Fact Sheet for IPDES Permit No. ID0030040

Insert date of this draft fact sheet when issued for public notice or final fact sheet

Idaho Department of Environmental Quality (DEQ) proposes to issue an Idaho Pollutant Discharge Elimination System (IPDES) Permit to discharge pollutants under the provisions of IDAPA 58.01.25 to:

City of Moyie Springs
48.720008° -116.195044°
Wastewater Treatment Plant
PO Box 573
Moyie Springs, Idaho 83845

Public Comment Start Date:	insert 01/06/ 2022
Public Comment Expiration Date:	insert 02/07/2022
Technical Contact:	Matt Stutzman 208-373-0502 Matthew.stutzman@deq.idaho.gov

Purpose of this Fact Sheet

This fact sheet explains and documents the decisions the Idaho Department of Environmental Quality (DEQ) made in writing the draft Idaho Pollutant Discharge Elimination System (IPDES) permit for City of Moyie Springs.

This fact sheet complies with IDAPA 58.01.25.108.02 of the Idaho Administrative Code, which requires DEQ to prepare a draft permit and accompanying fact sheet for public evaluation before issuing an IPDES permit.

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Acronyms

1Q10	1-day, 10 year low flow
1B3	Biologically-based and indicates an allowable exceedance of once every 3 years.
4B3	Biologically-based and indicates an allowable exceedance for 4 consecutive days once every 3 years.
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.
30Q5	30-day, 5 year low flow
30Q10	30-day, 10 year low flow
AML	Average Monthly Limit
BOD_5	Biochemical Oxygen Demand, five-day
BMP	Best Management Practices
°C	Degrees Celsius
$CBOD_5$	Carbonaceous Biochemical Oxygen Demand, five-day
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CV	Coefficient of Variation
CWA	Clean Water Act
DEQ	Idaho Department of Environmental Quality
DMR	Discharge Monitoring Report
EPA	U.S. Environmental Protection Agency
IDAPA	Refers to citations of Idaho administrative rules
IDWR	Idaho Department of Water Resources
I/I	Inflow and Infiltration
IPDES	Idaho Pollutant Discharge Elimination System
lb/day	Pounds per day
LD_{50}	Dose at which 50% of test organisms die in a specified time period
LTA	Long Term Average
MDL	Maximum Daily Limit or Method Detection Limit
mgd	Million gallons per day
mg/L	Milligrams per liter
mL	Milliliters

O&M	Operations and maintenance
POC	Pollutant(s) of Concern
POTW	Publicly Owned Treatment Works
QAPP	Quality Assurance Project Plan
RPA	Reasonable Potential Analysis
RPMF	Reasonable Potential Multiplication Factor
RPTE	Reasonable Potential To Exceed
SIU	Significant Industrial User
s.u.	Standard Units
TBEL	Technology Based Effluent Limits
TMDL	Total Maximum Daily Load
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSD	Technical Support Document for Water Quality-based Toxics Control (EPA/505/2-90-001)
TSS	Total suspended solids
TU_c	Toxic Units, Chronic
WET	Whole Effluent Toxicity
USGS	United States Geological Survey
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WQC	Water Quality Criteria
WQS	Water Quality Standards

1 Introduction

This fact sheet provides information on the permit for the Idaho Department of Environmental Quality (DEQ) Idaho Pollutant Discharge Elimination System (IPDES) permit for the City of Moyie Springs Publicly Owned Treatment Works (POTW)("facility"). This fact sheet complies with the Rules Regulating the Idaho Pollutant Discharge Elimination System Program (IDAPA 58.01.25), which requires DEQ to prepare a draft permit and accompanying fact sheet for public evaluation before issuing an IPDES permit.

DEQ proposes to issue the IPDES permit for the Moyie Springs POTW. To ensure protection of water quality and human health, the permit places conditions on the type, volume, and concentration of pollutants discharged from the facility to waters of the United States.

This fact sheet includes:

- a map and description of the discharge location;
- a listing of draft effluent limits and other conditions the facility must comply with;
- documentation supporting the draft effluent limits;
- technical material supporting the conditions in the permit; and
- information on public comment, public hearing, and appeal procedures.

Terms used in this fact sheet are defined in Section 5, Definitions, of the permit.

Public Comment

The permit application, draft permit, and fact sheet describing the terms and conditions applicable to the permit are available for public review and comment during a public comment period. The public is provided at least 30 days to provide comments to DEQ (IDAPA 58.01.25.109.01.c). Persons wishing to request a public meeting for this facility's draft permit must do so in writing within 14 calendar days of public notice being published that a draft permit has been prepared; requests for public meetings must be submitted to DEQ by insert date. Requests for extending a public comment period must be provided to DEQ in writing before the last day of the comment period (IDAPA 58.01.25.10.02). For more details on preparing and filing comments about these documents, please see the IPDES guidance *Public Participation in the Permitting Process* at "https://www2.deq.idaho.gov/admin/LEIA/api/document/download/4814". For more information, please contact the permit writer.

After the close of the public comment period, DEQ considers information provided by the public, prepares a document summarizing the public comments received, and may make changes to the draft permit in response to the public comments (IDAPA 58.01.25.109.03). DEQ will include the summary and responses to comments in Appendix D of the final fact sheet. DEQ may request more information from the applicant in order to respond to public comments (IDAPA 58.01.25.109.02.h.). After the public comment period and prior to issuing the final permit decision, DEQ will also provide the applicant an opportunity to submit additional information to address proposed changes and support the response to public comments. DEQ will assess the public comment in conjunction with any additional information received from the applicant and develop a proposed permit.

The Environmental Protection Agency (EPA) may take up to 90 days from the publication of public notice of the draft permit to develop and document specific grounds for objections to a proposed permit. If EPA objects to a proposed permit DEQ must satisfactorily address the objections within the time period specified in the memorandum of agreement between EPA and DEQ (40 CFR123.44). Otherwise, EPA may issue a permit in accordance with 40 CFR 121, 122, 124. If EPA issues the permit, any state, interstate agency, or interested person may request EPA hold a public hearing regarding the objection.

Permit Issuance

Following the public comment period(s) on a draft permit and after receipt of any comments on the proposed permit from EPA, DEQ will issue a final permit decision, the final permit, and the fact sheet. All comments received will be addressed in Appendix D of the final fact sheet and any resulting changes to the permit or fact sheet documented. A final permit decision means a final decision to issue, deny, modify, revoke and reissue, or terminate a permit (IDAPA 58.01.25.107.04.). The final permit and final fact sheet will be posted on the DEQ webpage. Response to comments will be located in the final fact sheet as an appendix.

The permit holder or applicant and any person or entity who filed comments or who participated in a public meeting on the draft permit may file a petition for review of a permit decision as outlined in Appendix C. The petition for review must be filed with DEQ's hearing coordinator within 28 days after DEQ serves notice of the final permit decision (IDAPA 58.01.25.204.01). Any party that participated in the petition for review that is still aggrieved by the final IPDES action or determination has a right to file a petition for judicial review (IDAPA 58.01.25.204.26).

Documents are Available for Review

The IPDES permit and fact sheet can be reviewed or obtained by visiting or contacting the DEQ State office between 8:00 a.m. and 5:00 p.m., Monday through Friday at the address below. The permit and fact sheet can also be found by visiting the DEQ website at "*https://www.deq.idaho.gov/public-information/newsroom/*"

DEQ
1410 N. Hilton St.
Boise, ID 83706
208-373-0502

The fact sheet and permits are also available at the DEQ Regional Office:

Coeur d'Alene Regional Office
2110 Ironwood Parkway
Coeur d'Alene, ID 83814
208-769-1422

Disability Reasonable Accommodation Notice

For technical questions regarding the permit or fact sheet, contact the permit writer at the phone number or e-mail address at the beginning of this fact sheet. Those with impaired hearing or speech may contact a TDD operator at 1-800-833-6384 (ask to be connected to the permit writer

at the above phone number). Additional services can be made available to a person with disabilities by contacting the permit writer.

2 Background Information

2.1 Facility Description

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

Table 1. Facility information.

Permittee	City of Moyie Springs
Facility Physical Address	City Hall: 3331 Roosevelt Rd. Moyie Springs, ID
Facility Mailing Address	PO Box 573 Moyie Springs, ID 83845-0573
Facility Contact	John Nelson, Public Works Director (208) 267-5161
Responsible Official	Mayor Stephen Economu
Facility Location	Latitude: 48.720008° Longitude: -116.195044° °
Receiving Water Name	Kootenai River
Outfall Location	Latitude: TBD (estimated 48.713953°) Longitude: TBD (estimated -116.188864°)
Permit Status	
Application Submittal Date	August 20, 2020
Date Application Deemed Complete	November 17, 2020

The City of Moyie Springs (the City) owns and operates the City Publicly Owned Treatment Works (POTW) located in Moyie Springs, Idaho. The collection system has no combined sewers. The facility serves a resident population of 179 based on its permit application. There are no major industries discharging to the facility.

2.1.1 Facility Information

The design flow of the proposed facility is 0.083 mgd. The treatment process will consist of a fine influent screen, sequencing batch reactor, equalization basin, and UV disinfection. Details about the wastewater treatment process are provided in Section 2.1.2, and a map showing the location of the treatment facility and discharge is included in Appendix A. Because the facility has a design flow less than 1 mgd, serves less than 10,000 people, and will not cause significant water quality impacts, the facility is considered a minor facility.

2.1.2 Treatment Process

The current facility was constructed in 1970 and consists of an aeration basin, settling basin, chlorine disinfection, and effluent pipe that discharges to the soil's surface resulting in overland

flow towards the Moyie River. The proposed facility will receive influent from the existing collection system at the headworks where it will be screened before being directed to the sequencing batch rector (SBR). The wastewater then flows to the equalization basin before UV disinfection. The equalization basin at the end of treatment train will provide an opportunity for individual batches of effluent to mix before sampling making composite samples of effluent unnecessary. After disinfection, the effluent will be piped approximately 0.6 miles to the discharge point in the Kootenai River, downstream from the confluence with the Moyie River. The 2020 preliminary engineering report includes an anticipated construction schedule indicating construction activities will extend into 2022.

2.1.3 Permit History

The City has operated a POTW since 1970. At that time, the facility consisted of a 300,000-gallon aeration basin and chlorine disinfection system that historically discharged effluent into three dry wells located adjacent to the facility. At some point in the 1980's the dry well discharge was abandoned due to erosion and effluent was rerouted to a stormwater drainage ditch that terminated at a natural sedimentation pond. During large precipitation events, the combined stormwater and wastewater effluent could overflow the pond and flow overland to the Moyie River. In 2016, the City entered into a compliance agreement schedule (CAS) with DEQ to correct the facility's discharging to the soil surface without a Reuse permit and failure to seepage test their lagoon. The CAS requires the City to upgrade their treatment works to achieve compliance with IDAPA 58.01.16, Wastewater Rules, and to obtain an appropriate permit, either a Reuse or an IPDES permit.

The permittee submitted an IPDES permit application on August 2, 2020. DEQ determined that the application was timely and complete.

During State Environmental Review Process for the new wastewater facility, DEQ consulted with appropriate state and federal agencies to evaluate the potential short-term and long-term impacts, and the direct, indirect, and cumulative impacts of the wastewater improvement project. The overall conclusion was that the proposed action would not result in significant environmental impacts and the proposed project will have long-term positive effects through improved discharged water quality. Furthermore, DEQ evaluated the proposed facility effects on threatened and endangered species and essential fish habitat. With regard to Bull trout and White Sturgeon, the determination was "*May Effect, but Is Not Likely to Adversely Affect*." The finding for essential fish habitat was "*No Effect*."

2.1.4 Compliance History

The City did not have a previous permit nor permit limits to comply with.

2.1.5 Sludge/Biosolids

The IPDES program gained authority for regulating biosolids on July 1, 2021. The 2022 permit requires a sludge management plan to be developed and submitted to DEQ. The plan must follow the procedures in IDAPA 58.01.16 and follow monitoring, recordkeeping, and reporting requirements (if applicable) as outlined in 40 CFR 503.

2.1.6 Outfall Description

The Moyie Springs POTW plans to discharge to the receiving water through an 8-inch or 6-inch partially buried pipe. The discharge pipe will run approximately 0.6 miles from the facility to the receiving water. The proposed discharge to the Kootenai River includes the potential for a single port diffuser and built-in options to upgrade to multi-port diffusers in the future if needed.

2.1.7 Wastewater Influent Characterization

Table 2 provides 2019 flow rates based on information from the Preliminary Engineering Report City of Moyie Springs WWTP and Discharge Line Project (PER) prepared by Keller Associates and submitted in 2020.

Table 3 provides influent design capacity loads from the 2020 PER.

Table 2. Current (2019) wastewater influent flow characterization.

Flow Parameter	Value & Units
Average Daily Flow	0.032 mgd
Max Daily Flow	0.086 mgd
Max Month Daily Flow	0.052 mgd

Table 3. Wastewater influent design loads.

Parameter	Units	2019 Max monthly	2040 max monthly	Data Source
Biochemical Oxygen Demand (BOD5)	lbs/day	53	109	Preliminary Engineering Report: CITY OF MOYIE SPRINGS WWTP AND DISCHARGE LINE PROJECT, 2020
Total Suspended Solids (TSS)	lbs/day	33	67	
Total Kjeldahl Nitrogen (TKN)	lbs/day	15	30	
Total Phosphorus (TP)	lbs/day	2	4	

Based on the lack of an NPDES permit, the City has not routinely monitored influent/effluent flow or pollutant concentrations.

2.2 Description of Receiving Water

The City POTW's proposed discharge is to the Kootenai River in the Panhandle Basin, Lower Kootenai subbasin, Water Body Assessment Unit (AU) ID17010104PN029_08. At the point of

discharge, the receiving water is protected for the following designated uses (IDAPA 58.01.02.110.02) and are believed to be existing uses:

- Cold water aquatic life (CWAL) (not supporting; cause listed is temperature)
- Salmonid spawning (not supporting; cause listed is temperature)
- Primary contact recreation (fully supporting)
- Domestic Water Supply (unassessed)

In addition, Idaho Water Quality Standards state that all waters of the State of Idaho are protected for industrial and agricultural water supply, wildlife habitats, and aesthetics (IDAPA 58.01.02.100.03.b and c, 100.04, and 100.05). The permit must include any effluent limits necessary to meet the water quality standards.

The outfall is located immediately downstream of the confluence with the Moyie River. This section of Kootenai River supports populations of white sturgeon and burbot. Burbot in this river system is currently healthy but was nearing extinction approximately 15 years ago. For more information on the outfall see section 2.1.6 in this document. Section 2.2.1 of this fact sheet describes any receiving waterbody impairments.

The ambient background data used for this permit is from multiple sources, including the *2020 Surface Water Monitoring Report Kootenai River Nutrient Addition Project Permit #ID-002829-1* submitted by the Kootenai Tribe of Idaho. This report includes nutrient-focused data at multiple points on the Kootenai River between the Idaho and Montana border downstream to Bonners Ferry. The report data in Table 4 consists of 19 data points collected weekly from 5/11/2020 to 9/21/2020 at river kilometer 247.5 near Bonners Ferry (upstream of the Bonners Ferry POTW discharge). The downstream data collected at Bonners Ferry was used to incorporate the addition of the Moyie River and best represent the receiving water directly upstream of the proposed Moyie Springs POTW outfall. USGS collected selenium data in the Kootenai River near the Tribal Hatchery in 2018 which has been incorporated into the 2018/2020 Integrated Report.

The Kootenai River is protected for domestic water beneficial use, and this AU contains a secondary drinking water intake at Bonners Ferry, approximately 7.5 miles downstream from the Moyie Springs discharge. The proposed facility is a sequencing batch reactor (SBR) that can provide substantial treatment capabilities and has a design flow that is de minimis in comparison to the Kootenai River flow.[1] Additionally, the facility does not accept hauled septage or industrial waste which minimizes the likelihood that the facility will discharge metals or pollutants of concern for drinking water systems. Considering these factors, the facility is considered to not have a significant impact on the domestic water beneficial use.

[1] Moyie Springs POTW design flow (Qe) is 0.083 mgd (0.128 cfs) and the Kootenai River 30Q10 critical flow (Qs) is 4,615 cfs. $\%\ of\ River\ Flow = \mathrm{Qe}/(\mathrm{Qe}+\mathrm{Qs}) \times 100\% = 0.128\mathrm{cfs}/(0.128\mathrm{cfs}+4{,}615\mathrm{cfs}) \times 100\% = 0.003\%$

Table 4. Ambient background data.

Parameter	Units	Percentile	Value	Source (dates)
Temperature	°C	95th	15.6	2011 Bonners Ferry NPDES Fact Sheet (May 2002 - November 2004)
		Max	16.4	USGS Gauge #12308000 7/8/2019
pH	Standard units	95th	8	2011 Bonners Ferry NPDES Fact Sheet (May 2002 - November 2004)
E.coli	#/100mL	Max recorded	3	DEQ – Single sample collected on 7/2/2014
Ammonia, Total as N	µg/L	90th	5.68	2020 Nutrient Injection Project report
Phosphorus, Total as P	µg/L	90th	11.8	2020 Nutrient Injection Project report
Nitrogen, Total as N	µg/L	90th	401.4	2020 Nutrient Injection Project report
Selenium	µg/L	Max recorded	0.99	USGS 2018

2.2.1 Water Quality Impairments

Water bodies not supporting existing or designated beneficial uses must be identified as water quality limited, and a total maximum daily load (TMDL) must be prepared for those pollutants causing impairment (IDAPA 58.01.02.055.02). A central purpose of TMDLs is to establish wasteload allocations (WLAs) for point source discharges, which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limits that are consistent with the assumptions and requirements of WLAs that have been assigned to the discharge in an EPA-approved TMDL IDAPA 58.01.25.06.vii(2)).

The Moyie Springs POTW discharges into the Kootenai River (AU) ID17010104PN029_08. EPA-approved *Assessment of Water Quality in Kootenai River and Moyie River Subbasins (TMDL) (2006)* and *Assessment of Water Quality in Kootenai River and Moyie River Subbasins 2019 Temperature TMDL Hydrologic Unit Code 17010104 (2019)* address temperature impairment in the Lower Kootenai Subbasin but only sets TMDLs on upstream tributaries for the main stem Kootenai and Moyie Rivers, and determines restoring natural shade conditions as the primary goal to meet temperature criteria in the subbasin. At this time no TMDL exists for the Kootenai River at the discharge point. The 2018/2020 Integrated Report lists this AU as category 5, which means it still needs a TMDL. The permit requires temperature monitoring to develop robust temperature data sets for future assessments.

2.2.2 Critical Conditions

The low flow conditions of a water body are used to determine water quality-based effluent limits (WQBELs). In general, the WQS require that WQBELs be based on low flow design conditions (see IDAPA 58.01.02.210.03) as defined in Table 5. The 1Q10 represents the lowest one day flow with a recurrence frequency of once in 10 years while the 1B3 is biologically based

and indicates an allowable exceedance of once every three years (IDAPA 58.01.02.210.03.b.i). The 7Q10 represents lowest average seven consecutive day flow with a recurrence frequency of once in 10 years (IDAPA 58.01.02.210.03.b.iii). The 30Q5 represents the lowest average 30 consecutive day flow with a recurrence frequency of once in five years. The harmonic mean is a long-term mean flow value calculated by dividing the number of daily flow measurements by the sum of the reciprocals of the flows (IDAPA 58.01.02.210.03.b.v).

For this permit, DEQ used critical low flows downstream of the discharge from the USGS gage station # 12308000 KOOTENAI RIVER BEL MOYIE RIVER NR BONNERS FERRY ID, which is located approximately 1.3 miles downstream of the proposed outfall. USGS collected data at this site from September 2010 through 2021. USGS's SWToolbox program was used to calculate the critical low flows using data from 9/1/2010 through 3/18/2021. The estimated low flows are presented in Table 5.

Table 5. Low flow design conditions.

Criteria	Flow Condition	Critical Flow (cfs)
Acute aquatic life	1Q10 or 1B3	4529.5
Chronic aquatic life	7Q10 or 4B3	4614.5
Non-carcinogenic human health criteria	30Q5	4769.2
Carcinogenic human health criteria	harmonic mean flow	10079.5
Ammonia, Total as N	30Q5	4769.2

2.3 Pollutants of Concern

DEQ may identify pollutants of concern (POC) for the discharge based on, but not limited to, those which:

- Have a technology-based limit (TBEL)
- Have an assigned WLA from a TMDL
- Had an effluent limit in the previous permit
- Are present in the effluent monitoring data reported in the application, DMRs, or special studies
- Are expected to be in the discharge based on the nature of the discharge
- Are impairing the beneficial uses of the receiving water

To determine POCs for further analysis, DEQ evaluated all pertinent and available information such as the permit application and TMDL. The wastewater treatment process for this facility includes a sequencing batch rector and disinfection by UV. Pollutants expected in the discharge are:

- TSS
- BOD5
- E. coli bacteria
- pH
- Temperature
- Total Ammonia (as N)
- Copper

3 Effluent Limits and Monitoring

Table 6 presents the effluent limits and monitoring requirements in the 2022 permit. Monitoring and reporting of all parameters in Table 6 is required beginning on the effective date of the permit. However, DEQ has determined that because completion of facility construction is scheduled to coincide with the effective date of this permit it is appropriate to provide 90 days to optimize facility operations before limits are applied. 40 CFR 122.29(d)(4) provides a start-up period for new sources that is not to exceed 90 days and is incorporated by reference at IDAPA 58.01.25.003.02. Effluent limits in the 2022 permit will become effective 90 days after the effective date of the permit.

Table 6. Draft 2022 Permit - Effluent Limits and Monitoring Requirements

Parameter	Units	Effluent Limits					Monitoring Requirements			Reporting Frequency (DMR Months)
		Average Monthly	Average Weekly	Monthly Geometric Mean	Maximum Daily Average	Maximum Daily	Sample Location	Sample Type	Sample Frequency	
Biochemical Oxygen Demand (BOD_5)	mg/L	30	45	—	—	—	Influent and Effluent	Grab[a,g]	2/month	Monthly
	lb/day	20	31	—	—	—	Effluent	Calculation[b]		
BOD_5 Percent Removal	%	85 (min.)	—	—	—	—	—	Calculation[c]	1/month	Monthly
Total Suspended Solids (TSS)	mg/L	30	45	—	—	—	Influent and Effluent	Grab[a,g]	2/month	Monthly
	lb/day	20	31	—	—	—	Effluent	Calculation[b]		
TSS Percent Removal	%	85 (min.)	—	—	—	—	—	Calculation[c]	1/month	Monthly
E. coli[d]	#/100ml	—	—	126[e]	—	Report[f]	Effluent	Grab[g]	5/month	Monthly
pH[d]	s.u.	6.5 – 9.0					Effluent	Grab[g]	2/week	Monthly
Flow	mgd	Report	—	—	Report	—	Effluent	Recorded	Continuous[h, i]	Monthly
Temperature	°C		Report (Monthly average, Instantaneous max)				Effluent	Recorded	Continuous[h, i]	Monthly
Ammonia, total (as N)	mg/L	Report	—	—	—	—	Effluent	Grab[a,g]	2/month	Monthly
Total Phosphorus (as P)	mg/L	Report	—	—	—	—	Effluent	Grab[a,g]	1/month	Monthly

Total Nitrogen (as N)	mg/L	Report	—	—	—	—	Effluent	Grab[a,g]	1/month	Monthly
Total Dissolved Phosphorus (TDP)	mg/L	Report	—	—	—	—	Effluent	Grab[a,g]	1/quarter	Quarterly[i] (March, June, Sept, Dec)
Soluble Reactive Phosphorus (SRP)	mg/L	Report	—	—	—	—	Effluent	Grab[a,g]	1/quarter	Quarterly[i] (March, June, Sept, Dec)
Total Copper	µg/L	Report	—	—	—	—	Effluent	Grab[a,g]	1/quarter	Quarterly[i] (March, June, Sept, Dec)

a. 8-hour composites samples or grab samples for the effluent are acceptable because the equalization basin effectively provides a compositing volume, enabling a single grab to represent average of daily concentrations.
b. Loading (lb/day) is calculated by multiplying the concentration (mg/L) by the corresponding flow (mgd) for the day of sampling by a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the NPDES Self-Monitoring System User Guide (EPA 833-B-85-100, March 1985).
c. Percent Removal. The monthly average percent removal must be calculated from the arithmetic mean of the influent values and the arithmetic mean of the effluent values for that month using the following equation: (average monthly influent concentration – average monthly effluent concentration) ÷ average monthly influent concentration x 100. Influent and effluent samples must be taken over approximately the same time period.
d. Exceedance of a maximum daily limit, instantaneous maximum limit, or instantaneous minimum limit for this parameter requires 24-hour reporting in accordance with 2.2.7 of the permit. For *E. coli*, the maximum daily threshold that triggers 24-hour reporting is 406 organisms/100mL. Please see section 2.2.7 of the permit for additional 24-hour reporting requirements.
e. Geometric mean of five or more samples collected 3-7 days apart over a calendar month.
f. Idaho's water quality standards for primary contact recreation include a single sample value of 406 organisms/100 mL. Exceedance of this value indicates likely exceedance of the 126 organisms/100 mL average monthly effluent limit; If this value is exceeded at any point within the month, the facility should consider collecting more than the 5 samples per month required in this permit to determine compliance with the monthly geometric mean according to IDAPA 58.01.02.251.01.a.
g. A grab sample is an individual sample collected over a 15-minute period or less.
h. Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The time interval for the associated data logger must be no greater than 30 minutes. DEQ acknowledges that uninterrupted data collection is not guaranteed due to vandalism, theft, damage, disturbance, power interruption, etc. In the event of equipment failure or loss, the permittee must notify DEQ and deploy new equipment to minimize interruption of data collection. If new equipment cannot be immediately deployed, the permittee must monitor grab measurements daily between 8 a.m. and 5 p.m. or describe frequency when continuous monitoring is not possible until continuous monitoring equipment is redeployed.
i. Quarters are defined as: January 1-March 31; April 1-June 30; July 1-September 30; and October 1-December 31. Reporting for quarterly samples must occur on the last DMR month of the quarter.

3.1 Basis for Effluent Limits

Regulations require that effluent limits in an IPDES permit must be either technology-based or water quality-based.

TBELs are set according to the level of treatment that is achievable using available technology. TBELs are based upon the treatment processes used to reduce specific pollutants. TBELs are set by the EPA and published as a regulation. DEQ may develop a TBEL on a case-by-case basis (40 CFR 125.3, IDAPA 58.01.25.302, and IDAPA 58.01.25.303).

WQBELs are calculated so the effluent will comply with the Surface Water Quality Standards (IDAPA 58.01.02) or the National Toxics Rule (40 CFR 131.36) applicable to the receiving water.

DEQ must apply the most stringent of the TBEL and WQBEL limits to each POC (IDAPA 58.01.25.302.06). These limits are described below.

3.2 Technology-Based Effluent Limits

IDAPA 58.01.25.302 requires that IPDES permits include applicable TBELs and standards, while 40 CFR 125.3(a)(1) states that TBELs for POTWs must be based on secondary treatment standards or as specified in 40 CFR 133. The following section explains secondary treatment effluent limits for the conventional pollutants discharged by POTWs: 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH. These effluent limits are given in 40 CFR 133 and are outlined in Table 7.

Table 7. Secondary treatment effluent limits (40 CFR § 133).

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.	

In addition, Idaho rules and federal regulations include special considerations to allow treatment equivalent to secondary (TES) for treatment facilities with waste stabilization ponds (lagoons) and trickling filters. The Moyie Springs POTW does not qualify for equivalent to secondary treatment because it does not utilize waste stabilization ponds (lagoons) and trickling filters. Additionally, the facility as designed is capable of meeting all necessary secondary standards.

3.2.1 Mass-Based Limits

IDAPA 58.01.25.303.06 requires that effluent limits be expressed in terms of mass, except under certain conditions. IDAPA 58.01.25.303.02 requires that effluent limits for POTWs be calculated based on the design flow of the facility. The mass-based limits are expressed in pounds per day and are calculated as follows:

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

Since the design flow for this facility is 0.083 mgd, the technology-based mass limits for the following parameters are as follows:

BOD_5

Average Monthly Limit = 30 mg/L × 0.083 mgd × 8.34 = 20.7 lb/day

Average Weekly Limit = 45 mg/L × 0.083 mgd × 8.34 = 31.1 lb/day

TSS

Average Monthly Limit = 30 mg/l × 0.083 mgd × 8.34 = 20.7 lb/day

Average Weekly Limit = 45 mg/l × 0.083mgd × 8.34 = 31.1 lb/day

3.3 Water Quality-Based Effluent Limits

3.3.1 Statutory and Regulatory Basis

Section 301(b)(1)(C) of the Clean Water Act (CWA) requires the development of limits in permits necessary to meet WQS. The IPDES regulation IDAPA 58.01.25.302.06 implementing Section 301(b)(1)(C) of the CWA requires that permits include limits for all pollutants or parameters that are or may be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any WQS including narrative criteria for water quality. Effluent limits must also meet the applicable water quality requirements of affected States other than the State in which the discharge originates, which may include downstream States (IDAPA 58.01.25.103.03, IDAPA 58.01.25.302.06).

The regulations require the permitting authority to make this evaluation using procedures that account for existing controls on point and non-point sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water (IDAPA 58.01.25.302.06.a.ii). The limits must be stringent enough to ensure that WQS are met and must be consistent with any available TMDL WLA for the discharge (IDAPA 58.01.25.302.06.a.vii). If there are no approved TMDLs that specify WLAs for this discharge, all of the WQBELs are calculated directly from the applicable WQS.

3.3.2 Reasonable Potential Analysis (RPA) and Need for Water Quality-Based Effluent Limits

DEQ uses the process described in the *Effluent Limit Development Guidance* (DEQ 2017) to determine whether there is reasonable potential for the discharge to cause or contribute to an exceedance of water quality criteria (WQC). To determine if there is reasonable potential for a given pollutant, DEQ compares the maximum projected receiving water concentration to the WQC for that pollutant. If the projected receiving water concentration exceeds the criterion, there is reasonable potential, and a WQBEL must be included in the permit.

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

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 (IDAPA 58.01.02.060). 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 draft 2022 permit does not authorize a mixing zone for any pollutants because the facility does not have reasonable potential to exceed water quality at end of pipe for any pollutants of concern as described in the following section.

3.3.3 Reasonable Potential and Water Quality-Based Effluent Limits

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

3.3.3.1 Ammonia, Total as N

Ammonia criteria are based on a formula that 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, the criteria become more stringent as pH and temperature increase. The table below details the equations used to determine WQC for ammonia. Conservative estimates for temperature and pH were used to calculate ammonia WQC in Table 8 below due to lack of receiving water data upstream of the outfall. The 2022 permit requires the permittee to collect this data for future permit development.

Table 8. Ammonia criteria.

Total ammonia nitrogen criteria (mg N/L):
Annual Basis
Based on IDAPA 58.01.02

INPUT	
1. Receiving Water Temperature (deg C):	20.0
2. Receiving Water pH:	8.00
3. Is the receiving water a cold water designated use?	Yes
4. Are non-salmonid early life stages present or absent?	Present
OUTPUT	
Total ammonia nitrogen criteria (mg N/L):	
Acute Criterion (CMC)	**5.62**
Chronic Criterion (CCC)	**1.71**

Acute Criteria Equation: Cold Water

$$CMC = \frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}$$

Acute Criteria Equation: Warm Water

$$CMC = \frac{0.411}{1+10^{7.204-pH}} + \frac{58.4}{1+10^{pH-7.204}}$$

Chronic Criteria: Cold Water, Early Life Stages Present

$$CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) \bullet MIN(2.85, 1.45 \cdot 10^{0.028(25-T)})$$

Chronic Criteria: Cold Water, Early Life Stages Absent

$$CCC = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) \bullet 1.45 \cdot 10^{0.028(25-T)})$$

Because this facility has no prior permit, effluent data is not available to perform a reasonable potential analysis. During this permit cycle the City will be required to monitor for ammonia.

3.3.3.2 E. coli

The Idaho WQS states that waters of the State of Idaho that are designated for recreation (primary or secondary) are not to contain *E. coli* bacteria in concentrations exceeding a geometric mean of 126 organisms per 100 ml based on a minimum of five samples taken every three to seven days over a 30-day period. A mixing zone is not appropriate for bacteria for waters designated for contact recreation. Therefore, the draft permit contains a monthly geometric mean effluent limit for *E. coli* of 126 organisms per 100 ml (IDAPA 58.01.02.251.01.a.).

The Idaho WQS also state that a water sample that exceeds certain "single sample maximum" values indicate a likely exceedance of the geometric mean criterion. For waters designated for primary contact recreation, the "single sample maximum" value is 406 organisms per 100 mL (IDAPA 58.01.02.251.01.b.ii.). For waters designated only for secondary contact recreation the "single sample maximum" value is 576 organisms per 100 mL (IDAPA 58.01.02.251.01.b.i.). When a single sample maximum, is exceeded, additional samples should be taken to assess compliance with the geometric mean criterion.

Monitoring of the effluent five times per month will ensure compliance with the criterion can be assessed. If the single sample maximum is exceeded, the permittee may choose to monitor more frequently than the permit requires, ensuring adequate disinfection and compliance with permit effluent limits exists.

Regulations at IDAPA 58.01.25.303.04 require that effluent limits for continuous discharges from POTWs be expressed as average monthly and average weekly limits, unless impracticable. Additionally, the terms "average monthly limit" and "average weekly limit" are defined in IDAPA 58.01.25.010.06 and 07 respectively as being arithmetic (as opposed to geometric) averages. It is impracticable to properly implement a 30-day geometric mean criterion in a permit using monthly and weekly arithmetic average limits. The geometric mean of a given data set is equal to the arithmetic mean of that data set if and only if all the values in that data set are equal. Otherwise, the geometric mean is always less than the arithmetic mean. Therefore, the draft permit monthly effluent limit is a geometric mean for *E. coli* of 126 organisms per 100 ml.

3.3.3.3 pH

The Idaho WQS at IDAPA 58.01.02.250.01.a, require pH values of the receiving water to be within the range of 6.5 to 9.0. Mixing zones are generally not granted for pH; therefore, the most stringent WQC must be met before the effluent is discharged to the receiving water.

3.3.3.4 Temperature

Segments of the Kootenai River are currently listed as not supporting its beneficial uses of cold water aquatic life and salmonid spawning due to temperature excursions above water quality criteria for those uses. TMDL development has been completed and implementation is occurring on some tributaries of the Moyie and Kootenai rivers (DEQ 2006, 2014, 2019). The segment of the Kootenai River [ID17010104PN029_08] near Moyie Springs is on Idaho's 303(d) list, which identifies this water body does not have a TMDL but is listed as impaired and is in a watershed in need of further TMDL development.

The 2022 permit will require continuous effluent and upstream temperature monitoring to gather necessary data to support TMDL and future permit development. Temperature information for this stretch of river is sparce and temperature data associated with facility effluent does not exist. The effect of proposed treatment upgrades and new discharge location are unknown. Given the relatively small amount of effluent compared to the large river volume and the expected use of a diffuser, the effluent temperature is expected to dilute almost immediately upon discharge. Monitoring during this permit will allow for these data gaps to be filled.

3.3.1 Selenium, Mercury, and other Metals

The 2018/2020 Integrated Report lists AU [ID17010104PN031_08], which is the AU directly upstream of the confluence of the Moyie River and Kootenai River listed as impaired for selenium. In recent years, selenium and mercury concentrations in the Kootenai River have been a growing concern due to upstream mining operations (Mebane, 2019). Idaho WQS for selenium and mercury contain numeric criteria for concentrations in fish tissue. In a collaborative effort between Idaho Department of Fish and Game, Kootenai Tribe of Idaho, EPA, and USGS, Kootenai River fish tissue data has been collected.

Because the Moyie Springs POTW treats domestic waste and does not accept hauled septage or industrial waste, most metals are not pollutants of concern for this facility. However, because copper can be highly toxic to aquatic organisms, and many anthropogenic activities can potentially lead to elevated levels of copper, it is considered a pollutant of concern in this permit, and effluent monitoring is required.

WQC for copper utilize the Biotic Ligand Model (BLM) (IDAPA 58.01.02.210.03.c.v). In 2016, DEQ collected data necessary to implement the BLM at multiple sites around the state. One of these monitoring sites was in the Kootenai River, approximately 8.8 miles downstream of Outfall 001. The details and results for this monitoring are included in DEQ's *Statewide Monitoring for Inputs to the Copper Biotic Ligand Model* (DEQ 2017d). The findings revealed Kootenai River WQC of 7.33µg/L chronic and 11.8 µg/L acute. The permit requires quarterly effluent copper monitoring to assess the facility's copper load to the river.

3.3.2 Nutrients

The Kootenai River is nutrient limited due to major physical changes. This oligotrophication has been associated with declines in native fish populations. To address this issue, EPA issued an NPDES permit [#ID0028291] to Idaho Department of Fish and Game in 2006 for the Kootenai River Nutrient Injection Site located upstream from Moyie Springs POTW discharge, near the Idaho and Montana border. This permit was transferred to the Kootenai Tribe of Idaho in August 2018. Because this portion of the river is considered nutrient deficient, the potential additional load of nutrients associated with this permit is considered a potential benefit to the river and is therefore a non-degrading discharge.

Nutrient monitoring of the effluent is necessary because the Kootenai Tribe of Idaho must account for the nutrient contributions to the river system from point sources as part of their nutrient injection program. To accurately document the nutrient contribution from the Moyie Springs POTW to the Kootenai River, the 2022 permit requires monthly effluent monitoring of total phosphorus and total nitrogen. Additionally, the permit includes monitoring quarterly for total dissolved phosphorus and soluble reactive phosphorus.

3.4 Narrative Criteria

DEQ must incorporate the narrative criteria described in IDAPA 58.01.02.200 when it determines permit limits and conditions. Narrative WQC limit the toxic, radioactive, or other deleterious material concentrations that the facility may discharge which have the potential to

adversely affect designated uses, cause acute or chronic toxicity to biota, impair aesthetic attributes, or adversely affect human health.

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

3.5 Antidegradation

DEQ's antidegradation policy provides three levels of protection to water bodies in Idaho subject to Clean Water Act (CWA) jurisdiction (IDAPA 58.01.02.051).

- Tier I of antidegradation protection is designed to ensure that existing uses and the water quality necessary to protect those uses is maintained and protected (IDAPA 58.01.02.051.01; 58.01.02.052.01). A Tier I review is performed for all new or reissued permits or licenses (IDAPA 58.01.02.052.07).
- Tier II protection applies to any water bodies considered to be high quality waters (where the water quality exceeds levels necessary to support propagation of fish, shellfish, wildlife, and recreation in and on the water) and provides that water quality will be maintained and protected unless allowing for lower water quality is deemed by the state as necessary to accommodate important economic or social development in the area. In allowing any lowering of water quality DEQ must ensure adequate water quality to protect existing uses fully and must assure that there will be achieved the highest statutory and regulatory requirements for all new and existing point sources (IDAPA 58.01.02.051.02; 58.01.02.052.08).
- Tier III protection applies to water bodies that have been designated by the Idaho Legislature as outstanding national resource waters and provides that water quality is to be maintained and protected (IDAPA 58.01.02.051.03; 58.01.02.052.09).

DEQ employs a water body by water body approach to implementing Idaho's antidegradation policy. This approach means that any water body fully supporting its beneficial uses will be considered high quality (IDAPA 58.01.02.052.05.a). Any water body not fully supporting its beneficial uses will be provided Tier I protection for that use unless specific circumstances warranting Tier II protection are met (IDAPA 58.01.02.052.05.c). The most recent federally approved Integrated Report and supporting data are used to determine support status and the tier of protection (IDAPA 58.01.02.052.05).

3.5.1 Protection and Maintenance of Existing Uses (Tier I Protection)

A Tier I review is performed for all new or reissued permits or licenses, applies to all waters subject to the jurisdiction of the Clean Water Act, and requires demonstration that existing uses and the level of water quality necessary to protect existing uses shall be maintained and protected. In order to protect and maintain existing and designated beneficial uses, a permitted discharge must comply with narrative and numeric criteria of the Idaho WQS, as well as other provisions of the WQS.

Water bodies not supporting existing or designated beneficial uses must be identified as water quality-limited, and a TMDL must be prepared for those pollutants causing impairment. A central purpose of TMDLs is to establish wasteload allocations for point source discharges,

which are set at levels designed to help restore the water body to a condition that supports existing and designated beneficial uses. Discharge permits must contain limits that are consistent with wasteload allocations in the approved TMDL.

Prior to the development of the TMDL, the WQS require the application of the antidegradation policy and implementation provisions to maintain and protect uses (IDAPA 58.01.02.055.04).

The effluent limits and associated requirements contained in the 2022 permit are set at levels that ensure compliance with the narrative and numeric criteria in the WQS. Therefore, DEQ has determined the permit will protect and maintain existing and designated beneficial uses in the Kootenai River in compliance with the Tier I provisions of Idaho's WQS (IDAPA 58.01.02.051.01 and 58.01.02.052.07).

3.5.2 High-Quality Waters (Tier II Protection)

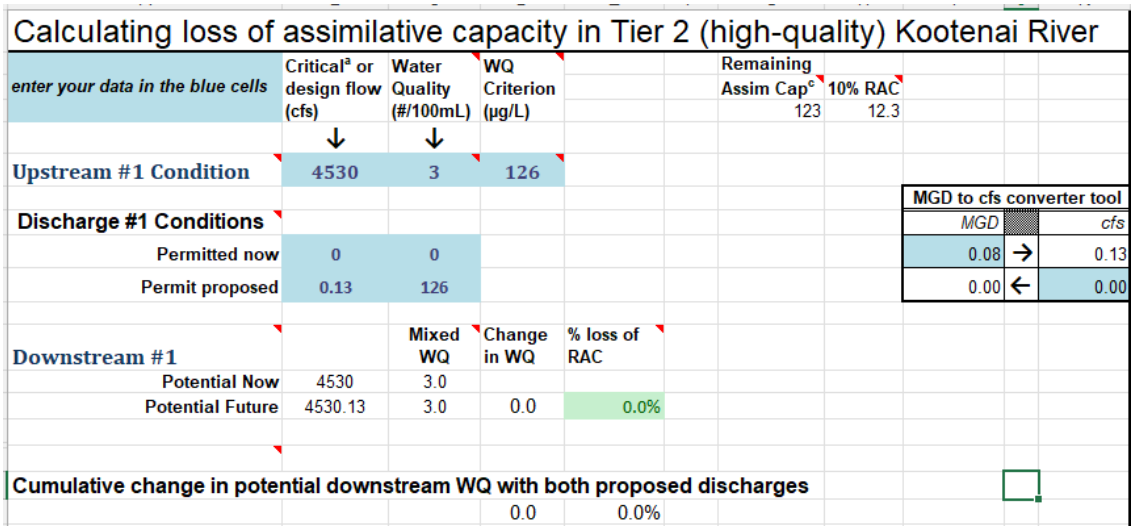
The Kootenai River is considered high quality for primary contact recreation. As such, the water quality relevant to primary contact recreation of the Kootenai River must be maintained and protected, unless a lowering of water quality is insignificant or is deemed necessary to accommodate important social or economic development (IDAPA 58.01.02.052.08).

To determine whether degradation will occur, DEQ must evaluate how the discharge will affect water quality for each pollutant that is relevant to primary contact recreation uses of the Kootenai River (IDAPA 58.01.02.052.06); these include *E. coli* and nutrients that may potentially contribute to nuisance/toxic algae**.** Effluent limits are set in the draft 2022 permit for *E. coli*

The effect on water quality is determined by looking at the difference in water quality that would result from the activity or discharge as proposed in the 2022 IPDES permit (IDAPA 58.01.02.052.06.a). The previously unpermitted facility accepted the same influent as the proposed facility; however, the previous facility provided less treatment capabilities and discharged to a sedimentation pond adjacent to the river that could flow overland to the river during large precipitation events.

To determine if the proposed discharge potentially degrades receiving water quality it is necessary to examine each relevant parameter separately.

- **E. coli**: The new system will employ a UV disinfection system after the equalization basin and before discharge into the Kootenai River. As a conservative assumption, this analysis considers that the previous facility contributed no E. coli, and the proposed facility may contribute up to 126#/100ml at design flow during 1Q10 receiving water flows. As seen below in Figure 1, due to the large river flow and small discharge volume no loss in assimilative capacity potential exists.



Calculating loss of assimilative capacity in Tier 2 (high-quality) Kootenai River

enter your data in the blue cells	Critical[a] or design flow (cfs)	Water Quality (#/100mL)	WQ Criterion (µg/L)		Remaining Assim Cap[c]	10% RAC
	↓	↓			123	12.3
Upstream #1 Condition	4530	3	126			
Discharge #1 Conditions						
Permitted now	0	0				
Permit proposed	0.13	126				
Downstream #1		Mixed WQ	Change in WQ	% loss of RAC		
Potential Now	4530	3.0				
Potential Future	4530.13	3.0	0.0	0.0%		

MGD to cfs converter tool		
MGD		*cfs*
0.08	→	0.13
0.00	←	0.00

Cumulative change in potential downstream WQ with both proposed discharges	
0.0	0.0%

Figure 1. E.coli Assimilative Capacity Calculation

- **Nutrients:** Because this portion of the river is considered nutrient deficient, the potential additional load of nutrients associated with this permit is considered a potential benefit to the river and is therefore a non-degrading discharge.

3.6 Antibacksliding

Section 402(o) of the CWA and regulations at IDAPA 58.01.25.200 generally prohibit the renewal, reissuance, or modification of an existing IPDES permit that contains effluent limits, permit conditions, or standards that are less stringent than those established in the existing permit (i.e., antibacksliding) but provides limited exceptions. For explanation of the antibacksliding exceptions refer to section 4.1 of the Effluent Limit Development Guidance (DEQ 2017).

The City does not have a previous permit; therefore, antibacksliding does not apply.

4 Monitoring Requirements

Idaho regulations IDAPA 58.01.02 and 58.01.25 require that monitoring be included in permits to determine compliance with effluent limits and other permit restrictions. Monitoring may also be required to gather data to assess the need for future effluent limits or to monitor effluent impacts on receiving water quality. Permittees are responsible for conducting the monitoring and reporting the results on monthly DMRs and in annual reports.

4.1 Influent Monitoring

Flow, TSS, and BOD_5 monitoring requirements are listed below in Table 9. Permittees have the option of taking more frequent samples than are required under the permit. These samples must be used for averaging if they are conducted using the EPA-approved test methods (generally found in 40 CFR 136) or as specified in the permit.

Table 9. Influent monitoring requirements.

Parameter	Monitoring Period	Units	Sample Frequency	Sample Type	Report	Reporting Period (DMR Months)
Flow	01/01 to 12/31	mgd	Continuous[a,b]	Recording	Monthly average, Max daily average	Monthly
BOD_5	01/01 to 12/31	mg/L	2/month	8-hour composite[c]	Monthly average	Monthly
TSS	01/01 to 12/31	mg/L	2/month	8-hour composite[c]	Monthly average	Monthly

a. Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The time interval for the associated data logger must be no greater than 30 minutes.

b. DEQ acknowledges that uninterrupted data collection is not guaranteed due to vandalism, theft, damage, disturbance, power interruption, etc. In the event of equipment failure or loss, the permittee must notify DEQ and deploy new equipment to minimize interruption of data collection. If new equipment cannot be immediately deployed, the permittee must monitor grab measurements daily between 8 a.m. and 5 p.m. or describe frequency when continuous monitoring is not possible until continuous monitoring equipment is redeployed

c. 8-hour composites in this permit must be collected between 9:00 a.m. and 5:00 p.m. comprised of at least 2 discrete aliquots with at least 4 hours between aliquots and be flow-proportional or time-proportional samples. If the permittee collects 3 or more discrete aliquots between 9:00 a.m. and 5:00 p.m. then there must be at least 3 hours between aliquots.

4.2 Additional Effluent Monitoring

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

Pollutants that must be monitored but do not have effluent limits are presented in Table 10. The sampling location must be after the last treatment unit and prior to discharge to the receiving water. The samples must be representative of the volume and nature of the monitored discharge. If no discharge occurs during the reporting period, "no discharge" shall be reported on the DMR.

Table 10. Additional Effluent Monitoring.

Parameter	Units	Sample Frequency	Sample Type	Report	Reporting Period (DMR Months)
Flow	mgd	Continuous[a,b]	Recording	Average monthly and instantaneous maximum	Monthly
Temperature	°C	Continuous[a,b]	Recording	Average monthly, instantaneous maximum	Monthly
Ammonia, total (as N)	mg/L	2/month	Grab[c,d]	Average monthly and max daily value	Monthly
Total Phosphorus (as P)	mg/L	1/month	Grab[c,d]	Average monthly and max daily value	Monthly
Total Nitrogen (as N)	mg/L	1/month	Grab[c,d]	Average monthly and max daily value	Monthly
Total Dissolved Phosphorus (TDP)	mg/L	1/quarter[e]	Grab[c,d]	Average monthly and max daily value	Quarterly (March, June, September, December)
Soluble Reactive Phosphorus (SRP)	mg/L	1/quarter[e]	Grab[c,d]	Average monthly and max daily value	
Total Copper	µg/L	1/quarter[e]	Grab[c,d]	Average monthly and max daily value	

a. Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The time interval for the associated data logger must be no greater than 30 minutes.
b. DEQ acknowledges that uninterrupted data collection is not guaranteed due to vandalism, theft, damage, disturbance, power interruption, etc. In the event of equipment failure or loss, the permittee must notify DEQ and deploy new equipment to minimize interruption of data collection. If new equipment cannot be immediately deployed, the permittee must monitor grab measurements daily between 8 a.m. and 5 p.m. or describe frequency when continuous monitoring is not possible until continuous monitoring equipment is redeployed
c. Grab samples are permitted in place of typical composites samples because the equalization basin utilized before disinfection will adequately represent daily effluent discharged throughout the day.
d. A grab sample is an individual sample collected over a 15-minute period or less.
e. Quarters are defined as: January 1-March 31; April 1-June 30; July 1-September 30; and October 1-December 31.

4.3 Receiving Water Monitoring

Table 11 and Table 12 present the receiving water monitoring requirements for the draft permit. Moyie Springs POTW must establish upstream receiving water monitoring at the locations included in Table 1 of the permit. Receiving water monitoring results must be submitted with the DMR and on the receiving water monitoring report spreadsheet submitted annually.

Table 11. Receiving water upstream monitoring requirements for the Kootenai River.

Parameter	Monitoring Period	Units	Monthly Average	Daily Maximum	Instantaneous Minimum	Instantaneous Maximum	Max Daily Average	Maximum Weekly Maximum Temperature (MWMT)	Sample Frequency	Sample Type	Reporting Period (DMR Months)
Temperature[a]	01/01 to 12/31	°C	—	Report	---	---	Report	Report	Continuous[b,c]	Recorded	---[d]
Flow[e,f]	01/01 to 12/31	cfs	Report	—	—	—	Report	---	Daily	Measured	Monthly
pH[g]	01/01 to 12/31	S.U.	---	---	Report	Report	---	---	1/quarter[h]	Grab[i]	Quarterly (March, June, Sept, Dec)
Ammonia, Total (as N)[j]	01/01 to 12/31	mg/L	Report	Report	---	---	---	---	1/quarter[h]	Grab[i]	

a. Upon approval from the DEQ Coeur d'Alene Regional Office, the permittee may report temperature data acquired from a third party if the permittee has access to the continuously recorded data set that is representative of upstream river temperature.
b. Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The time interval for the associated data logger must be no greater than 60 minutes.
c. DEQ acknowledges that uninterrupted data collection is not guaranteed due to vandalism, theft, damage, disturbance, power interruption, etc. In the event of equipment failure or loss, the permittee must notify DEQ and deploy new equipment to minimize interruption of data collection. If new equipment cannot be immediately deployed, the permittee must monitor grab measurements daily between 8 a.m. and 5 p.m. or describe frequency when continuous monitoring is not possible until continuous monitoring equipment is redeployed.
d. For continuously monitored parameters the permittee must submit, to DEQ, all monitoring results and sample collection dates electronically on an Excel spreadsheet. The Excel spreadsheet must be submitted annually by March 31st.
e. The permittee may report flow monitoring data recorded at USGS Gage Station #12308000, which is located downstream of Outfall 001. This flow date will represent the combined flows of the Kootenai and Moyie Rivers, which confluence is immediately upstream of the outfall.
f. If USGS or any third parties continue to monitor at USGS Gage Station #12308000 (KOOTENAI RIVER BEL MOYIE RIVER NR BONNERS FERRY ID), the permittee shall report the average monthly flow and maximum daily average for compliance. If the monitoring at this station is discontinued by other parties, the flow monitoring shall become the responsibility of the permittee. If the flow data generation becomes the responsibility of the permitee they must contact DEQ to discuss an alternate receiving water flow monitoring site.
g. pH must be analyzed within 15 minutes of sample collection.

h. Quarters are defined as: January 1-March 31; April 1-June 30; July 1-September 30; and October 1-December 31.
i. A grab sample is an individual sample collected over a 15-minute period or less.
j. Ammonia samples must be taken concurrently with pH samples.

The Moyie River joins the Kootenai River immediately upstream of Outfall 001. Because the two rivers do not have the opportunity to fully mix in between the confluence and the outfall, the permittee must monitor for ammonia and pH in both rivers upstream to get an accurate representation of the total ammonia contributed by the ambient receiving water.

Ammonia data was collected by USGS at site #12307750 on the lower Moyie River six times starting in September 2016 through April 2021. Out of the six testing events, one had a quantifiable value of 0.01 mg/L. The Moyie River is not expected to be a substantial source of ammonia or any other pollutants in comparison to the Kootenai River. DEQ is aware that sampling the Moyie River is a challenging endeavor that may not be possible at all times of the year. The permitee should work with the DEQ regional office personnel to determine the best possible sampling locations for both the Kootenai and Moyie Rivers. Without Moyie River data for pollutants DEQ will utilize only Kootenai River pollutant concentration data as a conservative assumption.

Table 12. Receiving water upstream monitoring requirements for the Moyie River.

Parameter	Monitoring Period	Units	Monthly Average	Daily Maximum	Instantaneous Minimum	Instantaneous Maximum	Max Daily Average	Maximum Weekly Maximum Temperature	Sample Frequency	Sample Type	Reporting Period
pH[a]	01/01 to 12/31	S.U.	---	---	Report	Report	---	---	1/quarter[b]	Grab[c]	Quarterly (March, June, Sept, Dec)
Ammonia, Total (as N)[d]	01/01 to 12/31	mg/L	Report	Report	---	---	---	---	1/quarter[b]	Grab[c]	
Temperature	01/01 to 12/31	°C	---	Report	---	---	Report	Report	Continuous[e,f]	Recorded	---[g]

a. pH must be analyzed within 15 minutes of sample collection.
b. Quarters are defined as: January 1-March 31; April 1-June 30; July 1-September 30; and October 1-December 31.
c. A grab sample is an individual sample collected over a 15-minute period or less.
d. Ammonia samples must be taken concurrently with pH samples.
e. Continuous means uninterrupted except for brief lengths of time for calibration, power failure, or unanticipated equipment repair or maintenance. The time interval for the associated data logger must be no greater than 60 minutes.
f. DEQ acknowledges that uninterrupted data collection is not guaranteed due to vandalism, theft, damage, disturbance, power interruption, etc. In the event of equipment failure or loss, the permittee must notify DEQ and deploy new equipment to minimize interruption of data collection. If new equipment cannot be immediately deployed, the permittee must monitor grab measurements daily between 8 a.m. and 5 p.m. or describe frequency when continuous monitoring is not possible until continuous monitoring equipment is redeployed.

g. For continuously monitored parameters the permittee must submit, to DEQ, all monitoring results and sample collection dates electronically on an Excel spreadsheet. The Excel spreadsheet must be submitted annually by March 31st.

4.4 Permit Renewal Monitoring

The permit renewal monitoring requires data collected to characterize the effect of the effluent on the Kootenai River. At a minimum, three samples of the final wastewater effluent for the parameters listed in Table 13 are required so that DEQ can assess the surface water impacts.

Table 13. Effluent monitoring required for all permit renewals.

Parameter	Units	Sample Type	Report
pH	s.u.	Grab	Minimum and maximum value
Flow	mgd	Continuous	Maximum daily value, average daily value, number of samples
Temperature	°C	Grab	
BOD_5	mg/L	Grab	Maximum daily value, average daily value, analytical method and ML or MDL
TSS	mg/L	Grab	
E. coli	#/100 mL	Grab	

The permittee must conduct one permit renewal monitoring scan of the effluent according to the following schedule:

- 2024: Third quarter: July - September
- 2025: Fourth quarter: October – December
- 2027: First quarter: January – March

This schedule spreads monitoring over the permit effective period, as well as captures a range of seasons.

5 Special Conditions

5.1 Nondomestic Waste Management

The permittee has nonsignificant, nondomestic (industrial/commercial) users, which are neither subject to the pretreatment standards in 40 CFR 405 through 471, nor meet any of the criteria of a significant industrial user (SIU) as specified in 40 CFR 403.3(v), and therefore, DEQ does not require an authorized pretreatment program. The permittee must ensure, through a sewer use ordinance, that pollutants from nondomestic wastes discharged to their system do not negatively impact system operation or pass through the wastewater treatment facility. The permittee must not authorize indirect discharges of pollutants that would inhibit, interfere with, or otherwise be incompatible with operation of the wastewater treatment works, including interference with the use or disposal of municipal sludge.

5.1.1 Spill Control Plan

The permittee shall develop and implement a plan for potential spills of any stored chemicals.

6 Standard Conditions

Section 4 of the permit contains standard regulatory language that must be included in all IPDES permits. DEQ bases the Standard Conditions on state and federal law and regulations. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.

6.1 Quality Assurance Project Plan

In accordance with IDAPA 58.01.25.300.05, permittees are required to develop procedures to ensure that the monitoring data submitted is accurate and explain data anomalies if they occur. The permittee is required to develop, maintain, and implement a plan for facility data gathering. The quality assurance project plan (QAPP) shall consist of standard operating procedures for collecting, handling, storing and shipping samples, laboratory analysis, and data reporting. The plan shall be retained on site and made available to DEQ upon request.

6.2 Operation and Maintenance Manual

The permit requires the City to properly operate and maintain all facilities and systems of conveyance, 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. The plan must be retained on site and made available to DEQ upon request.

6.3 Emergency Response Plan

The permittee must develop and implement an emergency response plan that identifies measures to protect public health and the environment. At a minimum, the plan must include mechanisms for the following:

1. Ensure that the permittee is aware (to the greatest extent possible) of all overflows from portions of the collection system over which the permittee has ownership or operational control as well as any unanticipated treatment unit bypass or upset that may exceed any effluent limit in the permit.
2. Ensure that reports of an overflow or of an unanticipated bypass or upset that may exceed any effluent limit in this permit are immediately dispatched to appropriate personnel for investigation and response.
3. Ensure immediate notification to DEQ of any noncompliance that may endanger public health or the environment and identify the public health district and other officials who will receive immediate notification for items that require 24-hour.
4. Ensure that appropriate personnel understand, are appropriately trained on, and follow the Emergency Response Plan; and
5. Provide emergency facility operation.

7 Compliance with other DEQ Rules

7.1 Operator's License

The permittee must meet the requirements and operator license levels listed in the wastewater rules at IDAPA 58.01.16.203 for the type(s) of operations at the facility.

7.2 Sludge/Biosolids

The permit includes sludge monitoring and reporting requirements. Sludge management and disposal activities at the facility are subject to the sewage sludge standards at IDAPA 58.01.25.380 and 40 CFR 503 and the requirements of Idaho's Wastewater Rules (IDAPA 58.01.16.480 and 650). Idaho's Wastewater Rules require a POTW to have the capability to process sludge accumulated on site in preparation for final disposal or reuse (IDAPA 58.01.16.480 and 58.01.16.650). Operations of these sludge processing, storage, and disposal activities must comply with the facility's sludge management plan and 40 CFR 503.

DEQ separates wastewater and sludge permitting for the purposes of regulating biosolids. DEQ may issue a sludge-only permit to each facility at a later date, as appropriate.

8 Permit Expiration or Modification

The permit will expire five years after the effective date.

DEQ may modify a permit before its expiration date only for causes specified in IDAPA58.01.25.201. A modification other than a minor modification requires preparing a draft permit that incorporates the proposed changes, preparing a fact sheet, and conducting a public review period. Only the permit conditions subject to the modification will be reopened when a permit is modified. All other conditions of the existing permit remain in effect. Modifying a permit does not change the expiration date of the original permit.

9 References for Text and Appendices

DEQ (Idaho Department of Environmental Quality). 2006. *The Kootenai River/Malad Subbasin Assessment and Total Maximum Daily Load Plan.* Boise, ID: DEQ *https://www2.deq.idaho.gov/admin/LEIA/api/document/download/11870*

DEQ (Idaho Department of Environmental Quality). 2014. *Assessment of Water Quality in Kootenai River and Moyie River Subbasins (TMDL) 2014 Temperature Addendum* - Boise, ID: DEQ *https://www2.deq.idaho.gov/admin/LEIA/api/document/download/11871*

DEQ (Idaho Department of Environmental Quality). 2016. *Water Body Assessment Guidance 3rd Edition* - Boise, ID: DEQ: *https://www2.deq.idaho.gov/admin/LEIA/api/document/download/4847*

DEQ (Idaho Department of Environmental Quality). 2019. *Assessment of Water Quality in Kootenai River and Moyie River Subbasins 2019 Temperature TMDL* - Boise, ID: DEQ *https://www2.deq.idaho.gov/admin/LEIA/api/document/download/11872*

DEQ (Idaho Department of Environmental Quality). 2020. *Idaho's 2018/2020 Integrated Report*. Boise, ID: DEQ. *https://www.deq.idaho.gov/water-quality/surface-water/monitoring-and-assessment/*

DEQ (Idaho Department of Environmental Quality). 2017a. *Effluent Limit Development Guidance*. Idaho Department of Environmental Quality. Boise, ID: DEQ *https://www2.deq.idaho.gov/admin/LEIA/api/document/download/4819*

DEQ (Idaho Department of Environmental Quality). 2017c. *Idaho Mixing Zone Implementation Guidance*. Idaho Department of Environmental Quality. Boise, ID: DEQ *https://www2.deq.idaho.gov/admin/LEIA/api/document/download/4832*

Mebane, C.A., and Schmidt, C.G., 2019, Selenium and Mercury in the Kootenai River, Montana and Idaho, 2018-2019: U.S. Geological Survey data release, https://doi.org/10.5066/P9YYVV7R.

Appendix A. Facility Maps/Process Schematics

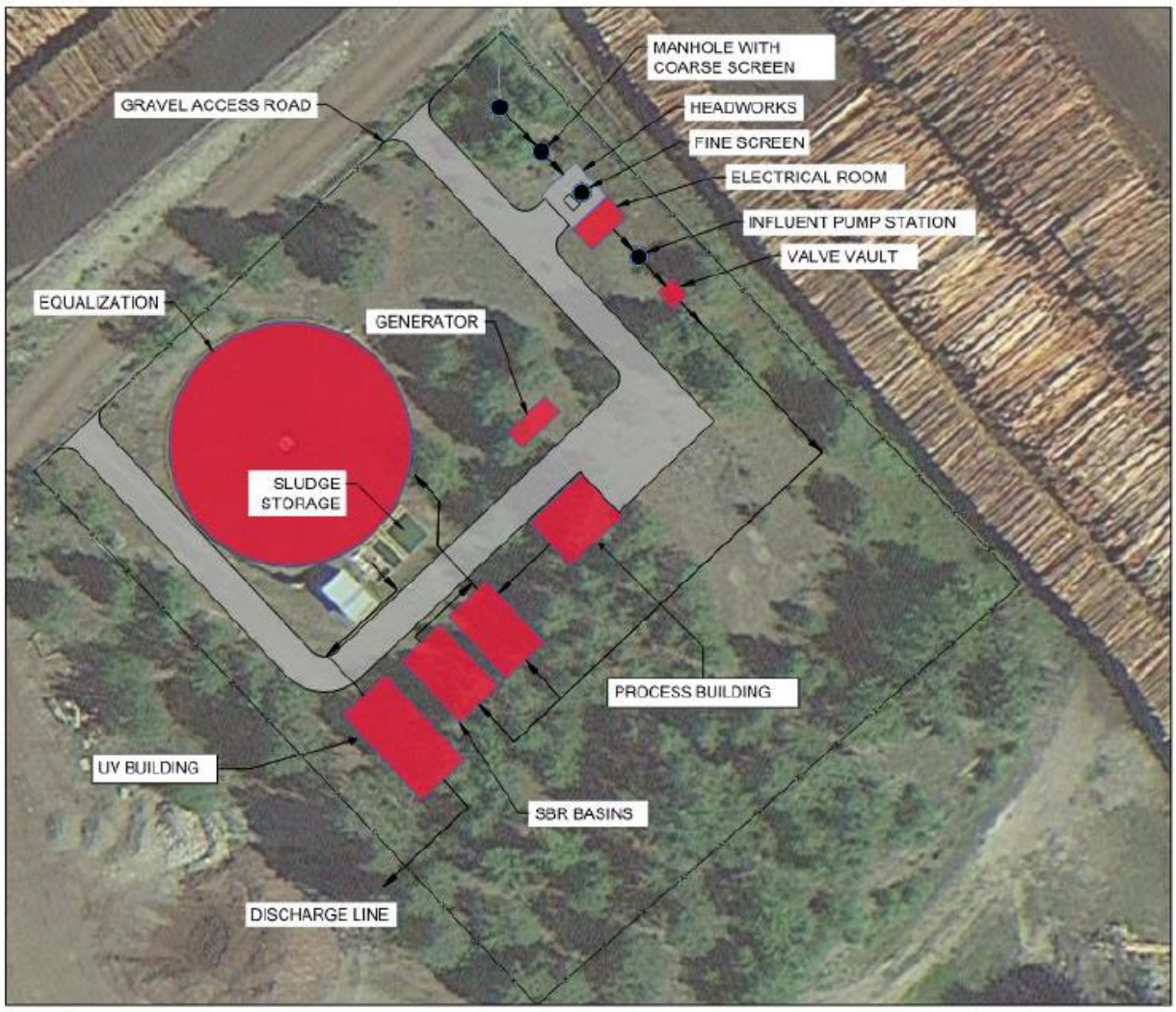


Figure 2. Moyie Springs POTW layout.

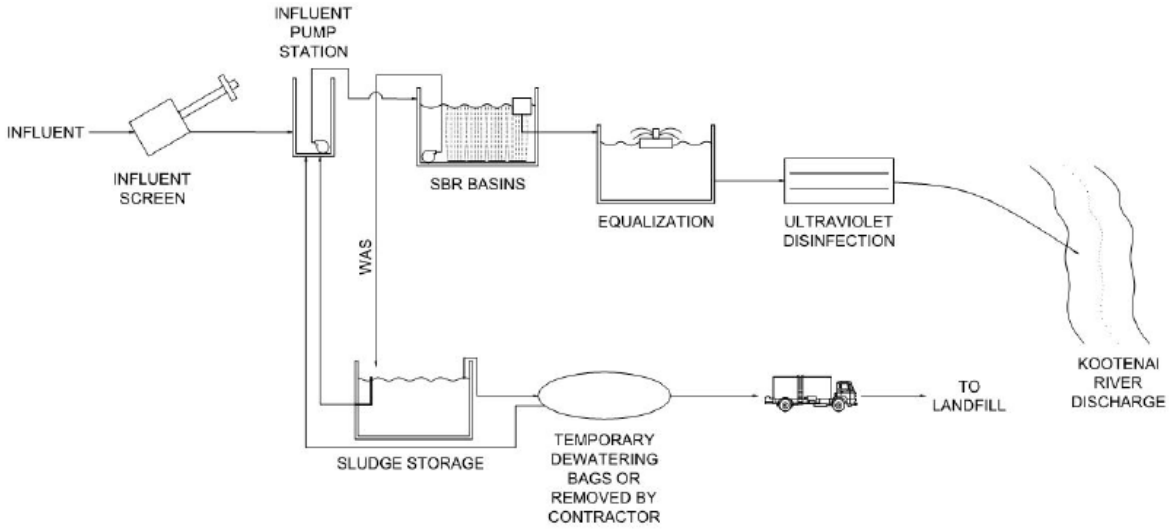


Figure 3. Moyie Springs POTW flow diagram.

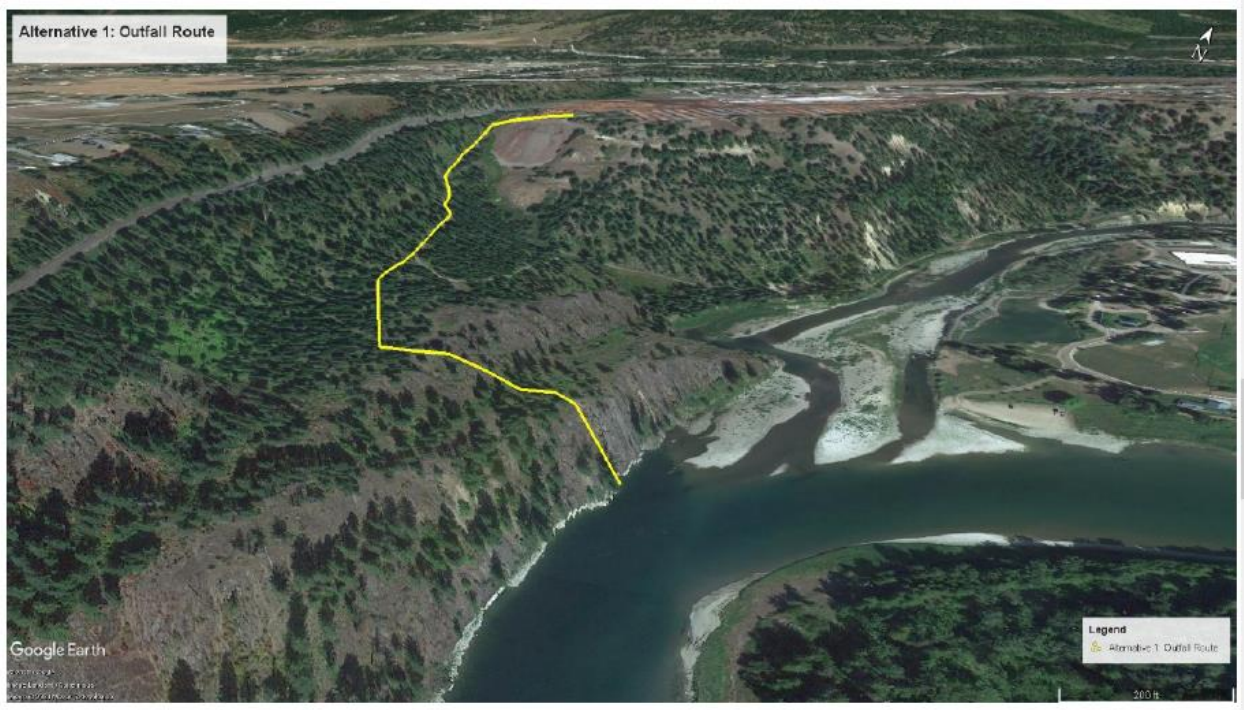


Figure 4. Moyie Springs POTW discharge route.

Appendix B. Technical Calculations

The results of the technical calculations are discussed above in sections 3.2 and 3.3 of the fact sheet.

A. Technology-Based Effluent Limits

The CWA requires POTWs to meet performance-based requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level, referred to as secondary treatment, which all POTWs were required to meet by July 1, 1977. The EPA has developed and promulgated secondary treatment effluent limits, which are found in 40 CFR 133. These TBELs apply to all municipal wastewater treatment facilities and identify the minimum level of effluent quality attainable by application of secondary treatment in terms of BOD_5, TSS, and pH.

The concentration and removal rate limits for BOD_5 and TSS are the technology-based effluent limits of 40 CFR 133.102. As explained below, DEQ has determined that more stringent WQBELs are necessary for pH, as well as E. coli, in order to ensure compliance with WQS.

B. Reasonable Potential and Water Quality-Based Effluent Limit Calculations

DEQ uses the process in the *Effluent Limit Development Guidance* (DEQ 2017) to determine reasonable potential. After characterizing the effluent and receiving water, DEQ compares the projected receiving water concentration after the effluent is discharged to the water quality criteria for the pollutant of concern. If the projected concentration exceeds the criterion, there is reasonable potential and an effluent limit is developed.

If DEQ chooses to authorize a mixing zone, the water quality criteria must still be met at the edge of the mixing zone. If after the analysis of the mixing zone, water quality criteria are not being met, the facility will receive an effluent limit that identifies both the size of the mixing zone and the final effluent limit.

Mass-Balance

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

$$C_d = \frac{(C_e Q_e) + \lfloor C_u (Q_u \times \%MZ) \rfloor}{Q_e + (Q_u \times \%MZ)}$$

Equation 1. Simple mass-balance equation.

Where:

C_d = downstream receiving water concentration	Calculated value
Q_e = critical effluent flow	From discharge flow data (design flow for POTW)
Q_u = critical upstream flow (1Q10 acute criterion, 7Q10 chronic, or harmonic mean)	From water quality standards

%MZ = percent of critical low flow provided by mixing zone	From mixing zone analysis
C_u = critical upstream pollutant concentration (90th to 95th percentile)	From receiving water data
C_e = critical effluent pollutant concentration	Calculated value using

A dilution factor (D) can be introduced to describe the allowable mixing. A dilution factor represents the ratio of the receiving water body low flow percentage (i.e., the low-flow design discharge conditions) to the effluent discharge volume and is expressed as:

$$Dilution\ Factor = D_f = \frac{(Q_S \times P + Q_e)}{Q_e} = \frac{(Q_s \times P)}{Q_e} + 1$$

Equation 2. Dilution factor calculation.

Where: D_f = Dilution factor

Qs = Receiving water low-flow condition (cfs)

P = Mixing zone percentage

Qe = Effluent discharge flow (cfs)

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

Critical Effluent Pollutant Concentration

When determining the projected receiving water concentration downstream of the effluent discharge, DEQ's *Effluent Limit Development Guidance* (DEQ 2017) recommends using the critical effluent pollutant concentration (C_e) in the mass balance calculation (see Equation 1). To determine the C_e DEQ has adopted EPA's statistical approach that accounts for day-to-day variability in effluent quality by identifying the number of samples, calculating the coefficient of variation (CV) (Equation 7, below), and selecting a reasonable potential multiplying factor (RPMF) from the tables in the *Effluent Limit Development Guidance* (DEQ 2017).

$$CV = \frac{Standard\ Deviation}{Mean}$$

Equation 3. CV calculation.

$$C_e = MOEC\ x\ RPMF$$

Equation 4. C_e calculation.

If the C_e exceeds water quality criteria then a reasonable potential analysis is conducted.

Reasonable Potential Analysis

The discharge has reasonable potential to cause or contribute to an exceedance of WQC, referred to as a reasonable potential to exceed (RPTE), if the critical concentration of the pollutant at the end of pipe exceeds the most stringent WQC for that pollutant. This RPTE may result in end-of-pipe limits or may be accommodated if the receiving water has sufficient low flows to provide a

mixing zone and the POC does not have acute toxicity attributes. Other conditions may also be applicable that may restrict the use of a mixing zone for the POC.

C. WQBEL Calculations

The following calculations demonstrate how theWQBELs in the permit were calculated. The following discussion presents the general equations used to calculate the WQBELs.

Calculate the Wasteload Allocations (WLAs)

WLAs are calculated using the same mass-balance equations used to calculate the concentration of the pollutant at the mixing zone boundary in the RPA. WLAs must be calculated for both acute and chronic criteria. To calculate the WLAs, C_d is set equal to the appropriate criterion and the equation is solved for C_e. The calculated C_e is the WLA. Equation 5 is rearranged to solve for the WLA:

Equation 5. Simple mass-balance equation for calculating WLA for flowing water.

$$C_e = WLA_{(a\ or\ c)} = \frac{WQC_{(a\ or\ c)}[Q_e + (Q_u \times \%MZ)] - [C_u \times (Q_u \times \%MZ)]}{Q_e}$$

Where:

$WQC_{(a\ or\ c)}$ = Pollutant water quality criterion (acute or chronic)	Calculated value
Q_e = Critical effluent flow	From discharge flow data (design flow for POTW)
Q_u = Critical upstream flow (1Q10 acute criterion or 7Q10 chronic)	From water quality standards
%MZ = Percent of critical low flow provided by mixing zone	From mixing zone analysis
C_u = Critical upstream pollutant concentration (90th to 95th percentile)	From receiving water data
$C_e = WLA_{(a\ or\ c)}$ = wasteload allocation (acute or chronic)	Calculated from Equation 4

Idaho's WQC for some metals are expressed as the dissolved fraction. The rules regulating the IPDES program (IDAPA 58.01.25.303.03) require that effluent limits be expressed as total recoverable metal unless standards have been promulgated allowing limits specified in dissolved, valent, or total forms. A case-by-case basis has been established for limits specified in dissolved, valent, or total form, or all approved analytical methods for the metal inherently measure only its dissolved form. Therefore, the permit writer should calculate a WLA in total recoverable metal that will be protective of the dissolved criterion. This is accomplished by dividing the WLA expressed as dissolved by the criteria translator. As discussed in *Guidance Document on Dynamic Modeling and Translators* (EPA 1993), the criteria translator (CT) is equal to the conversion factor when site-specific translators are not available. Conversion factors for metals criteria are listed in DEQ's Water Quality Standards (WQS) at IDAPA 58.01.02.210.02. The WQS also lists several guidance documents at IDAPA 58.01.02.210.04 that are recommended for the development of site specific translators.

The next step is to compute the acute and chronic long-term average ($LTA_{(a\ or\ c)}$) concentrations, which will be derived from the acute and chronic WLAs. This is done using the following equations from the *Effluent Limit Development Guidance* (DEQ 2017):

$$LTA_a = WLA_a \times e^{(0.5\sigma^2 - z_{99}\sigma)}$$ **Equation 6. Acute LTA for toxics.**

Where:

LTA_a = Acute long-term average	Calculated value
WLA_a = Acute wasteload allocation	Calculated value. See Equation 5.
e = Base of natural log	Approximately 2.718
σ = Square root of σ^2	
$\sigma^2 = Ln(CV^2+1)$	Ln is the natural log
CV = Coefficient of variation	Calculated using field data. If 10 or less samples available, use default value of 0.6. See Equation 3
Z_{99} = z score of the 99th percentile of the normal distribution	2.326

$$LTA_c = WLA_c \times e^{(0.5\sigma_n^2 - z_{99}\sigma_n)}$$ **Equation 7. Chronic LTA average for toxics.**

Where:

LTA_c = Chronic long-term average	Calculated value
WLA_c = Chronic wasteload allocation	Calculated value. See Equation 5.
e = Base of natural log	Approximately 2.718
σ_n = Square root of σ_n^2	
$\sigma_n^2 = Ln[(CV^2)/n + 1)]$	Ln is the natural log
CV = Coefficient of variation	Calculated using field data. If 10 or less, samples available use default value of 0.6. See Equation 3.
Z_{99} = z score of the 99th percentile of the normal distribution	2.326
n = Averaging period for the chronic water quality criterion (typically 4 days)	Varies

The acute and chronic LTAs are compared, and the more stringent of the two is used to calculate the maximum daily and average monthly limits.

Derive the Maximum Daily and Average Monthly Effluent Limits

Using the *Effluent Limit Development Guidance* (DEQ 2017) equations, the maximum daily limit (MDL) and average monthly limit (AML) are calculated as follows:

$$Maximum\ Daily\ Limit = LTA_m \times e^{(z_{99}\sigma - 0.5\sigma^2)}$$ **Equation 8. Maximum daily limit for toxics.**

Where:

LTA_m = Minimum long-term average value	Lesser value calculated from Equation 6 and Equation 7
e = Base of natural log	Approximately 2.718

σ = Square root of σ^2	
$\sigma^2 = Ln(CV^2+1)$	Ln is the natural log of base e
Z_{99} = z score of the 99th percentile of the normal distribution	2.326
CV = Coefficient of variation	See Equation 3.

$$AML = LTA_m \times e^{(z_{95}\sigma_n - 0.5\sigma_n^2)}$$

Equation 9. Average monthly limit for toxics.

Where:

LTA_m = Minimum long-term average	Lesser value calculated from Equation 6 and Equation 7
AML = Average monthly limit	Calculated value
e = Base of natural log	Approximately 2.718
σ_n = Square root of σ_n^2	
$\sigma_n^2 = Ln[(CV^2)/n + 1]$	Ln is the natural log of base e
Z_{95} = z score of the 95th percentile of the normal distribution	1.645
n = Number of sample specified in the permit to be analyzed each month	Typically n = 1, 2, 4, 10, or 30.
CV = Coefficient of variation	See Equation 3

Appendix C. Your Right to Appeal

Persons aggrieved, as specified in IDAPA 58.01.25.204.01.a., have a right to appeal the final permit decision. A Petition for Review must be filed with the Department's Hearing Coordinator within twenty eight (28) days after the Department serves notice of the final permit decision under IDAPA 58.01.25.107 (Decision Process).

All documents concerning actions governed by these rules must be filed with the Hearing Coordinator at the following address: Hearing Coordinator, Department of Environmental Quality, 1410 N. Hilton, Boise, ID 83706-1255. Documents may also be filed by FAX at FAX No. (208) 373-0481 or may be filed electronically. The originating party is responsible for retaining proof of filing by FAX. The documents are deemed to be filed on the date received by the Hearing Coordinator. Upon receipt of the filed document, the Hearing Coordinator will provide a conformed copy to the originating party. Additional requirements for appeals of IPDES final permit decisions can be found in IDAPA 58.01.25.204.

Appendix D. Public Involvement and Public Comments

A. Public Involvement Information

DEQ proposes to issue a permit to the City of Moyie Springs. The permit includes wastewater discharge limits and other conditions. This fact sheet describes the facility and DEQ's reasons for requiring permit conditions.

DEQ placed a Public Notice of Application on date and date in name of publication to inform the public about the submitted application and to invite comment on the reissuance/issuance of this permit.

DEQ will place/placed a Public Notice of Draft on date in name of publication to inform the public and to invite comment on the draft Idaho Pollutant Discharge Elimination System permit and fact sheet.

The notice:

- Tells where copies of the draft permit and fact sheet are available for public evaluation (a local public library, the closest regional or field office, posted on our website).
- Offers to provide the documents in an alternate format to accommodate special needs.
- Asks people to tell us how well the draft permit would protect the receiving water.
- Invites people to suggest fairer conditions, limits, and requirements for the permit.
- Invites comments on DEQ's determination of compliance with antidegradation rules.
- Urges people to submit their comments, in writing, before the end of the comment period.
- Tells how to request a public hearing about the draft IPDES permit.
- Explains the next step(s) in the permitting process.

[attach printed copy of the Public Notice and published article]

B. Public Comments and Response to Comments

[DEQ will complete this section after the public notice of draft period.]