



Water Quality Division

Montana Pollutant Discharge Elimination System (MPDES) ▪ Fact Sheet

Permit Number:	MT0020052
Permittee:	Choteau Water Resource Recovery Facility (WRRF)
Receiving Water:	Unnamed drainage ditch to the Teton River
Facility Information:	38 First Ave NW Choteau, MT 59422
Facility Contact:	Kelly Hirsch, Water and Sewer Superintendent 38 First Ave NW Choteau, MT 59422
Type of Facility:	Minor Publicly Owned Treatment Works
Type of Treatment:	Primary and Secondary Treatment with Oxidation
Number of Outfalls:	1
Outfall Name:	Outfall 001
Outfall Location:	47.795173 N, 112.178294 W
Fact Sheet Date:	November 2020

I. Summary of Proposed Changes

Montana Department of Environmental Quality (DEQ) proposes to renew the Montana Pollutant Discharge Elimination System (MPDES) permit for the City of Choteau Water Resource Recovery Facility (WRRF), MT0020052. This fact sheet documents the legal requirements and technical rationale that serve the decision-making process involved with developing effluent limits, monitoring and reporting requirements, and special conditions which are specific to Choteau's WRRF.

DEQ has made the following changes in this draft permit: The Total Suspended Solids (TSS) limits will be more stringent. Choteau will be required to monitor semi-annually for oil and grease. Monthly monitoring of nitrate + nitrite will be required. Choteau will also have to conduct monthly in-stream sampling.

II. Facility Information

A. Permit Status

The permit was administratively extended in 2015.

- December 1, 2010 2010-issued permit became effective
- October 1, 2015 Renewal application received
- October 21, 2015 2010-issued permit administratively extended
- November 30, 2015 2010-issued permit expired

B. Facility Description

The Choteau Water Resource Recovery Facility (WRRF) is a minor, publicly-owned treatment works. The WRRF serves 1,800 citizens and local businesses in Choteau. The WRRF has an average daily design flow of 0.48 million gallons per day (mgd).

There are 15 miles of gravity fed and 1,900 feet of forced main lines leading to the WRRF. The influent is combined at the lift station and screened in the headworks building. The extended aeration system consists of an oxidation ditch with rotating brush aerators, two clarifiers, and disinfection by ultraviolet light. Choteau WRRF discharges continuously. After passing through the UV system, the effluent travels through a Parshall flume and enters the unnamed drainage ditch, 47.795173, -112.178294. This ditch discharges to the Teton River, 0.3 miles downstream.

Choteau has a problematic history with inflow and infiltration (I/I), but they have worked consistently to solve the problem. Since 2004 the town has replaced 17,000 ft. main lines and 20 manholes. In 2010 Choteau also replaced 90 sewer service connections. In the fall of 2019 Choteau removed all woody debris from Spring Creek, a small stream that runs through town. Cleaning of the debris from the creek decreases the water table and aids in decreasing I/I.

Table 1 summarizes the facility design of Choteau’s WRRF.

Table 1: Facility Description	
Facility Description: Choteau is an oxidative plant with UV disinfection and continuous discharge to the unnamed drainage ditch.	
Construction Date: 2017	Design Flow, Average Daily (mgd): 0.48 ⁽¹⁾
Current Population: 1,800 ⁽¹⁾	Design Population: 2,290 ⁽¹⁾
Design BOD ₅ Removal: 85% ⁽¹⁾	Design TSS Removal: 85% ⁽¹⁾
Collection System: Separate ⁽¹⁾	Estimated I/I (mgd): 0.20 ⁽²⁾
Sanitary Sewer Overflow Events (Y/N): Y ^(3,4)	
Disinfection (Y/N): Y ⁽¹⁾	Disinfection Type: UV ⁽¹⁾
Footnotes: ⁽¹⁾ AS-BUILT Drawings for City of Choteau, Water Resource Recovery Facility, Choteau MT. Prepared by DOWL. October 1, 2017. ⁽²⁾ NPDES Application Form 2A, completed by Choteau WRRF in 2015. ⁽³⁾ Sanitary Sewer Overflow (SSO) Event Form, 10/02/2019 ⁽⁴⁾ Sanitary Sewer Overflow (SSO) Event Form, 1/19/2020	

C. Existing Permit Requirements and Effluent Quality

The period of record will be November 2018 – October 2020 to account for effluent quality from the upgraded facility. **Table 2** summarizes effluent quality as reported on discharge monitoring reports.

Table 2: Choteau Effluent Characteristics, November 2018 – September 2020						
Parameter ⁽¹⁾	Units	Limits (7-day/30-day)	Minimum Value	Maximum Value	Average Value	Sample Size
Flow Rate, Monthly Average	mgd	NA	0.16	0.93	0.54	25
Temperature	°F	NA	41.4	66.3	42.5	25
Conventional Pollutants:						
5-Day Biochemical Oxygen Demand (BOD ₅)	mg/L	45/30	0.50	15.0	3.63	25
	% removal	85	37.5	99.4	91.8	25
	lb/day	113/75	1.62	116.8	23.7	25
Total Suspended Solids (TSS)	mg/L	45/30	1.0	11.40	2.65	25
	lb/day	163/113	8.1	171.1	41.0	24
<i>E. coli</i> , Summer ^(2,4)	cfu/100 mL	252/126	1.0	103.9	14.5	15
<i>E. coli</i> , Winter ^(3,4)	cfu/100 mL	1260/630	1.0	139.6	23.9	10

Table 2: Choteau Effluent Characteristics, November 2018 – September 2020

Parameter ⁽¹⁾	Units	Limits (7-day/30-day)	Minimum Value	Maximum Value	Average Value	Sample Size
Oil and Grease ⁽⁵⁾	mg/L	NA	1.7	5.0	3.4	2
pH	s.u.	6.0-9.0	6.80	7.35	7.08	22
Nonconventional Pollutants:						
Total Ammonia, as N	mg/L	NA	0.11	0.65	0.29	4
Nitrate + Nitrite (N+N), as N	mg/L	NA	1.33	4.64	3.66	7
Total Kjeldahl Nitrogen	mg/L	NA	0.80	1.80	1.06	5
Total Nitrogen, as N	mg/L	NA	2.30	85.9	4.52	7
	lb/day	NA	5.90	44.9	22.6	7
Total Phosphorus, as P	mg/L	NA	0.53	1.97	0.96	7
	lb/day	NA	3.10	5.00	3.78	7

Footnotes:

⁽¹⁾ See Definition section at end of permit for explanation of terms.

⁽²⁾ This limit applies during the period of April 1 through October 31

⁽³⁾ This limit applied during the period of November 1 through March 31

⁽⁴⁾ Colony-forming units (cfu). Report Geometric mean if more than one sample is collected in the reporting period.

⁽⁵⁾ POR 6/30/2014-06/30/2015, only samples collected since 2010

D. Compliance Violations

Choteau entered into an Administrative Order on Consent (FID2009) February 14, 2012 and was required to complete upgrades to the facility to meet numeric effluent limits. All upgrades were completed and the enforcement action was lifted on November 5, 2018. Choteau had one exceedance of Total Suspended Solids (TSS) as a maximum weekly loading average since the enforcement action was lifted.

Since upgrading Choteau continues to struggle with high inflow and infiltration (I/I). On July 5, 2018 and January 2, 2019 Choteau bypassed their lagoon to avoid overwhelming the new system. Choteau reported Sanitary Sewer Overflow (SSO) events in October of 2019 and January of 2020. The October 2nd event was one day and rather minor in comparison to January 2020 that lasted from January 19th-23rd. The SSO event caused sewage to back up into basements, and surcharged 12 manhole lids. Choteau has been working to reduce I/I at the plant through targeted replacement of old sewer lines across town for the past 10 years. The facility has also been attempting to keep the local stream, Spring Creek, clear of any debris which raises the water table and leads to significant I/I.

III. Receiving Water: Unnamed Drainage ditch to the Teton River

Choteau discharges wastewater to a perennial unnamed drainage ditch that drains into the Teton River approximately 1,760 feet (0.3 miles) south of the facility, **Figure 1**.

A. Receiving Water Summary

The stream segment of the North and South Forks of the Teton River and its respective drainage area, which includes the unnamed drainage ditch, is classified below.

- Water Use Classification: B-1
- Watershed: Lower Missouri
- Waterbody Name/Location: Teton River
- Montana Stream Segment: MT41O001_030 Teton River, North and South Forks to Deep Creek
- USGS Hydrologic Unit Code: 10030205

- USGS Stream Gage: 06102500, 20 miles upstream of Choteau
- Ecoregion: Northwestern Glaciated Plains
- Impairments (2020 303(d) list): None
- 7Q10 of unnamed drainage ditch: 0.18 millions of gallons day (mgd)

The unnamed drainage ditch flows into the Teton River, North and South Forks to Deep Creek, HUC MT410001_030. A half mile downstream from where the unnamed drainage ditch and the Teton River meet is the confluence of the Teton River and Deep Creek. The confluence of the Teton River and Deep Creek is the beginning of the Montana Stream Segment defined as Teton River, Deep Creek to Muddy Creek, HUC MT410001_020.

- Water Use Classification: B-2
- Montana Stream Segment: MT410001_020 Teton River, Deep Creek to Muddy Creek
- Ecoregion: Northwestern Glaciated Plains
- Impairments (2020 303d) list): Salinity, Sulfate, Temperature, Total Dissolved Solids (TDS), Total Suspended Solids (TSS)

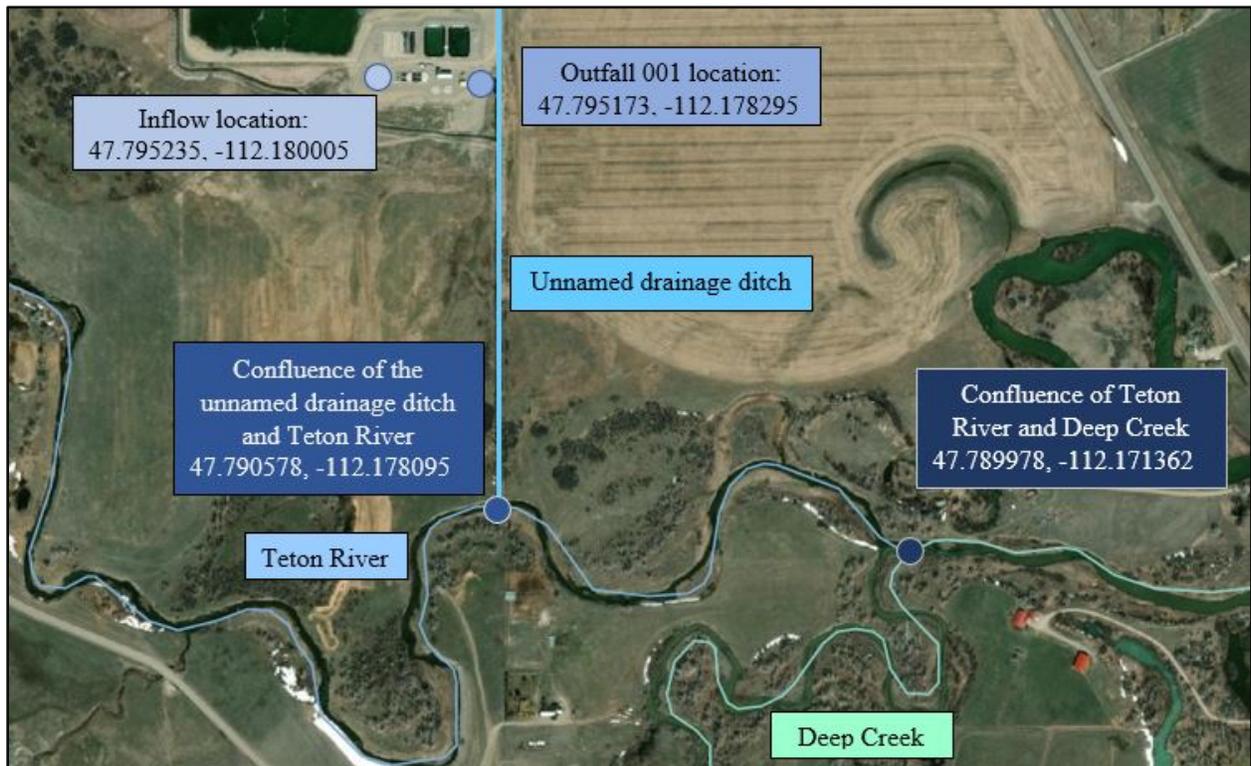


Figure 1: Receiving water diagram and HUC units associated with Choteau WRRF.

B. Water Use Classification

According to Montana Water Use Classifications, the Lower Missouri watershed includes the stream segment which Choteau discharges to and is classified as B-1. The goal of the state is to maintain B-1 class waters suitable for:

- drinking, culinary, and food processing purposes, after conventional treatment;
- bathing, swimming, and recreation;

- growth and marginal propagation of salmonid fishes and associated aquatic life, waterfowl and furbearers;
- and agricultural and industrial water supply.

C. Ambient Stream Conditions

1. Instream Pollutant Concentrations

Choteau was required to conduct monthly sampling of flow rate, ammonia, pH, and temperature upstream of Outfall 001 within the unnamed drainage ditch. This data is summarized in **Table 3**.

Table 3: Choteau Ambient Stream Conditions, December 2010 - October 2020						
Parameter ⁽¹⁾	Units	Minimum Value	Maximum Value	Average Value	75 th Percentile	Sample Size
Flow Rate	mgd	0.18	3.00	0.39	NA	110
Temperature	°F	1.60	77.0	48.2	59.3 ⁽²⁾	110
Conventional Pollutants:						
pH	s.u.	6.88	9.27	7.66	7.13 ⁽²⁾	110
Nonconventional Pollutants:						
Total Ammonia, as N	mg/L	0.00	1.00	0.15	0.40 ⁽³⁾	47
Footnotes:						
⁽¹⁾ See Definition section at end of permit for explanation of terms.						
⁽²⁾ The 75 th percentile was reported and used to calculate RP for Ammonia.						
⁽³⁾ The 95 th percentile was reported and used to calculate RP for Ammonia.						

2. Low Flow

The United States Geological Survey (USGS) water resources database does not contain data for the drainage ditch. However, the previous permit required monthly monitoring of upstream flow rate. The lowest reported flow rate since December of 2010 upstream of Outfall 001, 0.18 mgd, was reported on December 31, 2020. The lowest flow rate on record will be used as the seven-day low flow over 10 years (7Q10) to calculate reasonable potential.

IV. Technology Based Effluent Limits

Technology-based effluent limits (TBELs) represent the minimum treatment requirements implemented in MPDES permits. The limits are based on actual, available control technologies to treat pollutants, and must be met prior to dilution. The Montana Board of Environmental Review has adopted by reference 40 CFR 133, which defines minimum requirements for secondary treatment for publicly-owned treatment works.

A. Applicable Effluent Limits

Secondary treatment standards are defined in terms of effluent quality as measured by pH, 5-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), and percent removal of BOD₅ and TSS. These standards are based on application of biological treatment.

1. National Secondary Treatment Standards (NSS)

The NSS under 40 CFR 133.102 are based on demonstrated performance of a properly designed and operated municipal wastewater treatment system. Since Choteau has upgraded to a mechanical plant they will be held to NSS for both BOD₅ and TSS.

BOD₅ effluent history:

- From 2018-2020, the 95th percentile of monthly average BOD₅ was 6.44 mg/L.
- In the 2010 permit, effluent limits were set to NSS for BOD₅ (30 mg/L monthly avg and 45 mg/L weekly avg).
- These limits will not change.

TSS effluent history:

- From 2018-2020, the 95th percentile of monthly average TSS was 10.5 mg/L.
- In the 2008 permit, effluent limits were set to TES for TSS (45 mg/L monthly avg).
- Choteau has demonstrated it can now meet NSS limits for TSS (30 mg/L monthly avg and 45 mg/L weekly avg).

Choteau will therefore be held to NSS for BOD₅, TSS, and pH:

- **BOD₅ and TSS monthly average:** must not exceed 30 mg/L
- **BOD₅ and TSS weekly average:** must not exceed 45 mg/L
- **BOD₅ and TSS percent removal:** must not be less than 85%
- **pH:** must be maintained within the range of 6.0 to 9.0.

2. Mass-Based Effluent Limits

Effluent limits must be expressed in terms of mass, and are identified as load (lb/day). The load limits were calculated by multiplying the facility’s average daily design flow, TBELs discussed above in IV.A.1 for each pollutant, and a conversion factor.

The facilities current average daily design flow has increased to 0.48 mgd; the current load limits are calculated based on this flow, the current concentration limits, and the conversion factor of 8.34.

- BOD₅ and TSS monthly average load = $0.48 \text{ mgd} \times 30 \frac{\text{mg}}{\text{L}} \times 8.34 \frac{\text{lb} \cdot \text{L}}{\text{Mgal} \cdot \text{mg}} = 120 \frac{\text{lb}}{\text{day}}$
- BOD₅ and TSS weekly average load = $0.48 \text{ mgd} \times 45 \frac{\text{mg}}{\text{L}} \times 8.34 \frac{\text{lb} \cdot \text{L}}{\text{Mgal} \cdot \text{mg}} = 180 \frac{\text{lb}}{\text{day}}$

Load limits for BOD₅ and TSS will apply to the effluent and will be maintained at the more stringent of the nondegradation load allocations or mass-based loading limits, as discussed next.

B. Nondegradation Load Allocations

Montana’s Nondegradation Policy prevents degradation of state waters and ensures that existing uses continue to be achieved. Sources that comply with the conditions of their permit and do not exceed the limits from a permit issued by DEQ prior to April 29, 1993 are not considered new or increased sources.

Prior to the facility, upgrade the average daily design flow was 0.30 mgd. Nondegradation load values based on the most stringent monthly average load limits since 1993 are compared to the actual average loads discharged from the facility from the past five years. The long-term averages in **Table 4** demonstrate that Choteau discharges within the proposed load-based effluent limits, therefore this facility is not considered a new or increased source.

Table 4: Nondegradation Limits		Actual Load (lb/day)		
Parameter	Load (lb/day)	2018	2019	2020
BOD ₅	75	12.1 ⁽¹⁾	12.8	7.1
TSS	113	31.5 ⁽¹⁾	30.9	18.1

Footnotes:
 (1) The 2018 BOD₅ and TSS loads were calculated using two months of data, November-December 2018.

C. Final Technology-Based Effluent Limits

The renewed permit will include TBELs based on National Secondary Standards as shown in **Table 5**. Technology-based limits for pH remain between 6.0-9.0 standard units.

Parameter	Units	Average Monthly Limit	Average Weekly Limit
Biochemical Oxygen Demand (BOD ₅)	mg/L	30	45
	%	85	-
	lb/day	120	180
Total Suspended Solids (TSS)	mg/L	30	45
	%	85	-
	lb/day	120	180
pH	s.u.	6.0 - 9.0 (instantaneous)	

⁽¹⁾ See Definition section at end of permit for explanation of terms.

V. Water Quality-Based Effluent Limits

Permits are required to include Water Quality-Based Effluent Limits (WQBELs) when TBELs are not adequate to protect state water quality standards. WQBELs are developed for each parameter demonstrating reasonable potential to cause or contribute to an excursion from any water quality standard, including narrative criteria. The purpose of this section is to provide a basis and rationale for establishing effluent limits that will protect designated uses of the receiving water.

A. Scope and Authority

The Montana Water Quality Act states that a permit may only be issued if DEQ finds that it will not result in pollution of any state waters. No wastes may be discharged that can reasonably be expected to violate any state water quality standards. Montana water quality standards define both water use classifications for all state waters and numeric and narrative standards that protect those designated uses.

B. Applicable Water Quality Standards

1. B-1 Classification Standards

Choteau discharges to an unnamed drainage ditch that is subject to the water quality standards for B-1 waters.

2. General Prohibitions

Choteau’s discharge must comply with general prohibitions (narrative standards) which require that state waters be free from substances which will:

- Settle to form objectionable sludge deposits or emulsions beneath the surface of the water or upon adjoining shorelines.
- Create floating debris, scum, a visible oil film (or be present in concentrations at or in excess of 10 mg/L), or globules of grease or other floating materials.
- Produce odors, colors, or other conditions which create a nuisance or render undesirable tastes to fish flesh or make fish flesh inedible.
- Create concentrations or combinations of materials which are toxic or harmful to human, animal, plant, or aquatic life.

- Create conditions which produce undesirable aquatic life.

C. Pollutants of Concern for WQBELs

Pollutants and parameters are identified as a pollutant of concern for the following reasons:

- Listed as TBELs
- Identified as needing WQBELs in the previously issued permit
- Identified as present in effluent monitoring or otherwise expected present in the discharge
- Associated with an impairment which may or may not have a wasteload allocation in a total maximum daily load (TMDL)

Parameters typically present in sanitary wastewater that may cause or contribute to a violation of water quality standards include those found in **Table 6**. Identification of a pollutant of concern (POC) is not an indication that WQBELs are necessary, but an indication that further evaluation is required.

Table 6: Identification of Pollutants of Concern for WQBELs Consideration	
Parameter	Basis for POC Identification
<i>Conventional Pollutants:</i>	
BOD ₅ , TSS, and pH	TBEL in previous permit
<i>E. coli</i> , Oil and Grease	WQBEL in previous permit
<i>Nonconventional Pollutants:</i>	
Ammonia, Nitrate + Nitrite, Total Nitrogen, Total Phosphorus	Previous permit required monitoring

D. Mixing Zone

A mixing zone is not granted under this permit. All effluent limits must be met at the end of the discharge pipe before the effluent reaches the receiving water.

E. Water Quality-Based Effluent Limits Development

WQBELs are expressed as maximum daily limits and average monthly limits.

- The **maximum daily limit** (MDL) is the highest allowable discharge measured during a calendar day or 24-hour period representing a calendar day.
- The **average monthly limit** (AML) is the highest allowable value for the average of daily discharges over a calendar month.

WQBEL development is detailed on a parameter-by-parameter basis in Section V.G, Final Pollutant Evaluation.

F. Reasonable Potential Analysis

The reasonable potential (RP) analysis predicts the impact of the discharge on the receiving water under design conditions, and WQBELs are developed for each parameter that demonstrates RP to cause an exceedance of a water quality standard. DEQ uses a statistical approach outlined in Chapter 3 of EPA’s Technical Support Document for Water Quality-based Toxics Control (EPA’s TSD Manual) to determine RP for individual pollutants:

1. The **TSD 3-2 multiplier** is calculated from dataset statistics (the data set, coefficient of variation, and sample size at the 95% confidence interval).

2. The **critical effluent concentration** is calculated by multiplying the maximum effluent concentration reported by the facility and the TSD 3-2 multiplier.
3. **Reasonable potential** is found where calculated critical effluent concentration is greater than the water quality standard.

G. Final Pollutant Evaluation

Below is a Summary of each parameter’s reasonable potential analysis and WQBEL development, if applicable.

1. **BOD₅, TSS, and pH:** These parameters are typical effluent quality indicators and are regulated as TBELs.
 - No additional limits are necessary - TBELs adequately control these pollutants and protect beneficial uses.

2. **Escherichia coli (E. coli) Bacteria:** Pathogens are known municipal wastewater contaminants. *E. coli* standards protect beneficial uses of receiving waters for pathogens. State waters must be free from substances that are harmful or toxic to humans. The standards for B-1 classified waters are:
 - Summer: April 1 through October 31 of each year
 - The geometric mean number must not exceed 126 organisms per 100 mL
 - 10% of the total samples may not exceed 252 organisms per 100 mL during any 30-day period
 - Winter: November 1 through March 31 of each year
 - The geometric mean number of *E. coli* must not exceed 630 org/100 mL
 - 10% of the total samples may not exceed 1,260 organisms per 100 mL during any 30-day period
 - The existing permit limits and monitoring requirements for *E. coli* are maintained in this renewal.

3. **Oil and Grease:** The 2015-issued permit required semi-annual monitoring to determine if Choteau has reasonable potential to exceed the water quality standard.
 - Oil and Grease hasn’t been sampled as anticipated in the 2010 permit because of the facility upgrades, therefore we do not have enough data to analyze if RP exist.
 - The highest of the two samples collected from Choteau’s effluent was 5.0 mg/L, which is below the oil and grease standard of 10 mg/L.

4. **Ammonia, as N:** The 2010 permit required Choteau to monitor effluent ammonia concentrations as well as background stream temperature, pH and ammonia concentrations.
 - Reasonable potential does not exist for Ammonia. **Table 8** displays the projected maximum effluent concentration (1.7 mg/L) does exceed the acute and chronic water quality standard (21.28 or 5.36 mg/L). However, RP was analyzed using only 4 samples due to the short POR available following facility upgrades. Therefore, further analysis is needed.
 - The monthly monitoring of ammonia in effluent as well as instream monitoring of flow, pH, temperature, and ammonia will be retained in this permit renewal.

Table 7: Total Ammonia as N Water Quality Standards for unnamed drainage ditch to the Teton River.

Condition	Period	Salmonids Present	Early Life Stages	Ambient pH (s.u.)	Ambient Temperature (°C) ⁽¹⁾	Water Quality Standard (mg/L) ⁽²⁾
Acute	Annual	Yes	NA	7.13	15.2	21.28
Chronic	Annual	NA	Yes	7.13	15.2	5.35

Footnotes:

Table 7: Total Ammonia as N Water Quality Standards for unnamed drainage ditch to the Teton River.

Condition	Period	Salmonids Present	Early Life Stages	Ambient pH (s.u.)	Ambient Temperature (°C) ⁽¹⁾	Water Quality Standard (mg/L) ⁽²⁾
NA - Not applicable						
⁽¹⁾ Based on 75 th percentile of data set.						
⁽²⁾ Acute – maximum daily standard; Chronic- monthly average standard						

RP to exceed the acute water quality standard for ammonia was assessed using in **Table 8**.

Table 8: Reasonable Potential Analysis for Ammonia Choteau

Projected Critical Effluent Concentration (Cd)						Water Quality Standard			RP?
CV	Sample Size	→ 3-2 TSD Mult.	• C _{max}	= C _d	Aquatic Life		Human Health		
					Acute	Chronic			
<i>Pollutants of Concern</i>						(mg/L)	(mg/L)	(mg/L)	
Ammonia	0.6	4	2.59	0.65	1.7	21.28	5.36	10	No

Footnotes:
⁽¹⁾ Aquatic life standards are based on the 75th percentile of pH 7.13 and temperature of 59.3°F.

5. Nitrate Plus Nitrite (N+N): Nitrate and nitrite are toxic components of total nitrogen. The human health standard for N+N is 10 mg/L.

- Quarterly effluent monitoring of N+N will be increased to monthly to assure there is no RP for this facility.
- Choteau will also be required to conduct monthly instream monitoring of N+N so RP can properly be assessed in the next permit renewal.

6. Nutrients, Total Nitrogen (TN) and Total Phosphorus (TP): The 2003 Teton River Water Quality Management Plan and TMDL required reductions in nonpoint source pollution instead of Choteau. As in many watersheds with large agricultural sources of nutrients, focusing on the nonpoint sources are required to create assimilative capacity before limiting point sources like Choteau. However, Choteau has upgraded from a lagoon to a mechanical plant anyway and has worked to reduce nutrient loads since the previous permit. DEQ will require monitoring this permit cycle as nonpoint source pollution continues to be addressed in the watershed.

- Quarterly effluent monitoring of TN, TKN, and TP will be retained in this permit renewal.
- Monthly ambient monitoring of TN and TP will be required.

VI. Final Effluent Limits

The final effluent limits are a combination of the more stringent of the technology-based and water quality-based effluent limits developed. The final effluent limits in **Table 9** will be applied to the discharge at Outfall 001 beginning on the permit effective date and lasting through the term of the permit.

Parameter	Units	Average Monthly Limit ⁽¹⁾	Average Weekly Limit ⁽¹⁾	Maximum Daily Limit ⁽¹⁾
5-Day Biochemical Oxygen Demand (BOD ₅)	mg/L	30	45	-
	lb/day	120	180	-
	% Removal	85	-	-

Parameter	Units	Average Monthly Limit ⁽¹⁾	Average Weekly Limit ⁽¹⁾	Maximum Daily Limit ⁽¹⁾
Total Suspended Solids (TSS)	mg/L	30	45	-
	lb/day	120	180	-
	% Removal	85	-	-
<i>E. coli</i> , April – October	org/100 mL	126	252	-
<i>E. coli</i> , November - March	org/100 mL	630	1,260	-
Oil & Grease	mg/L	-	-	10
pH	s.u.	6.0-9.0 Instantaneous minimum and maximum		
Footnotes: ⁽¹⁾ See Definitions section at the end of the permit for explanation of terms.				

VII. Monitoring and Reporting Requirement

A. Requirement to Monitor and Report

Choteau will be required to monitor. The samples collected and analyzed must be representative of the volume and nature of the facility’s discharge. The Required Reporting Value (RRV) is DEQ’s best determination of a level of analysis that can be achieved by the majority of commercial, university, or governmental laboratories using EPA-approved methods or methods approved by DEQ.

- Monitoring will start with the effective date of the permit and last for the duration of the permit cycle.
- All analytical procedures must comply with the specifications of 40 CFR Part 136.
- Choteau must submit electronically via NetDMR for each month by the 28th of the following month.

B. Monitoring Locations, Frequency, Sample Type, and Calculations

The monitored parameters, their respective monitoring locations, and the reporting requirements are presented in **Table 8**. Reporting is required monthly for all parameters.

- Influent Monitoring** is needed to calculate percent removal for BOD₅ and TSS. Influent samples must be taken at the influent sampling location, provided by Choteau WRRF, 47.795235 N, 112.180005 W.
- Effluent Monitoring** shall be conducted at the Parshall flume prior to entering the unnamed drainage ditch (Outfall 001), **Table 10**. Monitoring is required during periods with discharge. If no discharge occurs during the reporting period, “no discharge” shall be reported on NetDMR for influent and effluent monitoring requirements.

Parameter ⁽¹⁾	Units	Minimum Frequency	Type ⁽²⁾	Reporting Requirements	RRV ⁽³⁾
Effluent Flow Rate	mgd	1/Week	Instantaneous	Monthly Average, Daily Maximum	-
Influent Flow Rate	mgd	1/Week	Instantaneous	Monthly Average, Daily Maximum	-
Biochemical Oxygen Demand (BOD ₅)	mg/L	1/Week	Composite	Monthly Average, Weekly Maximum	2.0
	% Removal ⁽⁴⁾	1/Month	Calculated	Monthly Minimum	-

Table 10: Monitoring and Reporting Requirements for Outfall 001 and Influent					
Parameter ⁽¹⁾	Units	Minimum Frequency	Type ⁽²⁾	Reporting Requirements	RRV ⁽³⁾
	lb/day	1/Month	Calculated	Monthly Average, Weekly Maximum	-
Total Suspended Solids (TSS)	mg/L	1/Week	Composite	Monthly Average, Weekly Maximum	1.0
	% Removal ⁽⁴⁾	1/Month	Calculated	Monthly Minimum	-
	(lb/day)	1/Month	Calculated	Monthly Average, Weekly Maximum	-
Influent BOD ₅	mg/L	1/Month	Composite	Monthly Average	2.0
Influent TSS	mg/L	1/Month	Composite	Monthly Average	1.0
<i>E. coli</i>	org/100 mL	1/ Month	Grab	Monthly and Weekly Geometric Mean	1/100mL
Total Ammonia	mg/L	1/Month	Composite	Monthly Average	0.070
Total Phosphorus ⁽⁵⁾	mg/L	1/Month	Composite	Monthly Average	0.003
	lb/day	1/Month	Calculated	Monthly Average	-
Total Nitrogen ⁽⁵⁾	mg/L	1/Month	Composite	Monthly Average	0.020
	lb/day	1/Month	Calculated	Monthly Average	-
Nitrate + Nitrite	mg/L	1/ Month	Composite	Monthly Average	0.020
Total Kjeldahl Nitrogen	mg/L	1/ Month	Composite	Monthly Average	0.225
Oil Sheen Presence	Presence	1/Week	Observation	Present/Absent	-
Oil and Grease	mg/L	Semi-Annual ⁽⁶⁾	Grab	Monthly Maximum	1.0
Effluent pH	s.u.	1/Month	Instantaneous	Daily Minimum, Daily Maximum	-
Footnotes:					
⁽¹⁾ Monitoring for all parameters are effluent unless otherwise stated.					
⁽²⁾ See Definition section at end of permit for explanation of terms.					
⁽³⁾ See Circular DEQ-7 for more information on Required Reporting Values (RRVs). Analysis must achieve these, or lower, RRVs.					
⁽⁴⁾ Percent removal will be calculated using the monthly average values.					
⁽⁵⁾ Monitoring will be required during the months of June, July, and August.					
⁽⁶⁾ Oil and grease analysis must be conducted semi-annually plus anytime a visual sheen is observed in the effluent.					

3. Upstream Monitoring is necessary to calculate ambient ammonia water quality standards. Instream samples will be conducted upstream of Outfall 001, **Table 11**.

Upstream monitoring is required to calculate ammonia standards, and analyze if RP exists for ammonia and nitrate + nitrite in the next permit cycle. Samples will be taken regardless of discharge from the facility.

Table 11: Upstream Monitoring and Reporting Requirements					
Parameter	Units	Minimum Frequency	Type ⁽¹⁾	Reporting Requirements	RRV ⁽²⁾
Flow Rate	mgd	1/Month	Instantaneous	Daily Minimum, Daily Maximum	-
pH	s.u.	1/Month	Instantaneous	Daily Minimum, Daily Maximum	0.1
Temperature	°C	1/Month	Instantaneous	Daily Maximum	0.1
Ammonia	mg/L	1/Month	Grab	Daily Maximum	0.07
Nitrate +Nitrite	mg/L	1/Month	Grab	Daily Maximum	0.02

Table 11: Upstream Monitoring and Reporting Requirements					
Parameter	Units	Minimum Frequency	Type ⁽¹⁾	Reporting Requirements	RRV ⁽²⁾
⁽¹⁾ See Definition section at end of permit for explanation of terms.					
⁽²⁾ See Circular DEQ-7 for more information on RRVs. If reporting non-detects analysis must achieve these, or lower RRVs.					

VIII. Special Conditions

See the permit for Special Conditions regarding Operation and Maintenance Manual, sewage sludge, and Pretreatment requirements.

IX. Public Participation

A. Public Notice

DEQ issued a public notice stating that a tentative decision has been made to issue an MPDES permit to Choteau, and that a draft permit, fact sheet and environmental assessment (EA) have been prepared.

Details are below:

- Public Notice No. MT-21-02 dated January 25, 2021
- Public comments are invited any time prior to the close of the business February 25, 2021
- Comments may be directed to:

Department of Environmental Quality Water Protection Bureau PO Box 200901 Helena, MT 59620	or	DEQWPBPublicComments@mt.gov
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- All comments received or postmarked prior to the close of the public comment period will be considered in the formulation of the final permit.
- DEQ will respond to all substantive comments and issue a final decision within sixty days of the close of the public comment period or as soon as possible thereafter.

All persons, including the applicant, who believe any condition of the draft permit is inappropriate shall raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by the close of the public comment period.

B. Notification of Interested Parties

Copies of the public notice were mailed to the discharger, state and federal agencies and interested persons who have expressed an interest in being notified of permit actions. A copy of the distribution list is available in the administrative record for this permit.

- In addition to mailing the public notice, a copy of the notice and applicable draft permit, fact sheet and EA are posted on DEQ’s website for 30 days.

Any person interested in being placed on the mailing list for information regarding this MPDES permit should contact DEQ, reference this facility, and provide a name, address, and email address.

C. Public Hearing

During the public comment period provided by the notice, DEQ will accept requests for a public hearing. A request for a public hearing must be in writing and must state the nature of the issue proposed to be raised in the hearing.

D. Permit Appeal

After the close of the public comment period DEQ will issue a final permit decision, which is a final decision to issue, deny, modify, revoke and reissue, or terminate a permit. A permit decision is effective 30 days after the date of issuance unless a later date is specified in the decision, a stay is granted, or the applicant files an appeal.

Choteau may file an appeal within 30 days of DEQ's action to the following address:

Secretary, Board of Environmental Review
 Department of Environmental Quality
 1520 East Sixth Avenue
 PO Box 200901
 Helena, Montana 59620-0901

E. Additional Information

Requests for additional information or questions regarding this permit should be directed to the Water Protection Bureau at (406)-444-5546.

X. Information Sources

Administrative Rules of Montana Title 17 Chapter 30 – Water Quality

- Subchapter 2 - *Water Quality Permit and Application Fees.*
- Subchapter 5 - *Mixing Zones in Surface and Ground Water.*
- Subchapter 6 - *Montana Surface Water Quality Standards and Procedures.*
- Subchapter 7 - *Nondegradation of Water Quality.*
- Subchapter 12 - *Montana Pollutant Discharge Elimination (MPDES) Standards.*
- Subchapter 13 - *Montana Pollutant Discharge Elimination (MPDES) Permits.*

AS-BUILT Drawings for City of Choteau, Water Resource Recovery Facility, Choteau Montana.
 Prepared by DOWL. October 1, 2017.

CWAIC: Clean Water Act Information Center, Department of Environmental Quality. 2020. Accessed October 2020.

Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. §§ 1251-1387, October 18, 1972, as amended 1973-1983, 1987, 1988, 1990-1992, 1994, 1995 and 1996.

Montana Code Annotated (MCA), Title 75-5-101, *et seq.*, “Montana Water Quality Act.”

Montana DEQ. 2019. *Department Circular DEQ-7, Montana Numeric Water Quality Standards.*

Montana DEQ. 2013. Compliance Inspection Report, The City of Choteau.

Montana DEQ. 2018. Compliance Inspection Report, Choteau Water Resource Recovery Facility.

Montana DEQ. 2003. Final – Water Quality Management Plan & TMDLs for the Teton River Watershed.

Montana DEQ. Montana Pollutant Discharge Elimination System (MPDES) Permit Number MT0020052

- Administrative Record
- Renewal Application Forms DEQ-1 and EPA Form 2A, 2015

US Code of Federal Regulations, 40 CFR Parts 122-125, 130-133, & 136.

Prepared by: Kayla Glossner

Date: January 2021