone Boundary	3.9	30.4
2. Ambient/Upstream/Background Conditions		
Temperature (deg C):	15.81	15.81
pH:	7.97	7.97
Alkalinity (mg CaCO ₃ /L):	87.20	87.20
3. Effluent Characteristics		
Temperature (deg C):	26.98	26.98
pH:	6.50	6.50
Alkalinity (mg CaCO ₃ /L):	174.80	174.80
4. Aquatic Life Use Designation	Other species (salmonid/redband trout/warmwater species)	
OUTPUT		
1. Ionization Constants		
Upstream/Background pKa:	6.41	6.41
Effluent pKa:	6.34	6.34
2. Ionization Fractions		
Upstream/Background Ionization Fraction:	0.97	0.97
Effluent Ionization Fraction:	0.59	0.59
3. Total Inorganic Carbon		
Upstream/Background Total Inorganic Carbon (mg CaCO ₃ /L):	90	90
Effluent Total Inorganic Carbon (mg CaCO ₃ /L):	295	295
4. Conditions at Mixing Zone Boundary		
Temperature (deg C):	18.65	16.18
Alkalinity (mg CaCO ₃ /L):	109.43	90.08
Total Inorganic Carbon (mg CaCO ₃ /L):	141.86	96.40
pKa:	6.39	6.41
5. Allowable pH change	NA	0.50
RESULTS		
pH at Mixing Zone Boundary:	6.92	7.56
pH change at Mixing Zone Boundary:	1.05	0.41
Is permit limit needed?	NO	NO

Appendix E. Essential Fish Habitat Assessment

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

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

A. Listing of EFH Species in the Facility Area

According to NOAA Fisheries' EFH Mapper, the Lower Yakima basin is EFH for Chinook and coho salmon.

B. Description of the Facility and Discharge Location

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

C. The EPA's Evaluation of Potential Effects to EFH

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

1. Effluent Characterization

Characterization of Harrah's effluent was accomplished using a variety of sources, including:

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

2. Identification of Pollutants of Concern and Threshold Concentrations

The pollutants of concern include pollutants with aquatic life criteria in the Washington WQS. Threshold concentrations are equal to the numeric water quality criteria for the protection of aquatic life. No other pollutants of concern were identified by NMFS.

3. Exposure and Wasteload Allocation

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

- Mixing zone policies in the Washington WQS
- Dilution modeling and analysis

- Exposure considerations (e.g., prevention of lethality to passing organisms)
- Consideration of multiple sources and background concentrations

4. Statistical Evaluation for Permit Limit Development

Calculation of permit limits using statistical procedures addressing the following:

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

5. Monitoring Programs

Development of monitoring requirements, including:

- Compliance monitoring of the effluent
- Ambient monitoring

6. Protection of Aquatic Life in NPDES Permitting

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

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

7. Effects Determination

Since the proposed permit has been developed to protect aquatic life species in the receiving water in accordance with the Washington WQS, the EPA has determined that issuance of this permit is not likely to adversely affect any EFH in the vicinity of the discharge. The EPA will provide NMFS with copies of the draft permit and fact sheet during the public notice period. Any recommendations received from NMFS regarding EFH will be considered prior to reissuance of this permit.

Appendix F. Antidegradation Analysis

The purpose of Washington's Antidegradation Policy is to:

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

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

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

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

Apply three tiers of protection (described below) for surface waters of the state.

Tier I is used to ensure existing and designated uses are maintained and protected and applies to all waters and all sources of pollution.

Tier II is used to ensure that waters of a higher quality than the criteria assigned in this chapter are not degraded unless such lowering of water quality is necessary and in the overriding public interest. Tier II applies only to a specific list of polluting activities.

Tier III is used to prevent the degradation of waters formally listed in this chapter as "outstanding resource waters," and applies to all sources of pollution.

The EPA utilized Washington's WQS downstream from the discharge in Harrah Drain to establish discharge limits in the permit and accordingly, the antidegradation analysis was completed for the Yakima River downstream of the discharge. The discharge proposed in this permit should not cause a loss of beneficial uses because there have not been any changes in the process of the existing facility, and there is no change in the design flow. Therefore, the EPA concludes that the discharge does not trigger the need for any further antidegradation analysis beyond Tier I Protection.

Tier I Protection – Protection and maintenance of existing and designated uses

According to Washington's antidegradation policy, WAC 172-210A-310, this facility must meet Tier I requirements. Existing and designated uses must be maintained and protected. No degradation may be allowed that would interfere with, or become injurious to, existing

or designated uses, except as provided for in WAC 173-201A612. The waters of Harrah Drain in Washington downstream of the point of discharge are protected for the following designated beneficial uses:

- Aquatic Life Uses: Salmonoid Spawning, Rearing, and Migration Wildlife Habitat;
- Recreational Uses: Primary Contact
- Water Supply Uses: Domestic Water; Industrial Water; Agricultural Water; Stock Water
- Aesthetic Values.

The effluent limits in the permit ensure compliance with applicable numeric and narrative water quality criteria. The numeric and narrative water quality criteria are set at levels that ensure protection of the designated uses. As there is no information indicating the presence of existing beneficial uses other than those that are designated, the draft permit ensures a level of water quality necessary to protect the designated uses and, in compliance with WAC 173-201A-310 and 40 CFR § 131.12(a)(1), also ensures that the level of water quality necessary to protect existing uses is maintained and protected. If the EPA receives information during the public comment period demonstrating that there are existing uses for which Harrah Drain is not designated, the EPA will consider this information before issuing a final permit and will establish additional or more stringent permit conditions if necessary to ensure protection of existing uses.

Tier II Protection – Protection of waters of higher quality than the standards

The EPA determined that analysis for a Tier II Protection is not necessary because the facility is not a new or expanded action that has the potential to cause measurable degradation to existing water quality. According to WAC 173-210A-320(2), a facility must prepare a Tier II analysis when the facility is planning a new or expanded action that has the potential to cause measurable degradation to the physical, chemical, or biological quality of the water body.

Tier III Protection – Protection of Outstanding Resource Waters

The EPA determined that a Tier III antidegradation analysis is not necessary because the receiving water does not meet the conditions as an Outstanding Resource Water pertaining to WAC 173-201A-330(1).

Appendix G. CWA § 401 Certification

Below is the EPA's draft CWA § 401 Certification. The EPA is taking comment on the EPA's intent to certify this permit as described in Section VI.C.

Clean Water Act (CWA) Section 401 Certification for Discharger Located within Tribal Boundaries

Facility: Town of Harrah Wastewater Treatment Plant

NPDES Permit Number: WA0022705

Location: Harrah, Washington

Receiving Water: Harrah Drain

Facility Location: 8761 Branch Road, Harrah, WA 98933

The EPA hereby certifies that the conditions in the National Pollutant Discharge Elimination System (NPDES) permit for the Town of Harrah Wastewater Treatment Plant, are necessary to assure compliance with the applicable provisions of Sections 301, 302, 303, 306, and 307 of the CWA. See CWA Section 401(a)(1), 33 U.S.C. 1341(a)(1); 40 CFR § 124.53(e).

The State in which the discharge originates is responsible for issuing the CWA Section 401 certification pursuant to CWA Section 401(a)(1). When a NPDES permit is issued on Tribal Land, the Tribe is the certifying authority where the Tribe has been approved by the EPA for Treatment as a State (TAS) pursuant to CWA Section 518(e) and 40 CFR § 131.8. Where a Tribe does not have TAS, the EPA is the certifying authority. The Yakama Nation does not have TAS for the reservation. Therefore, the EPA is responsible for issuing the CWA Section 401 Certification for this permit.

Susan Poulson
Acting Branch Manager
Permits, Drinking Water, and Infrastructure