Fact Sheet

The U.S. Environmental Protection Agency (EPA)

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

PotlatchDeltic Land and Lumber
St. Maries Complex

And to Require an Individual Permit for Stormwater Discharges from Outfall 001.

Public Comment Start Date: July 28, 2021
Public Comment Expiration Date: August 27, 2021

Technical Contact: Brian Nickel
206-553-6251
800-424-4372, ext. 36251 (within Alaska, Idaho, Oregon and Washington)
Nickel.Brian@epa.gov

EPA Proposes to Reissue NPDES Permit

EPA proposes to reissue the NPDES permit for the facility referenced above. The draft permit places conditions on the discharge of pollutants from the facility to waters of the United States. In order to ensure protection of water quality and human health, the permit places limits on the types and amounts of pollutants that can be discharged from the facility.

EPA also proposes to cover stormwater from outfalls 001, 002, 003, and 004 at the above-referenced facility under the reissued individual permit, pursuant to 40 CFR 122.28(b)(3)(i).

This Fact Sheet includes:

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

401 Water Quality Certification

EPA is requesting that the Coeur d'Alene Tribe certify the discharge from outfall 001 to the St. Joe River under Section 401 of the Clean Water Act. Comments regarding the certification should be directed to:

Attn: Scott Fields
Coeur d'Alene Tribe

Lake Management Department
850 A Street, P.O. Box 408
Plummer, Idaho 83851

Since outfalls 002, 003, and 004 discharge to tribal waters for which the Tribe does not have Treatment as a State (TAS), EPA is the certifying authority for the permit. Comments regarding the intent to certify should be directed to the EPA technical contact listed above.

Public Comment

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

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

Documents are Available for Review

The draft NPDES permit and related documents can be reviewed or obtained by visiting or contacting EPA's Regional Office in Seattle between 8:30 a.m. and 4:00 p.m., Monday through Friday at the address below. The draft permits, fact sheet, and other information can also be found by visiting the Region 10 NPDES website at:
https://www.epa.gov/npdes-permits/about-region-10s-npdes-permit-program

US EPA Region 10
1200 Sixth Avenue, Suite 155
Mail Code: 19-C04
Seattle, Washington 98101
(206) 553-0523 or
Toll Free 1-800-424-4372 (within Alaska, Idaho, Oregon and Washington)

The fact sheet and draft permits are also available at:

United States Environmental Protection Agency
Idaho Operations Office
950 W. Bannock St., Suite 900
Boise, Idaho 83702
(208) 378-5746

Coeur d'Alene Tribe
Lake Management Department
410 Anne Antelope Road
Plummer, Idaho 83851
(208) 686-0252

St. Maries Public Library
822 College Avenue
St. Maries, Idaho 83861
(208) 245-3732

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I. Acronyms

1Q10	1 day, 10 year low flow
7Q10	7 day, 10 year low flow
30B3	Biologically-based design flow intended to ensure an excursion frequency of less than once every three years, for a 30-day average flow.
30Q10	30 day, 10 year low flow
AML	Average Monthly Limit
BA	Biological Assessment
BAT	Best Available Technology economically achievable
BCT	Best Conventional pollutant control Technology
BE	Biological Evaluation
BO or BiOp	Biological Opinion
BOD_5	Biochemical oxygen demand, five-day
BMP	Best Management Practices
BPT	Best Practicable
°C	Degrees Celsius
CCC	Criterion Continuous Concentration
CDT	Coeur d'Alene Tribe
CFR	Code of Federal Regulations
CFS	Cubic Feet per Second
CMC	Criterion Maximum Concentration
COD	Chemical Oxygen Demand
CV	Coefficient of Variation
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved oxygen
DOC	Dissolved organic carbon
EA	Environmental Assessment
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FR	Federal Register

GPD	Gallons per day
HUC	Hydrologic Unit Code
IC	Inhibition Concentration
ICIS	Integrated Compliance Information System
IDEQ	Idaho Department of Environmental Quality
I/I	Infiltration and Inflow
LA	Load Allocation
lbs/day	Pounds per day
LC	Lethal Concentration
LTA	Long Term Average
mg/L	Milligrams per liter
mL	Milliliters
ML	Minimum Level
µg/L	Micrograms per liter
mgd	Million gallons per day
MDL	Maximum Daily Limit or Method Detection Limit
N	Nitrogen
NEPA	National Environmental Policy Act
NOAA	National Oceanic and Atmospheric Administration
NOEC	No Observable Effect Concentration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NSPS	New Source Performance Standards
O&M	Operations and maintenance
QAP	Quality assurance plan
RP	Reasonable Potential
RPM	Reasonable Potential Multiplier
RWC	Receiving Water Concentration
SIC	Standard Industrial Classification
SPCC	Spill Prevention and Control and Countermeasure
SS	Suspended Solids
s.u.	Standard Units

TKN	Total Kjeldahl Nitrogen
TMDL	Total Maximum Daily Load
TOC	Total Organic Carbon
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_a	Toxic Units, Acute
TU_c	Toxic Units, Chronic
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
WD	Water Division
WET	Whole Effluent Toxicity
WLA	Wasteload allocation
WQBEL	Water quality-based effluent limit
WQS	Water Quality Standards
WWTP	Wastewater treatment plant

I. Background Information

A. General Information

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

Table 1. General Facility Information

NPDES Permit #:		ID0000019
Applicant:		PotlatchDeltic Land and Lumber St. Maries Complex
Type of Ownership		Private
Physical Address:		2200 Railroad Avenue St. Maries, ID 83861
Facility Contact:		Jacob Odekirk Environmental Manager
Facility Location:		Latitude: 47.329167 Longitude: -116.591667
Receiving Waters		St. Joe River (outfall 001) Unnamed ditch (outfalls 002, 003, and 004)
Facility Outfalls	001	47.329722, -116.590278
	002	47.3205, -116.5822
	003	47.3207, -116.5851
	004	47.3208, -116.5865

B. Permit History

The most recent individual NPDES permit for the PotlatchDeltic St. Maries Complex was issued on October 1, 1996, became effective on October 31, 1996, and expired on October 31, 2001. An NPDES application for permit issuance was submitted by the permittee on May 10, 2001. EPA determined that the application was timely and complete. Therefore, pursuant to 40 CFR 122.6, the permit has been administratively continued and remains fully effective and enforceable.

The existing individual permit covers the discharge of log yard runoff comingled with non-contact cooling water through Outfall 001 to the St. Joe River.

Discharges of stormwater from Outfall 001 are currently covered under EPA's Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP), under permit number IDR05I310. The MSGP also covers stormwater discharges from three additional stormwater outfalls, which are numbered 002, 003, and 004.

As explained under "Proposed Requirement for an Individual Permit for Stormwater," below, EPA is proposing to cover all discharges from all four outfalls under a reissued individual permit. On February 17, 2021, EPA sent a letter to PotlatchDeltic stating that EPA had determined that an individual NPDES permit is required for Outfalls 002, 003, and 004 pursuant to 40 CFR 124.52(b). The letter established a deadline of May 13, 2021 for PotlatchDeltic to submit a complete application. On May 14, 2021, EPA received the application for an individual permit for Outfalls 002, 003, and 004.

C. Tribal Consultation

EPA consults on a government-to-government basis with federally recognized tribal governments when EPA actions and decisions may affect tribal interests. Meaningful tribal consultation is an integral component of the federal government's general trust relationship with federally recognized tribes. The federal government recognizes the right of each tribe to self-government, with sovereign powers over their members and their territory. Executive Order 13175 (November 2000) entitled "Consultation and Coordination with Indian Tribal Governments" requires federal agencies to have an accountable process to assure meaningful and timely input by tribal officials in the development of regulatory policies on matters that have tribal implications and to strengthen the government-to-government relationship with Indian tribes. In May 2011, EPA issued the EPA Policy on Consultation and Coordination with Indian Tribes which established national guidelines and institutional controls for consultation. Consistent with the Executive Order and EPA tribal consultation policies, EPA coordinated with the Coeur d'Alene Tribe (CDT) during development of the draft permit and is inviting the Tribe to engage in formal tribal consultation.

Because the PotlatchDeltic St. Maries Complex is within the boundaries of the Coeur d'Alene Tribal Reservation and Outfall 001 discharges to waters for which the Tribe has treatment as a state (TAS), the CDT is also the certifying authority for the permit under Section 401 of the Clean Water Act. Therefore, EPA must engage in tribal consultation with CDT where requested and must seek 401 certification of the permit from CDT.

II. Facility Information

A. Description

The facility encompasses 160 acres on the Coeur d'Alene Reservation and consists of a lumber mill, plywood plant, power plant, wet and dry log storage yards, and a woody debris storage area. A site map is provided in Figure 1.

The existing individual permit covers the discharge of log yard runoff comingled with non-contact cooling water, which flows to Outfall 001. Stormwater is commingled with the log yard runoff and cooling water prior to discharge from Outfall 001 and stormwater was disclosed as a waste stream in the application for reissuance of this individual permit.

Treatment for Outfall 001 consists of screening to remove floating debris and the addition of a defoamer.

Potential pollutants in stormwater include fuel (gasoline and diesel), antifreeze, oils including hydraulic oil, bark and woody debris, phenolic resin, dust, and sediment. Control measures are in place to prevent or reduce discharges of these pollutants. The main pollutant of concern for non-contact cooling water is heat. Potential pollutants in log sprinkling runoff include woody debris.

For approximately seven months of the year, stormwater is re-used for log sprinkling.

B. Proposed Requirement for an Individual Permit for Stormwater

EPA is proposing to require an individual NPDES permit for discharges of stormwater. EPA proposes to cover all discharges from Outfall 001 (including stormwater) and to cover

discharges of stormwater from Outfalls 002, 003, and 004 under the reissued individual permit.

The U.S. Fish and Wildlife Service (USFWS) and CDT have raised concerns about discharges authorized under the MSGP from this facility, including concerns about discharges of zinc (Table 2, Table 3, Table 4, and Table 5) which exceed the MSGP's benchmarks (Table 11). Zinc is toxic to bull trout and other salmonids, and the St. Joe River is designated critical habitat for bull trout. This facility discharges pollutants to the St. Joe River either directly (Outfall 001) or via a tributary (Outfalls 002, 003, and 004).

40 CFR 122.28(b)(3)(i)(G) states that EPA may require any discharger authorized by a general permit to apply for and obtain an individual NPDES permit if EPA determines that the discharge is a significant contributor of pollutants. In making this determination, EPA may consider the location and size of the discharge and the quantity and nature of the pollutants discharged to waters of the United States. Because it has the reasonable potential to cause or contribute to excursions above water quality standards for iron (at Outfall 001), TSS, and zinc (as explained under Reasonable Potential Analysis and Need for Water Quality-Based Effluent Limits, below) to a receiving water which is designated bull trout critical habitat, EPA has determined that stormwater discharged from the St. Maries Complex is a significant contributor of pollutants. Therefore, EPA is requiring the outfalls to be covered under an individual NPDES permit .

In addition, the discharge of cooling water from Outfall 001 is not authorized under the MSGP. Thus, even if stormwater discharges from Outfall 001 remained covered under the MSGP, an individual NPDES permit would nonetheless be necessary for the cooling water discharges. The cooling water, log yard runoff, and stormwater commingle prior to discharge and are discharged through Outfall 001. Having different sources of commingled wastewater authorized under separate permits complicates monitoring and enforcement. It is preferable to cover all discharges from Outfall 001 under a single, individual permit.

The question whether the individual permit designation was proper will remain open for consideration during the public comment period for this draft permit (40 CFR 124.52(b)).

Outfall Description

Outfall 001

A drainage ditch channels flow to a stormwater treatment pond. A metal shipping container located above the pond serves as a pump house. The pump house contains a flow meter and defoamer, which is injected into the effluent before being pumped to Outfall 001.

Discharges from Outfall 001 reach the St. Joe River through a pipe from the pump house, which connects to the river via a short ditch (see Figure 2).

Outfalls 002, 003 and 004

These outfalls discharge to an unnamed ditch at the south end of the facility (sometimes referred to as Mutch Creek or the perimeter ditch). Each outfall drains a separate basin within the facility. Stormwater from Outfalls 002, 003, and 004 is discharged to the unnamed ditch without treatment. The unnamed ditch is part of the Mutch Creek watershed, and flow from the ditch and Mutch Creek is pumped to the St. Joe River (USACE, 2012).

Mutch Creek is tributary to a segment of the St. Joe River for which the Coeur d'Alene Tribe has TAS and EPA-approved water quality standards.

Effluent Characterization

To characterize the effluent, EPA evaluated the facility's application forms and discharge monitoring report (DMR) data from the facility's individual permit and the MSGP. The effluent quality is summarized in Table 2, Table 3, Table 4, and Table 5.

Table 2: Effluent Characterization for Outfall 001

Parameter	Units	Minimum	Average	Maximum	Standard Deviation	Count	Source
Aluminum, total	µg/L	570	570	570	N/A	1	2001 application
Ammonia, total as N	mg/L	0.06	0.41	1.2	0.44	6	Application and individual permit DMR data
Barium, total	µg/L	88	88	88	N/A	1	2001 application
Biochemical oxygen demand, 5-day	mg/L	6	22	48	18	6	Application and individual permit DMR data
Boron, total	µg/L	40	40	40	N/A	1	2001 application
Chemical oxygen demand	mg/L	62.8	161	299	68	13	MSGP DMR Data
Color	Color units	90	90	90	N/A	1	2001 application
Flow (June - Sept.)	mgd	0.0001	0.0927	0.477	0.100	90	Individual permit DMR data
Flow (Oct - May)	mgd	0.011	0.208	1.100	0.125	186	Individual permit DMR data
Iron, total	µg/L	6660	6660	6660	N/A	1	2001 application
Manganese, total	µg/L	1820	1820	1820	N/A	1	2001 application
Oxygen, dissolved	mg/L	2.72	8.98	16.5	6.83	5	Individual permit DMR data
pH	s.u.	6.0	N/A	8.1	N/A	276	Individual permit DMR data
Phosphorus, total as P	mg/L	0.22	0.52	0.86	0.26	6	2001 application and individual permit DMR data
Solids, total suspended	mg/L	27	104	333	89	13	MSGP DMR data
Temperature (daily max.)	°C	3	12.8	27.9	5.7	274	Individual permit DMR data
Total phenols	µg/L	300	300	300	N/A	1	2001 application
Turbidity	NTU	21.6	107	364	146	5	Individual permit DMR data
Zinc, total	µg/L	27	79	172	45	13	MSGP DMR data

Table 3: Effluent Characterization for Outfall 002

Parameter	Units	Minimum	Average	Maximum	Standard Deviation	Count	Source
Chemical oxygen demand	mg/L	10.8	81.0	300	75.3	13	MSGP DMR Data
Nitrogen, total as N	mg/L	0.73	0.73	0.73	N/A	1	2021 application
Oil and Grease	mg/L	ND	ND	ND	N/A	1	2021 application
pH	s.u.	6.8	N/A	7.1	N/A	10	MSGP DMR data
Phosphorus, total as P	mg/L	0.144	0.144	0.144	N/A	1	2021 application
Solids, total suspended	mg/L	7	126	470	140	13	MSGP DMR data
Total Kjeldahl nitrogen	mg/L	1.22	1.22	1.22	N/A	1	2021 application
Zinc, total	µg/L	10	55	200	56	14	2021 application and MSGP DMR data

Table 4: Effluent Characterization for Outfall 003

Parameter	Units	Minimum	Average	Maximum	Standard Deviation	Count	Source
Chemical oxygen demand	mg/L	22.6	113.6	313	85.5	13	MSGP DMR Data
Nitrogen, total as N	mg/L	0.51	0.51	0.51	N/A	1	2021 application
Oil and Grease	mg/L	ND	ND	ND	N/A	1	2021 application
pH	s.u.	6.8	N/A	7.1	N/A	10	MSGP DMR data
Phosphorus, total as P	mg/L	0.268	0.268	0.268	N/A	1	2021 application
Solids, total suspended	mg/L	15	140	321	101	13	MSGP DMR data
Total Kjeldahl nitrogen	mg/L	0.70	0.70	0.70	N/A	1	2021 application
Zinc, total	µg/L	10	57	184	47	14	2021 application and MSGP DMR data

Table 5: Effluent Characterization for Outfall 004

Parameter	Units	Minimum	Average	Maximum	Standard Deviation	Count	Source
Chemical oxygen demand	mg/L	54.5	188.9	429	121.5	13	MSGP DMR Data
Nitrogen, total as N	mg/L	<0.50	<0.50	<0.50	N/A	1	2021 application
Oil and Grease	mg/L	1.06	1.06	1.06	N/A	1	2021 application
pH	s.u.	6.8	N/A	7.1	N/A	10	MSGP DMR data
Phosphorus, total as P	mg/L	0.585	0.585	0.585	N/A	1	2021 application

Parameter	Units	Minimum	Average	Maximum	Standard Deviation	Count	Source
Solids, total suspended	mg/L	51	563	2380	676	13	MSGP DMR data
Total Kjeldahl nitrogen	mg/L	<2.50	<2.50	<2.50	N/A	1	2021 application
Zinc, total	µg/L	15	202	584	182	13	2021 application and MSGP DMR data

Compliance History

The facility has not had any violations of the effluent limits in its individual NPDES permit between January 2007 and May 2021.

EPA conducted an inspection of the facility on March 9, 2017. The inspection addressed compliance with both the individual permit and the MSGP. Areas of concern identified during the inspection included exceedances of MSGP benchmarks for TSS, COD, and zinc despite the facility documenting corrective actions in its annual reports, several turbid discharges and monitoring points, a foamy discharge at Outfall 001 (even though the pump house was equipped to dispense a defoamer), algal growth in puddles of stormwater at the base of a woody debris pile, quarterly visual assessment reports that routinely described stormwater discharges as "grey" or "opaque," leachate from the woody debris area, open dumpsters, the representativeness of the hardness value used to establish the zinc benchmark, the use of magnesium chloride for dust control.

Additional compliance information for this facility, including compliance with other environmental statutes, is available on Enforcement and Compliance History Online (ECHO). The ECHO web address for this facility is: https://echo.epa.gov/detailed-facility-report?fid=110000468789.

III. Receiving Water

In drafting permit conditions, EPA must analyze the effect of the facility's discharge on the receiving water. The details of that analysis are provided in the Water Quality-Based Effluent Limits section below. This section summarizes characteristics of the receiving water that impact that analysis.

A. Receiving Water

Outfall 001

This facility discharges from Outfall 001 to the St. Joe River in the City of St. Maries, ID within the boundary of the Coeur d'Alene Reservation. Outfall 001 is located approximately six river miles upstream of Chatcolet Lake, and approximately 1.5 miles downstream from the confluence of the St. Joe and St. Maries Rivers.

Outfalls 002, 003 and 004

These outfalls discharge to an unnamed ditch at the south end of the facility. The unnamed ditch is part of the Mutch Creek watershed and is a tributary to a segment of the St. Joe River for which the Coeur d'Alene Tribe has TAS and EPA-approved water quality standards, via a

pump station which pumps water from Mutch Creek and the ditch over a levee (USACE, 2012).

B. Water Quality Standards

Overview

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

The Coeur d'Alene Tribe received treatment in a manner similar to a state (TAS) status for administering WQS over portions of Lake Coeur d'Alene and the St. Joe River that lie within the boundaries of the Coeur d'Alene Reservation.

Outfall 001 discharges to the portion of the St. Joe River that lies within the boundaries of the Coeur d'Alene Reservation. These waters are referred to as "Reservation TAS Waters." Water Quality Standards for Approved Surface Waters of the Coeur D'Alene Tribe are in effect for CWA purposes, effective June 12, 2014. This is the first issuance of an individual NPDES permit to the PotlatchDeltic St. Maries Complex for which CDT WQS are in effect for CWA purposes.

Although the ditch receiving discharges from Outfalls 002, 003, and 004 is within the Coeur d'Alene Reservation, it is not among the waterbodies for which the Coeur d'Alene Tribe has TAS authority or approved water quality standards. EPA referenced the Tribe's standards for the St. Joe River when calculating effluent limits for these outfalls to ensure protection of downstream water quality.

Designated Beneficial Uses

The CDT has adopted general water use classifications that apply to all Reservation TAS Waters. All TAS Waters shall be designated for the uses of industrial water supply, aesthetics, and wildlife habitat. Additionally, TAS Waters are classified for:

- Domestic Water Supply
- Agricultural Water Supply
- Recreational and Cultural Use
- Bull Trout and Cutthroat Trout

EPA used the CDT WQS in developing permit conditions and effluent limitations.

EPA also referenced Idaho WQS at IDAPA 58.01.02 in cases where CDT WQS are not in effect for Clean Water Act purposes, to ensure that the downstream affected state's waters are protected. Water quality standards are further discussed in Section V.D below.

Human Health Criteria

EPA has not acted on the human health water quality criteria found in Section 7 of the CDT WQS. Thus, the Tribe's human health criteria are not in effect for CWA purposes. Therefore, the human health criteria in the Idaho WQS (IDAPA 58.01.02.210) were used as a reference for human health criteria for all outfalls, to protect downstream water quality and beneficial uses.

C. Water Quality

The water quality for the St. Joe River is summarized in Table 6. No water quality data are available for the receiving water for Outfalls 002, 003, and 004.

Table 6. Receiving Water Quality Data for St. Joe River

Parameter	Units	Statistic	Value	Source
Aluminum	µg/L	Maximum	60	USGS NWIS station 12413875
Ammonia	mg/L	90th percentile	0.02	USGS NWIS stations 12415135 and 12415140
Barium	µg/L	Single result	<100	USGS NWIS station 12415075
Boron	µg/L	Single result	<100	USGS NWIS station 12415075
Dissolved organic carbon	mg/L	Minimum	1.05	USGS NWIS station 12415140
Dissolved oxygen	mg/L	5th percentile	8.6	USGS NWIS station 12415075
Hardness (June - Sep.)	mg/L as CaCO3	5th percentile	14.0	USGS NWIS stations 12415135 and 12415140
Hardness (Oct. - May)	mg/L as CaCO3	5th percentile	12.1	USGS NWIS stations 12415135 and 12415140
Iron	µg/L	Geometric mean	285	USGS NWIS station 12415075
Iron	µg/L	90th percentile	800	USGS NWIS station 12415075
Manganese	µg/L	Geometric mean	13.4	USGS NWIS stations 12415135 and 12415140
pH	Standard units	5th – 95th	6.4 – 7.5	USGS NWIS stations 12415135 and 12415140
Orthophosphate, dissolved as P	µg/L	Geometric mean	6	USGS NWIS stations 12415135 and 12415140
Orthophosphate, dissolved as P	µg/L	90th Percentile	11	USGS NWIS stations 12415135 and 12415140
Phosphorus, total as P	µg/L	Geometric mean	20	USGS NWIS stations 12415135 and 12415140
Phosphorus, total as P	µg/L	90th Percentile	49.1	USGS NWIS stations 12415135 and 12415140
Temperature (June – Sep)	°C	95th Percentile	25.5	USGS NWIS station 12415075
Temperature (October – May)	°C	95th Percentile	11.8	USGS NWIS station 12415075
Temperature (year-round)	°C	95th Percentile	22.8	USGS NWIS station 12415075
Suspended Sediment (TSS)	mg/L	90th Percentile	35.6	USGS NWIS stations 12415135 and 12415140
Zinc	µg/L	Geometric mean	1.90	USGS NWIS stations 12415135 and 12415140
Zinc	µg/L	90th percentile	3.82	USGS NWIS stations 12415135 and 12415140

D. Water Quality Limited Waters

Idaho's 2016 305(b) Integrated Report identifies the 3.76 mile stretch of the St. Joe River receiving the discharge from Outfall 001 as Category 3 or lacking sufficient data to

determine if any beneficial uses are being met (i.e., unassessed). The St. Joe River downstream, between the point of discharge and Coeur d'Alene Lake, is unassessed by IDEQ because it is a water of the Coeur d'Alene Tribe. Coeur d'Alene Lake, approximately eight river miles downstream of the discharge, is not supporting (Category 5) cold water aquatic life criteria due to cadmium, lead, and zinc exceedances of water quality standards. A Coeur d'Alene Lake metals total maximum daily load (TMDL) was developed in 2000 through a joint effort by DEQ and EPA but was overturned by the Idaho Supreme Court in 2003.

In 2009, the CDT and IDEQ collaboratively developed the 2009 Lake Management Plan with the goal "to protect and improve lake water quality by limiting basin-wide nutrient inputs that impair lake water quality conditions, which in turn influence the solubility of mining-related metals contamination contained in lake sediments"(IDEQ&CdAT, 2009). The Plan does not establish numeric nutrient criteria.

An EPA-approved TMDL for temperature is in effect on the St. Joe River (ID17010304PN027_05) approximately 1.5 river miles upstream of the discharge, which is not meeting Idaho's cold water aquatic life uses, as well as an EPA-approved TMDL for temperature and sediment on the St. Maries River approximately 1.5 miles upstream of the discharge where the St. Joe and St. Maries Rivers join (ID17010304PN007_05), which is also not supporting cold water aquatic life uses. Neither of these EPA approved TMDLs give a wasteload allocation (WLA) to the facility.

The ditch receiving the discharges from Outfalls 002, 003, and 004 is not visible on Idaho's integrated report mapper. Mutch Creek (Assessment Unit ID: ID17010304PN005_02) has not been assessed.

E. Low Flow Conditions

Critical low flows for the St. Joe River are summarized in Table 7. Seasonal flows were investigated since the Coeur d'Alene Tribe's temperature water quality criterion is seasonal and applies from June - September. Since seasonal flows were not significantly different from the annual flows, the annual flows were used for permit calculations. Low flows are defined in Appendix C, Part C.

No flow data are available for the ditch receiving the discharges from Outfalls 002, 003, or 004.

Table 7. Critical Flows in the St. Joe River

Flows	Annual Flow (cfs)	June - September Flow (CFS)	October - May Flow (CFS)
1Q10	125	168	141
7Q10	258	254	331
30B3	408	—	—
30Q5	363	373	393
Harmonic Mean	1076	1072	1069
Source: USGS station 12415135, St. Joe River at Ramsdell near St, Maries, ID			

IV. Effluent Limitations and Monitoring

Table 8, below, presents the existing effluent limits and monitoring requirements in the 1996 permit. Table 9 and Table 10, below, present the proposed effluent limits and monitoring requirements in the draft permit.

The MSGP includes a pH effluent limit of 6.0 to 9.0 s.u. and a prohibition of discharge of debris that will not pass through a 2.54-cm (1-inch) round opening, for discharges from wet storage of logs. The MSGP also includes benchmarks for chemical oxygen demand (COD), total suspended solids (TSS), and zinc (Table 11). The MSGP generally requires quarterly monitoring for parameters with benchmarks.

Table 8. Existing Individual Permit for Outfall 001 - Effluent Limits and Monitoring Requirements

Effluent Parameters	Units	Effluent Limitations		Monitoring Requirements	
		Monthly Average	Daily Maximum	Frequency	Sample Type
Flow	MGD	—	—	Weekly	Recording
pH	s.u.	6.0 to 9.0		Weekly	Grab
Temperature	°C	—	—	Weekly	Grab
BOD_5	mg/L	—	—	1/Month in April, July, August, September, and November (1997 only)	Grab
Phosphorus, total as P	mg/L	—	—	1/Month in April, July, August, September, and November (1997 only)	Grab
Nitrogen, total as N	mg/L	—	—	1/Month in April, July, August, September, and November (1997 only)	Grab
Total Kjeldahl Nitrogen	mg/L	—	—	1/Month in April, July, August, September, and November (1997 only)	Grab
Turbidity	NTU	—	—	1/Month in April, July, August, September, and November (1997 only)	Grab
Oxygen, dissolved	mg/L	—	—	1/Month in April, July, August, September, and November (1997 only)	Grab
TSS	mg/L	—	—	1/Month in April, July, August, September, and November (1997 only)	Grab
Total petroleum hydrocarbons		—	—	1/Month in April, July, August, September, and November (1997 only)	Grab

Table 9. Draft Permit - Effluent Limits and Monitoring Requirements for Outfall 001

Effluent Parameters	Units	Effluent Limitations		Monitoring Requirements	
		Monthly Average	Daily Maximum	Frequency	Sample Type
Flow	MGD	Report	Report	Weekly	Recording
Iron	mg/L	7.02	14.1	Monthly	Grab
	lb/day	64.4	129		Calculation[1]
pH	s.u.	6.5 to 8.5 std. units		Weekly	Grab
TSS	mg/L	75	177	Weekly	Grab
	lb/day	688	1,624		Calculation[1]
Zinc (June - Sept.)	µg/L	22.0	31.6	Monthly	Grab
	lb/day	0.20	0.29		Calculation[1]
Zinc (Oct. - May)	µg/L	51.1	73.7	Monthly	Grab
	lb/day	0.47	0.68		Calculation[1]
2,4,5-Trichlorophenol	µg/L	—	Report	1/year	Grab
2,4,6-Trichlorophenol	µg/L	—	Report	1/year	Grab
2,4-Dichlorophenol	µg/L	—	Report	1/year	Grab
2,4-Dimethylphenol	µg/L	—	Report	1/year	Grab
2,4-Dinitrophenol	µg/L	—	Report	1/year	Grab

Effluent Parameters	Units	Effluent Limitations		Monitoring Requirements	
		Monthly Average	Daily Maximum	Frequency	Sample Type
2-Chlorophenol	µg/L	—	Report	1/year	Grab
2-Methyl-4,6-Dinitrophenol	µg/L	—	Report	1/year	Grab
3-Methyl-4-Chlorophenol	µg/L	—	Report	1/year	Grab
Aluminum	µg/L	—	Report	2/year[2]	Grab
Ammonia, total as N	mg/L	—	Report	2/year[2]	Grab
COD	mg/L	—	Report	Quarterly[3]	Grab
Dinitrophenols	µg/L	—	Report	1/year	Grab
Hardness	mg/L as CaCO3	—	Report	2/year[2]	Grab
Manganese	µg/L	—	Report	2/year[2]	Grab
Nitrate-Nitrite as N	mg/L	—	Report	2/year[2]	Grab
Nonylphenol	µg/L	—	Report	1/year	Grab
Orthophosphate (as P)	mg/L	—	Report	1/month	Grab
Pentachlorophenol	µg/L	—	Report	1/year	Grab
Phenol	µg/L	—	Report	1/year	Grab
Phosphorus, total as P	mg/L	—	Report	1/month	Grab
Temperature	°C	Report	Report	Continuous	Recording
Total Kjeldahl Nitrogen	mg/L	—	Report	2/year[2]	Grab
Whole effluent toxicity	TUc	—	Report	2/year[2]	Grab

Notes:

1. Loading (in lbs/day) is calculated by multiplying the concentration (in mg/L) by the corresponding flow (in mgd) for the day of sampling and a conversion factor of 8.34. For more information on calculating, averaging, and reporting loads and concentrations see the NPDES Self-Monitoring System User Guide (EPA 833-B-85-100, March 1985).

2. One sample must be taken between January 1st and June 30th and a second sample must be taken between July 1st and December 31st. Results must be reported on the June and December DMRs.

3. Quarters are defined as January 1st – March 31st, April 1st – June 30th, July 1st – September 30th, and October 1st – December 31st. Results must be reported on the March, June, September, and December DMRs.

Table 10: Effluent Limits and Monitoring Requirements: Outfall 002, 003 and 004

Effluent Parameters	Units	Effluent Limitations	Monitoring Requirements	
			Frequency	Sample Type
pH	s.u.	6.5 to 8.5 std. units	Quarterly[1]	Grab
TSS	mg/L	75 (rolling average limit)	Quarterly[1]	Grab
Zinc	µg/L	20.7 (maximum daily limit)	Quarterly[1]	Grab
2,4,5-Trichlorophenol	µg/L	Report	1/year	Grab
2,4,6-Trichlorophenol	µg/L	Report	1/year	Grab
2,4-Dichlorophenol	µg/L	Report	1/year	Grab
2,4-Dimethylphenol	µg/L	Report	1/year	Grab
2,4-Dinitrophenol	µg/L	Report	1/year	Grab
2-Chlorophenol	µg/L	Report	1/year	Grab
2-Methyl-4,6-Dinitrophenol	µg/L	Report	1/year	Grab
3-Methyl-4-Chlorophenol	µg/L	Report	1/year	Grab
Aluminum	µg/L	Report	2/year[2]	Grab
Ammonia, total as N	mg/L	Report	2/year[2]	Grab
COD	mg/L	Report	Quarterly[1]	Grab
Dinitrophenols	µg/L	Report	1/year	Grab

Effluent Parameters	Units	Effluent Limitations	Monitoring Requirements	
			Frequency	Sample Type
Hardness	mg/L as CaCO3	Report	2/year[2]	Grab
Iron	mg/L	Report	2/year[2]	Grab
Manganese	µg/L	Report	2/year[2]	Grab
Nitrate-Nitrite as N	mg/L	Report	2/year[2]	Grab
Nonylphenol	µg/L	Report	1/year	Grab
Orthophosphate (as P)	mg/L	Report	Quarterly[1]	Grab
Pentachlorophenol	µg/L	Report	1/year	Grab
Phenol	µg/L	Report	1/year	Grab
Phosphorus, total as P	mg/L	Report	Quarterly[1]	Grab
Total Kjeldahl Nitrogen	mg/L	Report	2/year[2]	Grab

Notes:

1. Quarters are defined as January 1st – March 31st, April 1st – June 30th, July 1st – September 30th, and October 1st – December 31st. Results must be reported on the March, June, September, and December DMRs.

2. One sample must be taken between January 1st and June 30th and a second sample must be taken between July 1st and December 31st. Results must be reported on the June and December DMRs

The proposed effluent limits for iron (for Outfall 001), TSS, and zinc are new. The bases for these new effluent limits are described below.

A. Basis for Effluent Limits

In general, the CWA requires that the effluent limits for a particular pollutant be the more stringent of either technology-based limits or water quality-based limits. Technology-based limits are set according to the level of treatment that is achievable using available technology. A water quality-based effluent limit is designed to ensure that the water quality standards applicable to a waterbody are being met and may be more stringent than technology-based effluent limits.

B. Pollutants of Concern

Pollutants of concern are those that either have technology-based limits or may need water quality-based limits. EPA identifies pollutants of concern for the discharge based on those which:

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

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

- Aluminum
- Ammonia
- Barium
- Boron
- Color
- Debris
- Iron
- Manganese

- Nitrogen (nitrate-nitrite, total Kjeldahl nitrogen)
- Oil and Grease
- Oxygen-demanding pollutants (COD, BOD_5)
- pH
- Phenolic compounds
- Phosphorus
- Temperature
- TSS
- Whole effluent toxicity
- Zinc

C. Technology-Based Effluent Limits

Effluent Limit Guidelines

For dischargers other than publicly owned treatment works (POTWs), for conventional pollutants, the CWA requires effluent limits based on the best conventional pollutant control technology (BCT), and, for toxic and non-conventional pollutants, effluent limits based on the best available technology economically achievable (BAT) (CWA Section 301(b) and 40 CFR 125.3(a)(2)).

Technology-based effluent limits may be established through application of EPA-promulgated effluent limit guidelines (ELGs), or on a case-by-case basis under Section 402(a)(1) of the CWA (these are referred to as best professional judgment or BPJ effluent limitations), or through a combination of these methods (40 CFR 125.3(c)).

EPA has promulgated ELGs for the timber products processing point source category in 40 CFR Part 429. ELGs in the plywood (Subpart C), wet storage (Subpart I), and sawmills and planing mills (Subpart K) subcategories are applicable to the PotlatchDeltic St. Maries Complex.

Subparts C and K require that there be no discharge of process wastewater. The definition of "process wastewater" at 40 CFR 429.11(c) specifically excludes non-contact cooling water, material storage yard runoff (either raw material or processed wood storage), boiler blowdown, and wastewater from washout of thermal oxidizers or catalytic oxidizers, wastewater from biofilters, or wastewater from wet electrostatic precipitators used upstream of thermal oxidizers or catalytic oxidizers installed by facilities covered by subparts B, C, D or M to comply with the national emissions standards for hazardous air pollutants (NESHAP) for plywood and composite wood products (PCWP) facilities (40 CFR part 63, subpart DDDD). For the dry process hardboard, veneer, finishing, particleboard, and sawmills and planing mills subcategories, fire control water is excluded from the definition.

The ELGs for wet storage (subpart I) require that there shall be no debris discharged [defined as "bark, twigs, branches, heartwood or sapwood that will not pass through a 2.54 cm (1.0 in) diameter round opening"] and that the pH shall be within the range of 6.0 to 9.0 standard units. The draft permit includes the prohibition on discharge of debris. The proposed pH effluent limits are water quality-based limits which are more stringent than the technology-based effluent limits.

Since non-contact cooling water is excluded from the definition of "process wastewater," and no technology-based limits are specified in the ELGs, there are no technology-based effluent limits applicable to non-contact cooling water.

Non-numeric Technology-based Effluent Limits for Stormwater

The draft permit proposes non-numeric technology-based effluent limits for stormwater which are consistent with those in EPA's 2021 MSGP. See the draft permit at Part I.C.2.

D. MSGP Benchmarks

EPA's 2021 MSGP includes benchmarks for facilities in Sector A (timber products) as shown in Table 11. The benchmark levels in EPA's MSGP are not effluent limits. An exceedance of the benchmark is not, in and of itself, a violation of the permit, rather it triggers corrective actions to resolve the exceedances.

In the draft permit, the MSGP's benchmarks for TSS and zinc have been replaced by water quality based effluent limitations. As discussed in more detail below, EPA has determined that effluent limitations for oxygen-demanding pollutants are not necessary, thus, no effluent limits or benchmarks are proposed for chemical oxygen demand (COD).

Table 11: MSGP Benchmarks for Timber Products

Parameter	Benchmark Monitoring Concentration
Chemical Oxygen Demand (COD)	120 mg/L
Total Suspended Solids (TSS)	100 mg/L
Total Zinc	40 µg/L[1]
Notes: 1. The zinc benchmarks are hardness dependent. The listed concentration is the benchmark for a hardness of 0 – 24.99 mg/L as $CaCO_3$. The median hardness of the St. Joe River at USGS stations 12415135 and 12415140 is 20 mg/L as $CaCO_3$.	

E. Water Quality-Based Effluent Limits

Statutory and Regulatory Basis

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

The regulations require the permitting authority to make this evaluation using procedures which account for existing controls on point and nonpoint sources of pollution, the variability of the pollutant in the effluent, species sensitivity (for toxicity), and where appropriate, dilution in the receiving water. The limits must be stringent enough to ensure that water

quality standards are met and must be consistent with any available wasteload allocation for the discharge in an approved TMDL. If there are no approved TMDLs that specify wasteload allocations for this discharge; all water quality-based effluent limits are calculated directly from the applicable water quality standards.

Reasonable Potential Analysis and Need for Water Quality-Based Effluent Limits

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

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

Per Section 12(1)(c) of the CDT WQS, mixing zones are established in CWA Section 401 certifications. Reasonable potential and effluent limit calculations are based on the mixing zones listed in Table 12. The acute mixing zones are sized based on the criteria in Section 4.3.3 of the TSD, as evaluated using the Cormix model (version 11.0 GTD). These criteria are:

- The acute water quality criterion or criterion maximum concentration (CMC) should be met within 10 percent of the distance from the edge of the outfall structure to the edge of the regulatory mixing zone in any spatial direction.
- The CMC should be met within a distance of 50 times the discharge length scale (which is the square root of the cross-sectional area of any discharge outlet) in any spatial direction.
- The CMC should be met within a distance of five times the local water depth in any horizontal direction from any discharge outlet.

If the CDT revises the allowable mixing zone in its final certification of this permit, the reasonable potential analysis and water quality-based effluent limit calculations will be revised accordingly.

Table 12. Mixing zones for outfall 001

Criteria Type	Season	Critical Low Flow (cfs)	Mixing Zone (% of Critical Low Flow)	Dilution Factor
Acute Aquatic Life (1Q10)	June - Sept.	125	0.283%	1.48
	Oct. - May		4.52%	4.33
Chronic Aquatic Life (except ammonia) (7Q10)	Year-round	258	25%	38.9
Chronic Aquatic Life (ammonia) (30B3)	Year-round	408	25%	60.9
Human Health Noncarcinogen (30Q5)	Year-round	363	25%	54.3

Criteria Type	Season	Critical Low Flow (cfs)	Mixing Zone (% of Critical Low Flow)	Dilution Factor
Human Health Carcinogen	Year-round	1076	25%	159.1

The reasonable potential and water quality-based effluent limit for specific parameters are summarized below. The calculations are provided in Appendix C.

Stormwater Discharges

In general, due to the intermittent nature of stormwater discharges and the 4-day averaging period for most chronic aquatic life water quality criteria, only acute aquatic life water quality criteria, which are generally 1-hour average concentrations, are of concern for the industrial stormwater discharges from Outfalls 002, 003, and 004.

Expression of effluent limits for non-continuous discharges is governed by 40 CFR 122.45(e), which states that permitting authorities should consider the following factors, as appropriate:

1. Frequency (for example, a batch discharge shall not occur more than once every 3 weeks);

2. Total mass (for example, not to exceed 100 kilograms of zinc and 200 kilograms of chromium per batch discharge);

3. Maximum rate of discharge of pollutants during the discharge (for example, not to exceed 2 kilograms of zinc per minute); and

4. Prohibition or limitation of specified pollutants by mass, concentration, or other appropriate measure (for example, shall not contain at any time more than 0.1 mg/1 zinc or more than 250 grams (1⁄4 kilogram) of zinc in any discharge).

Because stormwater discharges occur in response to precipitation, it is not practicable to establish effluent limits on the frequency, mass, or maximum discharge rate of a stormwater discharge. Thus, the effluent limits for zinc for Outfalls 002, 003, and 004 are expressed as maximum daily effluent limits on concentration, consistent with 40 CFR 122.45(e)(4). The effluent limits for zinc for Outfalls 002, 003, and 004 are based solely on the acute (1-hour average) water quality criteria. The effluent limits for TSS for Outfalls 002, 003, and 004 are also expressed in terms of concentration, although they are rolling average limits instead of maximum daily limits.

EPA has no flow data for either the stormwater discharges or the receiving water. Thus, EPA cannot calculate dilution factors for Outfalls 002, 003, or 004 and no mixing zones are proposed for these outfalls.

<u>Aluminum</u>

The Coeur d'Alene Tribe's WQS do not include numeric water quality criteria for aluminum. The Tribe does have a narrative criterion for toxic substances, which reads, "Toxic substances shall not be introduced into Reservation TAS Waters in concentrations which have the potential either singularly or cumulatively to adversely affect existing and designated water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the Department, except as allowed for under Mixing Zones."

40 CFR 122.44(d)(1)(vi) states that "where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of" three options provided by the regulation. One of the options, in 40 CFR 122.44(d)(1)(vi)(B) is to "establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under Section 304(a) of the CWA, supplemented where necessary by other relevant information."

EPA published revised 304(a) aquatic life criteria for aluminum in freshwater in December 2018. The aluminium 304(a) criteria use Multiple Linear Regression (MLR) models to normalize the toxicity data. The criteria values are calculated based on a site's pH, total hardness, and dissolved organic carbon (DOC).

Two DOC results are available from NWIS station 12415140 (St. Joe River Near Chatcolet, ID), which is downstream from the facility. These samples were also analyzed for pH and hardness. EPA used the aluminum criteria calculator to calculate the values of the acute and chronic water quality based on these two contemporaneous sets of DOC, hardness and pH data.[1] The results are shown in Table 13.

Table 13: Aluminum Criteria Calculator Results for Contemporaneous Inputs

Date	DOC (mg/L)	Hardness (mg/L as $CaCO_3$)	pH	Acute aluminum criterion (µg/L)	Chronic aluminum criterion (µg/L)
7/18/2005	1.05	25.6	7.1	720	350
8/25/2005	1.52	29.7	6.8	630	280

Although there were only two DOC results available for the receiving water, there were 100 contemporaneous sets of pH and hardness data available at USGS stations 12415135 and 12415140. Of these, 33 were collected from June - September and 67 were collected from October - May.

EPA calculated the values of the aluminum criteria for each pair of contemporaneous pH and hardness values, using the lower of the two DOC concentrations measured (1.05 mg/L). Results are summarized in Table 14.

Table 14: Aluminum Criteria Summary (10^{th} Percentiles)

Season	10^{th} Percentile Acute aluminum criterion (µg/L)	10^{th} Percentile Chronic aluminum criterion (µg/L)
June - Sept.	434	216
Oct. - May	232	126

[1] The aluminum criteria calculator and other information about the recommended criteria for aluminum are available at: https://www.epa.gov/wqc/aquatic-life-criteria-aluminum

Since there are only two results for DOC, EPA considers the criteria listed in Table 14 to be more representative of the variability of water chemistry (and, in turn, aluminum toxicity) in the St. Joe River in the vicinity of the discharge relative to using the lower of the two sets of criteria values calculated from contemporaneous DOC, pH, and hardness data. Thus, EPA will use the aluminum criteria listed in Table 14 to interpret the Tribe's narrative criterion for toxic substances.

A single result of 500 µg/L total aluminum was available from NWIS station 12415075 (St. Joe River at St. Maries, Idaho), which is near the facility. However, this sample was taken on May 22, 1980, which was four days after the eruption of Mt. St. Helens, and ash from the eruption fell in St. Maries, Idaho. As such, the aluminum result from NWIS station 12415075 may not be representative of typical aluminum concentrations.

Ambient data for total aluminum were also available from NWIS station 12413875 (St. Joe River at Red Ives Ranger Station). EPA used ambient data from this station even though this location is further upstream from the facility than station 12415075 (St. Joe River at St. Maries, Idaho), since more data were available, and the data were more recent and not influenced by the Mt. St. Helens eruption.

There is only one effluent sample available for aluminum for Outfall 001 (reported on the application). This means the effluent concentration of aluminum is uncertain, and this uncertainty is represented in the reasonable potential analysis as a large reasonable potential multiplying factor of 13.2 (see the TSD at Table 3-1). If more effluent data were available for aluminum, the reasonable potential multiplying factor would be smaller, and this may result in a finding that the discharge does not have the reasonable potential to cause or contribute to excursions above water quality standards for aluminum. As explained above, the upstream concentration of aluminum is uncertain as well. Because of the uncertainty in the effluent and upstream concentrations of aluminum, EPA has proposed effluent and surface water monitoring requirements for aluminum in the draft permit. The twice-per-year effluent monitoring frequency will result in 10 samples being collected over the 5-year permit term. Ten samples will ensure that a standard deviation and mean of the data can be calculated with sufficient confidence, when the permit is reissued (USEPA, 1991).

Ammonia

Ammonia criteria are based on a formula which relies on the pH and temperature of the receiving water, because the fraction of ammonia present as the toxic, un-ionized form increases with increasing pH and temperature. Therefore, the criteria become more stringent as pH and temperature increase.

The equations used to determine water quality criteria for ammonia are below. EPA disapproved the ammonia criteria at Provision 7(12) and the entry for ammonia in Provision 7(10) of the CDT WQS (i.e., these criteria are not in effect for CWA purposes). As such, the ammonia criteria at IDAPA 58.01.02.250 were used as reference in evaluating reasonable potential for ammonia, which will ensure protection of Idaho downstream uses.

Table 15: Ammonia Criteria

Total ammonia nitrogen criteria (mg N/L):

Annual Basis

Based on IDAPA 58.01.02

INPUT	
1. Receiving Water Temperature (deg C):	22.8
2. Receiving Water pH:	7.50
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)	**13.28**
Chronic Criterion (CCC)	**2.56**

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

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

A reasonable potential calculation showed that the discharge from Outfall 001 does not have the reasonable potential to cause or contribute to a violation of the water quality criteria for ammonia. See Appendix C for reasonable potential and effluent limit calculations for ammonia.

Monitoring requirements are proposed for ammonia. The twice-per-year effluent monitoring frequency will result in 10 samples being collected over the 5-year permit term. Ten samples will ensure that a standard deviation and mean of the data can be calculated with sufficient confidence, when the permit is reissued (USEPA, 1991).

Barium

The Coeur d'Alene Tribe's WQS do not include numeric water quality criteria for barium. The Tribe does have a narrative criterion for toxic substances, which reads, "Toxic substances shall not be introduced into Reservation TAS Waters in concentrations which have the potential either singularly or cumulatively to adversely affect existing and designated water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the Department, except as allowed for under Mixing Zones."

40 CFR 122.44(d)(1)(vi) states that "where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of" three options provided by the regulation. One of the options, in 40 CFR 122.44(d)(1)(vi)(B) is to "establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information."

EPA has published a recommended human health criterion for barium of 1,000 µg/L for the consumption of water and organisms (USEPA, 1986). EPA has determined that the discharge from Outfall 001 does not have the reasonable potential to cause or contribute to excursions above the recommended water quality criterion for barium. Therefore, no effluent limits are proposed for barium. Since the measured effluent concentration of barium for Outfall 001 (Table 2) is well below the recommended water quality criterion, no monitoring requirements are proposed in the draft permit.

Boron

The Coeur d'Alene Tribe's WQS do not include numeric water quality criteria for boron. The Tribe does have a narrative criterion for toxic substances, which reads, "Toxic substances shall not be introduced into Reservation TAS Waters in concentrations which have the potential either singularly or cumulatively to adversely affect existing and designated water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the Department, except as allowed for under Mixing Zones."

40 CFR 122.44(d)(1)(vi) states that "where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of" three options provided by the regulation. One of the options, in 40 CFR 122.44(d)(1)(vi)(B) is to "establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information."

EPA has published a recommended criterion of 750 µg/L for boron, for irrigation of sensitive crops (USEPA, 1986). EPA has determined that the discharge from Outfall 001 does not have the reasonable potential to cause or contribute to excursions above the recommended water quality criterion for boron. Therefore, no effluent limits are proposed for boron. Since the measured effluent concentration of boron for Outfall 001 (Table 2) is well below the recommended water quality criterion, no monitoring requirements are proposed in the draft permit.

Iron

The Coeur d'Alene Tribe's WQS do not include numeric water quality criteria for iron. The Tribe does have a narrative criterion for toxic substances, which reads, "Toxic substances shall not be introduced into Reservation TAS Waters in concentrations which have the potential either singularly or cumulatively to adversely affect existing and designated water uses, cause acute or chronic toxicity to the most sensitive biota dependent upon those waters, or adversely affect public health, as determined by the Department, except as allowed for under Mixing Zones."

40 CFR 122.44(d)(1)(vi) states that "where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of" three options provided by the regulation. One of the options, in 40 CFR 122.44(d)(1)(vi)(B) is to "establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information."

EPA has published a recommended chronic criterion of 1,000 µg/L for iron in freshwater (USEPA, 1986). EPA has determined that the discharge from Outfall 001 has the reasonable potential to cause or contribute to excursions above the 304(a) criterion for iron. Even though there is only one effluent sample for iron, and this results in a large reasonable

potential multiplying factor of 13.2 (see the TSD at Table 3-1), the measured effluent concentration of iron for Outfall 001 is high enough that additional effluent samples (which would result in a smaller reasonable potential multiplying factor) are not likely to change the outcome of the reasonable potential analysis. The draft permit therefore proposes water quality-based effluent limits for iron, for Outfall 001.

EPA has proposed effluent monitoring for iron at Outfalls 002, 003, and 004. The twice-per-year effluent monitoring frequency will result in 10 samples being collected over the 5-year permit term. Ten samples will ensure that a standard deviation and mean of the data can be calculated with sufficient confidence, when the permit is reissued (USEPA, 1991).

Manganese

The Coeur d'Alene Tribe's WQS do not include numeric water quality criteria for manganese. The Tribe does have a narrative criterion, for taste and odor effects, which reads, "Water contaminants from anthropogenic causes shall be limited to concentrations that will not impart unpalatable flavor to fish, or result in offensive odor or taste arising from the water, or otherwise interfere with the existing and designated uses of the water."

40 CFR 122.44(d)(1)(vi) states that "where a State has not established a water quality criterion for a specific chemical pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits using one or more of" three options provided by the regulation. One of the options, in 40 CFR 122.44(d)(1)(vi)(B) is to "establish effluent limits on a case-by-case basis, using EPA's water quality criteria, published under section 304(a) of the CWA, supplemented where necessary by other relevant information."

EPA has published a recommended criterion of 50 µg/L manganese for the consumption of water and organisms, to minimize objectionable qualities such as laundry stains and objectionable tastes in beverages. EPA has used this recommendation to interpret the Tribe's narrative criterion for taste and odor effects.

There is only one effluent sample available for manganese (reported on the application for Outfall 001). This means the effluent concentration of manganese is uncertain, and this uncertainty is represented in the reasonable potential analysis for human health criteria as a large reasonable potential multiplying factor of 2.49. If more effluent data were available for manganese, the reasonable potential multiplying factor would be smaller, and this may result in a finding that the discharge does not have the reasonable potential to cause or contribute to excursions above water quality standards for manganese. As explained under "Surface Water Monitoring" below, most of the available data for manganese in the receiving water were collected downstream of the discharge. Because of the uncertainty in the effluent and upstream concentrations of manganese, EPA has proposed effluent monitoring and surface water requirements for manganese in the draft permit. The twice-per-year effluent monitoring frequency will result in 10 samples being collected over the 5-year permit term. Ten samples will ensure that a standard deviation and mean of the data can be calculated with sufficient confidence, when the permit is reissued (USEPA, 1991).

pH

Sections 19(1), (2), and (4) of the CDT WQS establish pH criteria for three use classifications: Domestic Water Supply; Agricultural Water Supply; and Bull Trout and Cutthroat Trout. pH must be maintained within the range of 6.5 to 8.5, with a human caused variation within this range of less than 0.5 units over any 24-hour period.

As explained above, the technology-based effluent limit for discharges from wet storage of logs is 6.0 to 9.0 standard units. As explained below, more stringent water quality-based effluent limits are proposed in the draft permit.

For Outfall 001, a mixing zone is not necessary for the upper-bound pH criterion of 8.5 standard units, because the maximum effluent pH reported for outfall 001 is 8.1 standard units. A mixing zone cannot be granted for the lower-bound pH criterion of 6.5 standard units, because the 5th percentile ambient pH observed at USGS stations 12415135 and 12415140 is 6.4 standard units. Therefore, the receiving water does not have the assimilative capacity to dilute discharges with a pH less than the lower-bound criterion of 6.5. Therefore, no mixing zones are authorized for pH, and the draft permit establishes pH effluent limits of 6.5 – 8.5 standard units for Outfall 001. These WQBELs for pH are more stringent than the TBELs discussed in Section IV.C.

For Outfalls 002, 003, and 004, no mixing zones are proposed. Thus, the draft permit establishes pH effluent limits of 6.5 – 8.5 standard units for these outfalls. Effluent data indicate that the permittee can comply with these water quality-based effluent limits for pH (see Table 3, Table 4, and Table 5).

Dissolved Oxygen (DO), COD and BOD_5

Section 19(4)(ii) of the CDT WQS require that DO concentrations shall exceed 8 mg/L at all times in order to meet Aquatic Life uses. Natural decomposition of organic material in wastewater effluent impacts dissolved oxygen in the receiving water at distances far outside of the regulated mixing zone. The BOD_5 of an effluent sample indicates the amount of biodegradable material in the wastewater and estimates the magnitude of oxygen consumption the wastewater will generate in the receiving water. Nutrients such as ammonia and phosphorus cause excessive plant and algae growth and decay which can also significantly affect the amount of dissolved oxygen available.

EPA has limited effluent data for BOD_5 for this facility. Only six results, collected between 1997 and 2001, are available for Outfall 001. The maximum effluent concentration of BOD_5 was 48 mg/L; at the maximum reported effluent flow rate of 1.1 mgd, this concentration would result in a BOD_5 loading of 440 lb/day. At the 95th percentile flow rate of 0.40 mgd, a concentration of 48 mg/L BOD_5 would result in a BOD_5 loading of 160 lb/day. These loads are less than the average monthly and average weekly permitted loads of BOD_5 for the nearby City of St. Maries WWTP (500 and 751 lb/day, respectively). Although no flow data are available for Outfalls 002, 003, or 004, the stormwater basins for these outfalls are smaller than the basin draining to Outfall 001, thus, BOD_5 loading from these outfalls is also likely to be small. Due to the small loading, the discharge of BOD_5 does not have the reasonable potential to cause or contribute to a violation of dissolved oxygen criteria in TAS or downstream ID waters.

The permit proposes quarterly effluent monitoring for COD, consistent with the 2020 MSGP. Since EPA has determined that effluent limits for oxygen demanding pollutants are not necessary, no benchmarks or effluent limits are proposed for COD. The permit proposes monitoring requirements for COD because it is useful as a bulk indicator of organic matter in the discharge.

Phosphorus (P) and Nitrogen (N)

Section 5(4) of the CDT WQS require that "nutrients or other substances from anthropogenic causes shall not be present in concentrations which will produce objectionable algal densities or nuisance aquatic vegetation, result in a dominance of nuisance species, or otherwise cause nuisance conditions."

Reasonable potential was not found when evaluating Total P and N against the narrative criteria. The draft permit proposes Total P and orthophosphate monitoring in the effluent. In-stream Total P and orthophosphate data were also available. The 90th percentile Total P level measured in the receiving water downstream from the facility was 49 µg/L and the geometric mean concentration was 20 µg/L (Table 6). The 90th percentile concentration is below EPA's recommendation for preventing biological nuisances and to control accelerated or cultural eutrophication in streams flowing to lakes and reservoirs, which is 50 µg/L (USEPA, 1986).

The draft permit requires the facility to monitor the effluent for total phosphorus, orthophosphate, total Kjeldahl nitrogen, nitrate-nitrite, and ammonia (as nitrogen) given the Lake Management Plan's stated goal of limiting basin-wide nutrient inputs that impair lake water quality conditions (IDEQ&CdAT, 2009). These monitoring requirements will be used to assess if limits may be required in future permitting actions.

No effluent limits are proposed for nitrogen, including ammonia. The twice-per-year effluent monitoring frequency for nitrogen compounds will result in 10 samples being collected over the 5-year permit term. Ten samples will ensure that a standard deviation and mean of the data can be calculated with sufficient confidence, when the permit is reissued (USEPA, 1991).

Phosphorus is generally the limiting nutrient (i.e., the nutrient that controls primary productivity) in freshwaters, and particularly in lakes and reservoirs. Therefore, more frequent monitoring of total phosphorus and orthophosphate is proposed in the draft permit, specifically monthly for outfall 001, and quarterly for outfalls 002, 003, and 004.

Temperature

Section 19(4)(iii) of the CDT WQS establishes seasonal (June 1 – September 30) temperature standards to protect the Bull Trout and Cutthroat Trout use classification.

Section 19(4)(iii) of the CDT WQS states: "From June 1, through September 30, the 7-day average of the daily maximum temperatures within the hypolimnion is not to exceed 16 °C. In thermally stratified TAS waters the hypolimnetic temperature shall be determined by natural conditions as defined in Section 19(4),(a),(ii),(A) and pursuant to Section 4 of these standards. In TAS waters greater than 15 meters this standard applies to the bottom 80 percent of the lake water column present below the metalimnion. In TAS waters less than 15 meters and greater than 8 meters this standard applies to only the bottom 50 percent of the water column present below the metalimnion. TAS waters exhibiting total water column

depths less than 8 meters are not expected to maintain a stable stratified condition and are therefore exempt from this standard."

Outfall 001 discharges on the left bank of the St. Joe River. Near the outfall location, the river is shallower than 8 meters (26 feet) for most of its width, and the portion of the river cross section which is deeper than 8 meters is closer to the right bank. The discharge from Outfall 001 will be warmer than the ambient water and therefore buoyant, and, since it is a side bank discharge, modeling with Cormix predicts that the plume will rise to the surface and attach to the left bank (this behavior is visible in Figure 2). As such, the discharge from Outfall 001 is unlikely to affect temperatures in the deeper portion of the St. Joe River where stratification may develop. Thus, the discharge does not have the reasonable potential to cause or contribute to excursions above water quality standards for temperature from June 1st through September 30th.

There are no CDT WQS in effect for temperature for Clean Water Act purposes between October 1st and May 31st. Thus, the WQS at IDAPA 58.01.02.250.02.b were used as a reference to evaluate reasonable potential for October 1st – May 31st. The Idaho Water Quality Standards designate the St. Joe River, from the St. Maries River to its mouth, for cold water aquatic life. The applicable Idaho water quality standard for waters so designated is: "Water temperatures of twenty-two (22) degrees C or less with a maximum daily average of no greater than nineteen (19) degrees C." EPA has determined that the discharge does not have the reasonable potential to cause or contribute to excursions above the Idaho water quality criteria for temperature, from October – May.

EPA used the Cormix model to evaluate the discharge against EPA's recommendations to protect salmonids from thermal plumes (USEPA, 2003). This modeling showed that the discharge will not cause migration blockage or thermal shock to salmonids.

EPA does not have temperature effluent data for Outfalls 002, 003, and 004. However, there is no anthropogenic source of heat to these outfalls, thus heat is not a pollutant of concern for these outfalls and no temperature effluent limits or monitoring requirements are proposed for these outfalls.

Total Suspended Solids

Section 19(2)(b) of the CDT WQS includes the following EPA-approved numeric criterion for total suspended solids, for agricultural water supply uses: The concentration of total suspended solids is not to exceed an arithmetic mean of 75 mg/L during periods when the surface water is used an agricultural water supply, based on a minimum of three samples.

The CDT WQS do not include numeric water quality criteria for TSS for other beneficial uses. The Tribe's TSS criterion for agricultural water supply uses may not be protective of other uses such as aquatic life, if applied to an entire waterbody. For example, EPA-approved sediment TMDLs for Idaho rivers that have been established to protect aquatic life uses generally have lower TSS concentration targets with shorter averaging periods relative to the 75 mg/L arithmetic mean criterion for agricultural water supply uses. For example, the *Potlatch River Subbasin Assessment and TMDLs* establishes a monthly average TSS target of 50 mg/L and a maximum daily target of 80 mg/L (IDEQ, 2008).

For Outfall 001, EPA proposes to implement the agricultural water supply criterion for TSS without a mixing zone, as an average monthly limit set equal to the arithmetic mean criterion

of 75 mg/L. The proposed maximum daily limit of 177 mg/L is based on the average monthly limit and observed effluent variability, as described in Table 5-3 of the TSD (USEPA, 1991). See Table 16 below for the calculation.

For Outfalls 002, 003, and 004, due to the intermittent nature of stormwater and the quarterly monitoring frequency, EPA proposes to implement the agricultural water supply criterion for TSS as a rolling average limit. Specifically, the maximum allowable 3-quarter rolling average is 75 mg/L. This is consistent with the criterion, which is an arithmetic mean value based on at least three samples.

Although these limits are based on the criterion for agricultural water supply, EPA believes these limits will ensure protection of more sensitive beneficial uses such as aquatic life after mixing.

Table 16: Calculation of Maximum Daily Limit for TSS for Outfall 001

Multiplier to Calculate Maximum Daily Limit from Average Monthly Limit

Number of Samples per Month Set (n)			4
Coefficient of Variation (CV) = Std. Dev./Mean			0.855
σ = std deviation	$\sigma^2=\ln(CV^2+1)$		0.740
Average Monthly Limit (AML),	$\exp(z\sigma_n-0.5z\sigma_n^2)$; where % probability basis =	95%	1.80
Maximum Daily Limit (MDL),	$\exp(z\sigma-0.5z\sigma^2)$; where % probability basis=	99%	4.26
Ratio MDL/AML			**2.36**

Reference: TSD Page 106

Calculation:	**AML**	**x**	**Multiplier=**	**MDL**
MDL = AML x Multiplier	75	x	2.36	= 177

Turbidity

EPA partially disapproved the numeric turbidity criteria in Provisions 19(1)(a) and 19(4)(a)(iv) of the CDT WQS (i.e., not in effect for CWA purposes). However, Section 5(5) of the CDT WQS establishes a narrative criterion for turbidity: "*Turbidity shall not be at a level to impair designated uses or aquatic biota.*"

As explained above, EPA has proposed water quality-based effluent limits for TSS. EPA believes the TSS limits will ensure compliance with the Tribe's narrative criterion for turbidity.

Zinc

Section 7 of the CDT WQS includes numeric water quality criteria for zinc. The aquatic life criteria for zinc have been approved by EPA, and they are dependent upon hardness. The 5th percentile hardness measured at USGS stations 12415135 and 12415140, downstream from the facility, is 12.1 mg/L as $CaCO_3$ from October - May and 14.0 mg/L as CaCO3 from June - September (Table 6).

EPA does not have hardness data for the receiving water for Outfalls 002, 003, or 004. The proposed quarterly monitoring frequency for Outfalls 002, 003, and 004 does not support seasonal effluent limits. Thus, for Outfalls 002, 003, and 004, EPA has used the year-round 5th percentile hardness measured at USGS stations 12415135 and 12415140, which is 12.6 mg/L as CaCO3. The resulting water quality criteria for zinc are listed in Table 17.

Table 17: Water Quality Criteria for Zinc

Season	Acute zinc criterion (µg/L)	Chronic zinc criterion (µg/L)
June - Sept.	22.15	22.33

Season	Acute zinc criterion (µg/L)	Chronic zinc criterion (µg/L)
Oct. - May	19.57	19.74
Year-round	20.3	20.4

The 90th percentile concentration of zinc measured at USGS stations 12415135 and 12415140 is 3.82 µg/L (Table 6).

EPA has determined that the discharges from all four outfalls have the reasonable potential to cause or contribute to excursions above the CDT WQS for zinc and has proposed water quality-based effluent limits for zinc in the draft permit.

40 CFR 122.45(d) states that, for continuous discharges, effluent limitations shall unless impracticable be stated as maximum daily and average monthly discharge limitations. Effluent limits for outfall 001 are stated as maximum daily and average monthly limits.

Outfalls 002, 003, and 004 discharge only stormwater and are therefore not continuous. Zinc effluent limits for these outfalls are expressed exclusively as maximum daily limits and are based on the acute water quality criterion for zinc.

EPA also evaluated reasonable potential for the discharge to cause or contribute to Idaho's human health criteria for zinc, which are less stringent than the Tribe's aquatic life criteria. EPA determined that none of the discharges have the reasonable potential to cause or contribute to excursions above Idaho's human health quality criteria for zinc.

Additional Narrative Criteria

Section 5 of the CDT WQS includes the following narrative criteria.

- Floating Solids, Oil and Grease. All waters shall be free from visible oils, scum, foam, grease, and other floating materials and suspended substances of a persistent nature resulting from anthropogenic causes.
- Color. True color-producing materials resulting from anthropogenic causes shall not create an aesthetically undesirable condition; nor should color inhibit photosynthesis or otherwise impair the existing and designated uses of the water.

The criterion for floating solids, oil and grease has been incorporated as a narrative effluent limitation in the proposed permit. The technology-based limit prohibiting the discharge of debris, defined as "bark, twigs, branches, heartwood or sapwood that will not pass through a 2.54 cm (1.0 in) diameter round opening," will help ensure compliance with the narrative criterion for floating solids (See Section IV.C).

The permittee reported a measurement of 90 color units for Outfall 001 on its permit application. *Quality Criteria for Water 1986* states that "the source of supply should not exceed 75 color units on the platinum-cobalt scale for domestic water supplies" (USEPA, 1986). EPA expects that the discharge of color will not have the reasonable potential to cause or contribute to excursions above the Tribe's narrative criterion for color. Thus, no effluent limits are proposed for color.

The 2021 application for Outfalls 002, 003, and 004 included the results of one analysis for oil and grease at each of these outfalls. Outfall 004 was the only outfall in which oil and grease was detected (Table 5). The permit contains a narrative effluent limits based upon the narrative water quality standard.

F. Antibacksliding

Section 402(o) of the Clean Water Act and 40 CFR 122.44(l) generally prohibit the renewal, reissuance or modification of an existing NPDES permit that contains effluent limits, permit conditions or standards that are less stringent than those established in the previous permit (i.e., anti-backsliding) but provides limited exceptions. For explanation of the antibacksliding exceptions refer to Chapter 7 of the Permit Writers Manual, *Final Effluent Limitations and Anti-backsliding* (USEPA, 2010).

All effluent limits in the draft permit are at least as stringent as those in the 1996 individual permit and the MSGP.

V. Monitoring Requirements

A. Basis for Effluent and Surface Water Monitoring

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

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

B. 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 EPA-approved test methods (generally found in 40 CFR Part 136) or as specified in the permit.

Monitoring Changes from the Previous Permit

Parameters with New Effluent Limits

Monitoring requirements for iron (for Outfall 001), TSS and zinc are proposed to determine compliance with the new effluent limits proposed for these pollutants.

Phenolic Compounds

The permit application for Outfall 001 states that phenolic compounds from wood and bark may be present in the discharge. The permit application also reported a result (from a single analysis) of 0.3 mg/L (300 µg/L) total phenols. The permittee used EPA method 420.1 for the analysis of total phenols; it is not possible to differentiate between different kinds of phenols using this method.

The draft permit proposes to require monitoring once per year for all phenolic compounds which are subject to numeric water quality criteria in waters of the Coeur d'Alene Tribe or the State of Idaho or for which EPA has published a 304(a) criterion. The phenolic compounds to be monitored are:

- 2,4,5-Trichlorophenol

- 2,4,6-Trichlorophenol
- 2,4-Dichlorophenol
- 2,4-Dimethylphenol
- 2,4-Dinitrophenol
- 2-Chlorophenol
- 2-Methyl-4,6-Dinitrophenol
- 3-Methyl-4-Chlorophenol
- Dinitrophenols
- Nonylphenol
- Pentachlorophenol
- Phenol

Whole Effluent Toxicity (WET)

The 1996 permit required whole effluent toxicity testing using *Ceriodaphnia dubia* and *Pimephales promelas* (fathead minnow) for Outfall 001 in August 2001. Results are summarized in Table 18. Since the available data do not indicate any statistically significant reduction in survival, reproduction or growth, no effluent limits are proposed for whole effluent toxicity.

Table 18: Whole Effluent Toxicity Data Summary

Species	Effect	NOEC (% effluent)	IC25 (% effluent)
Ceriodaphnia Dubia	Survival	100	N/A
	Reproduction	100	>100
Pimephales promelas	Survival	100	N/A
	Growth	100	>100

EPA proposes to require whole effluent toxicity monitoring for Outfall 001. Since the chronic dilution factor is less than 100:1, the draft permit proposes to require chronic toxicity testing, rather than acute, consistent with the recommendation in Section 3.3.3 of the TSD (USEPA, 1991).

EPA proposes a monitoring frequency of once per year for whole effluent toxicity. The draft permit proposes a rotating quarterly schedule for whole effluent toxicity monitoring.

Sections 1.3.4 and 3.3.3 of the TSD recommend testing using three species representing three different phyla, such as a fish, an invertebrate, and a plant. Section 3.3.3 specifically recommends against selecting a "most sensitive" species, because the toxicants causing toxicity and their relative concentrations may not remain the same over time (USEPA, 1991). Thus, the draft permit requires WET testing using the fathead minnow, water flea, and green algae.

C. Surface Water Monitoring

In general, surface water monitoring may be required for pollutants of concern to assess the assimilative capacity of the receiving water for the pollutant. In addition, surface water monitoring may be required for pollutants for which the water quality criteria are dependent and to collect data for TMDL development if the facility discharges to an impaired water

body. Table 19 presents the proposed surface water monitoring requirements for the draft permit. Surface water monitoring results must be submitted with the DMR.

The permit for the City of St. Maries, which discharges to the St. Joe River very close to Outfall 001, requires surface water monitoring for several parameters that will also be useful in reissuing this permit. Since the City of St. Maries will be required to conduct surface water monitoring that can be used in reissuing this permit, EPA is proposing surface water quality monitoring requirements in the draft permit for the PotlatchDeltic St. Maries Complex that complement the requirements in the City of St. Maries permit to obtain a more robust data set.

The draft permit proposes continuous surface water monitoring of the St. Joe River for temperature from July 1st – September 30th; the City of St. Maries draft permit requires such monitoring from June 1st – 30th.

EPA proposes to require surface water monitoring of the St. Joe River for aluminum and manganese. Although some water quality data were available for these metals, which were used in the reasonable potential and effluent limit calculations, aluminum data were generally only available at the Red Ives Ranger Station NWIS station, which is a long distance upstream from the facility, and nearly all of the results for manganese were collected downstream from the facility.

EPA proposes to require surface water monitoring of the ditch receiving discharges from outfalls 002, 003, and 004 for parameters necessary to calculate the values of equation-based or model-based criteria. Hardness, DOC and pH are necessary to calculate the value of the MLR criteria for aluminum. Criteria for zinc as well as several other metals are hardness-based. In addition, temperature data are necessary to calculate the value of the ammonia criteria.

Table 19. Surface Water Monitoring of the St. Joe River in Draft Permit

Parameter	Units	Frequency[2]	Sample Locations	Minimum Level[3] (ML)
Temperature (July 1 – September 30)	°C	Continuous	Upstream	+/- 0.2 °C
Aluminum	µg/L	3/year	Upstream	10
Manganese	µg/L	3/year	Upstream	0.5

Footnotes:
1. The sampling type is by grab sampling for all parameters listed in table, except for continuous temperature monitoring.
2. 3/year sampling frequency is defined as December, February, and May of each year.
3. The Minimum Level must be no greater than listed.

Table 20. Surface Water Monitoring of the Unnamed Ditch in Draft Permit

Parameter	Units	Frequency[2]	Sample Locations	Minimum Level[3] (ML)
DOC	mg/L	1/year	Between Outfall 002 and the pump station	1
Hardness	mg/L as $CaCO_3$	1/year	Between Outfall 002 and the pump station	0.2
pH	s.u.	1/year	Between Outfall 002 and the pump station	N/A
Temperature	°C	1/year	Between Outfall 002 and the pump station	+/- 0.2 °C

Parameter	Units	Frequency[2]	Sample Locations	Minimum Level[3] (ML)
Footnotes: 1. The sampling type is by grab sampling for all parameters listed in table. 2. Annual receiving water monitoring must occur on a rotating quarterly schedule as follows: • First full calendar year: 1st Quarter (January 1—March 31); • Second calendar year: 2nd Quarter (April 1—June 30); • Third calendar year: 3rd Quarter (July 1—September 30); • Fourth calendar year: 4th Quarter (October 1—December 31) • Fifth calendar year, and thereafter: repeat rotating quarterly schedule, starting with annual testing during 1st Quarter. 3. The Minimum Level must be no greater than listed.				

D. Electronic Submission of Discharge Monitoring Reports

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

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

Part III.B.3 of the Permit requires that the Permittee submit a copy of the DMR to the Coeur d'Alene Tribe. Currently, the permittee may submit a copy to the Coeur d'Alene Tribe by one of three ways: 1. A paper copy may be mailed. 2. The email address for the Coeur d'Alene Tribe may be added to the electronic submittal through NetDMR, or 3. The permittee may provide the Coeur d'Alene Tribe viewing rights through NetDMR.

VI. Other Permit Conditions

A. Compliance Schedules

Compliance schedules are authorized by federal NPDES regulations at 40 CFR 122.47 and the Coeur d'Alene WQS at Section 15. Compliance schedules allow a discharger to phase in, over time, compliance with water quality-based effluent limitations when limitations are in the permit for the first time. EPA has found that a compliance schedule is appropriate for the new water quality-based effluent limits for TSS and zinc for all outfalls, because PotlatchDeltic cannot immediately comply with any of the new effluent limits for TSS or zinc on the effective date of the permit. Refer to Section 9.1.3, "Compliance Schedules" in the Permit Writers Manual (USEPA, 2010).

The Coeur d'Alene Tribe's compliance schedule authorizing provision limits schedules of compliance to "shortest practicable time, but not to exceed five years." The draft permit proposes a 5-year compliance schedule for the new water quality-based effluent limits for TSS and zinc for all outfalls.

B. Quality Assurance Plan

PotlatchDeltic is required to update the Quality Assurance Plan within 180 days of the effective date of the final permit. The Quality Assurance Plan must include of standard operating procedures the permittee must follow for collecting, handling, storing and shipping

samples, laboratory analysis, and data reporting. The plan must be retained on site and made available to EPA and the IDEQ upon request.

C. Stormwater Pollution Prevention Plan

The draft permit proposes to require the permittee to develop a stormwater pollution prevention plan (SWPPP). The SWPPP requirements in the draft permit are similar to those in the 2021 MSGP. As such, the permittee should be able to amend its existing SWPPP for compliance with the SWPPP requirements in the draft permit.

D. Environmental Justice

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

The facility is located within or near a Census block group that is potentially overburdened because of cumulative direct discharge pollution. In order to ensure that individuals near the facility are able to participate meaningfully in the permit process, EPA is making a copy of the draft permit and fact sheet available at the St. Maries public library.

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

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

E. Standard Permit Provisions

Sections III, IV and V of the draft permit contain standard regulatory language that must be included in all NPDES permits. The standard regulatory language covers requirements such as monitoring, recording, and reporting requirements, compliance responsibilities, and other general requirements.

VII. Other Legal Requirements

A. Endangered Species Act

The Endangered Species Act requires federal agencies to consult with National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries) and the USFWS if their actions

could beneficially or adversely affect any threatened or endangered species. The USFWS Information for Planning and Consultation (IPaC) system (https://ecos.fws.gov/ipac/location/index) identified the presence of the "Threatened" Bull Trout (Salvelinus confluentus) and critical habitat for the Bull Trout in the receiving water (Critical Habitat Unit #29).

The NOAA Fisheries Protected Resource App (https://www.webapps.nwfsc.noaa.gov/portal/apps/webappviewer/index.html?id=7514c715b8594944a6e468dd25aaacc9) did not reveal the presence of ESA-listed salmon or steelhead in the action area, or the presence of critical habitat for salmon or steelhead. According to the app, no other NOAA ESA-listed species occur in the action area.

EPA has prepared a biological evaluation (BE) which assesses the impact of the permitted discharges upon bull trout. The BE concludes that the discharges are not likely to adversely affect bull trout. EPA is seeking concurrence from the US Fish and Wildlife Service on this determination.

B. Essential Fish Habitat

Essential fish habitat (EFH) is the waters and substrate (sediments, etc.) necessary for fish to spawn, breed, feed, or grow to maturity. The Magnuson-Stevens Fishery Conservation and Management Act (January 21, 1999) requires EPA to consult with NOAA Fisheries when a proposed discharge has the potential to adversely affect EFH (i.e., reduce quality and/or quantity of EFH). A review of the action area in NOAA's Essential Fish Habitat Mapper (https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper) showed no EFH in the action area.

The EFH regulations define an adverse effect as any impact which reduces quality and/or quantity of EFH and may include direct (e.g. contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific, or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Because there is no EFH in the action area, EPA has determined that reissuance of the NPDES permit will not adversely affect EFH.

C. State Certification

Section 401 of the CWA requires EPA to seek State certification before issuing a final permit. As a result of the certification, the State may require more stringent permit conditions or additional monitoring requirements to ensure that the permit complies with water quality standards, or treatment standards established pursuant to any State law or regulation.

Since this facility's outfall 001 discharges to Coeur d'Alene tribal waters and the Tribe has been approved for TAS from EPA for purposes of the Clean Water Act, the Coeur d'Alene Tribe is the certifying authority for the discharge from outfall 001.

Since this facility's outfalls 002, 003, and 004 discharge to tribal waters for which the Coeur d'Alene Tribe has not been approved for TAS for purposes of the Clean Water Act, EPA is the certifying authority for outfalls 002, 003, and 004. The EPA is taking comment on the EPA's intent to certify this permit for outfalls 002, 003, and 004.

EPA had preliminary discussions with the Coeur d'Alene Tribe regarding the 401 certification during development of the draft permit. EPA is sending a request for final 401

certification to the Tribe. Based upon the preliminary discussions with the Tribe, EPA does not anticipate changes to the permit resulting from the final 401 certification.

D. Antidegradation

EPA has conducted a preliminary antidegradation analysis for the draft permit to characterize the potential impact of the point source discharge into Reservation TAS waters in consideration of the Tribe's Antidegradation Policy. The Tribe may reference EPA's preliminary analysis in their final Antidegradation Review to be provided with the final CWA Section 401 certification of the permit. See Appendix D.

E. Permit Expiration

The permit will expire five years from the effective date.

F. References

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Appendix A. Facility Information

Figure 1: Site Map

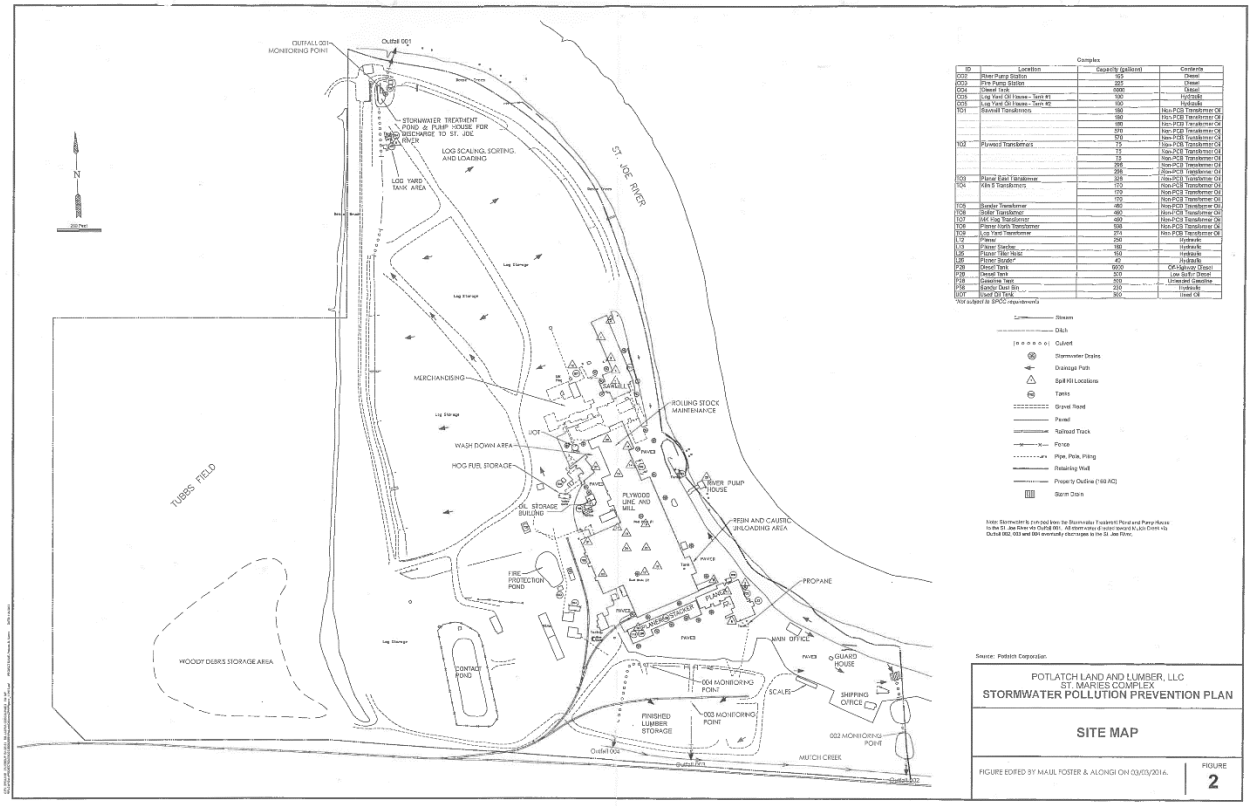

Figure 2: Discharge from Outfall 001 to St. Joe River

Appendix B. Reasonable Potential and Water Quality-Based Effluent Limit Formulae

A. Reasonable Potential Analysis

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

Mass Balance

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

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

where,

C_d	=	Receiving water concentration downstream of the effluent discharge (that is, the concentration at the edge of the mixing zone)
C_e	=	Maximum projected effluent concentration
C_u	=	Measured receiving water upstream concentration
Q_d	=	Receiving water flow rate downstream of the effluent discharge = Qe+Qu
Q_e	=	Effluent flow rate (set equal to the maximum effluent flow rate reported on DMRs)
Q_u	=	Receiving water low flow rate upstream of the discharge (1Q10, 7Q10 or 30B3)

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

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

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

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

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

Where:

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

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

$C_d = C_e$ Equation 4

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

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

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

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

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

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

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

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

Maximum Projected Effluent Concentration

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

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

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

where,

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

and

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

Where,

σ^2 = $\ln(CV^2 + 1)$

Z_{99} = 2.326 (z-score for the 99th percentile)

Z_{Pn} = z-score for the Pn percentile (inverse of the normal cumulative distribution function at a given percentile)

CV = coefficient of variation (standard deviation ÷ mean)

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

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

where MRC = Maximum Reported Concentration

Maximum Projected Effluent Concentration at the Edge of the Mixing Zone

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

Reasonable Potential

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

B. WQBEL Calculations

Calculate the Wasteload Allocations (WLAs)

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

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

Idaho's water quality criteria for some metals are expressed as the dissolved fraction, but the Federal regulation at 40 CFR 122.45(c) requires that effluent limits be expressed as total recoverable metal. Therefore, EPA must calculate a wasteload allocation 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 shown in equation 12. The criteria translator (CT) is equal to the conversion factor, because site-specific translators are not available for this discharge.

$$C_e=WLA=\frac{D\times(C_d-C_u)+C_u}{CT} \qquad \text{Equation 12}$$

The next step is to compute the "long term average" concentrations which will be protective of the WLAs. This is done using the following equations from EPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD):

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

$$LTA_c=WLA_c\times e^{(0.5\sigma_4^2-z\sigma_4)} \qquad \text{Equation 14}$$

where,

σ^2 = $\ln(CV^2+1)$

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

CV = coefficient of variation (standard deviation ÷ mean)

σ_4^2 = $\ln(CV^2/4+1)$

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

$$LTA_c=WLA_c\times e^{(0.5\sigma_{30}^2-z\sigma_{30})} \qquad \text{Equation 15}$$

where,

σ_{30}^2 = $\ln(CV^2/30+1)$

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

Derive the maximum daily and average monthly effluent limits

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

$$MDL = LTA\times e^{(z_m\sigma-0.5\sigma^2)} \qquad \text{Equation 16}$$

$$AML = LTA\times e^{(z_a\sigma_n-0.5\sigma_n^2)} \qquad \text{Equation 17}$$

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

σ_n^2 = $\ln(CV^2/n+1$

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

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

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

C. Critical Low Flow Conditions

The low flow conditions of a water body are used to determine water quality-based effluent limits. The Coeur d'Alene Tribe's water quality standards require criteria be evaluated at the following low flow receiving water conditions (See the Coeur d'Alene WQS at Section 12(2)) as defined below:

Acute aquatic life	1Q10
Chronic aquatic life	7Q10
Non-carcinogenic human health criteria	30Q5
Carcinogenic human health criteria	harmonic mean flow
Ammonia	30B3

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

Appendix C. Reasonable Potential and Water Quality-Based Effluent Limit Calculations

Table 21: Reasonable Potential and Effluent Limit Calculations for Outfall 001 (October - May)

Reasonable Potential Analysis (RPA) and Water Quality Effluent Limit (WQBEL) Calculations

Facility Name	Potlatch Deltic St. Maries 001 Winter
Facility Flow (mgd)	1.10
Facility Flow (cfs)	1.70

Critical River Flows (CFS) (IDAPA 58.01.02 03. b)		Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows
Aquatic Life - Acute Criteria - Criterion Max. Concentration (CMC)	**1Q10**	125	125	125	125	125	125	125
Aquatic Life - Chronic Criteria - Criterion Continuous Concentration (CCC)	**7Q10 or 4B3**	258	258	258	258	258	258	258
Ammonia	**30B3 or 30Q10/30Q5** (seasonal)	408	408	408	408	408	408	408
Human Health - Non-Carcinogen	**30Q5**	363	363	363	363	363	363	363
Human Health - carcinogen	**Harmonic Mean Flow**	1076	1,076	1,076	1,076	1,076	1,076	1,076

DF at defined percent of river flow allow	4.53%	**4.33**
DF at defined percent of river flow allow	25%	**38.9**

Receiving Water Data		Notes:	Annual Crit. Flows
Hardness, as mg/L $CaCO_3$	= 100 mg/L	5th % at critical flows	
Temperature, °C	Temperature, °C	95th percentile	14.725
pH, S.U.	pH, S.U.	95th percentile	7.5

Pollutants of Concern			AMMONIA, default: cold water, fish early life stages	ALUMINUM, total recoverable	Barium	IRON	MANGANESE	ZINC - SEE Toxic BiOp	Boron
Effluent Data	**Number of Samples in Data Set (n)**		6	1	1	1	1	13	1
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)		0.6	0.6	0.6	0.6	0.6	0.577	0.6
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C_e)		1,200	570	88	6660	1820	172	40
	Calculated 50th % Effluent Conc. (when n>10), Human Health Only								
Receiving Water Data	**90th Percentile Conc., µg/L - (C_u)**		20	60		800	28.04	3.82	
	Geometric Mean, µg/L, Human Health Criteria Only					285	13.4	1.9	
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	13,283	232.	#N/A	--	--	19.57	
	Aquatic Life Criteria, µg/L	Chronic	4,306	126.	#N/A	1,000.	--	19.74	750.
	Human Health Water and Organism, µg/L		--	--	#N/A	300.	50.	870.	
	Human Health, Organism Only, µg/L		--	--	1,000.	--	--	1,500.	
	Metals Criteria Translator, decimal (or default use Conversion Factor)	Acute		--	--	--	--	.978	1.
		Chronic		--		--	--	.986	1.
	Carcinogen (Y/N), Human Health Criteria Only		--	N	--	N	N	N	--
Percent River Flow Default Value = **25%**	**Aquatic Life - Acute**	**1Q10**	25%	25%	25%	25%	25%	25%	25%
	Aquatic Life - Chronic	7Q10 or 4B3		25%	25%	25%	25%	25%	25%
		30B3 or 30Q10/30Q5		25%	25%	25%	25%	25%	25%
	Human Health - Non-Carcinogen	Harmonic Mean	25%	25%	25%	25%	25%	25%	25%
	Human Health - Carcinogen	Harmonic Mean		25%	25%	25%	25%	25%	25%
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute	1Q10	4.3	4.3	4.3	4.3	4.3	4.3	4.3
	Aquatic Life - Chronic	7Q10 or 4B3		38.9	38.9	38.9	38.9	38.9	38.9
	Aquatic Life - Chronic Ammonia	30B3 or 30Q10/30Q5	60.9	60.9	60.9	60.9	60.9	60.9	60.9
	Human Health - Non-Carcinogen	Harmonic Mean		54.3	54.3	54.3	54.3	54.3	54.3
	Human Health - Carcinogen	Harmonic Mean		159.1	159.1	159.1	159.1	159.1	159.1

Aquatic Life Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.555	0.555	0.555	0.555	0.555	0.536	0.555
P_n	=(1-confidence level)$^{1/n}$, where confidence level =	**99%**	0.464	0.010	0.010	0.010	0.010	0.702	0.010
Multiplier (TSD p. 57)	$=\exp(z\sigma-0.5\sigma^2)/\exp[\text{normsinv}(P_n)\sigma-0.5\sigma^2]$, where	**99%**	3.8	13.2	13.2	13.2	13.2	2.6	13.2
Statistically projected critical discharge concentration (C_e)			4582	7522.22	1161.33	87891.22	24018.32	450.51	527.88
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone		Acute	1074	1783	--	20913	5569	104.7	121.9
(note: for metals, concentration as dissolved using conversion factor as translator)		Chronic	95	252	--	3039	645	15.1	13.6
Reasonable Potential to exceed Aquatic Life Criteria			**NO**	**YES**	**--**	**YES**	**NA**	**YES**	**NO**

Aquatic Life Effluent Limit Calculations

Number of Compliance Samples Expected per month (n)									
n used to calculate AML (if chronic is limiting then use min=4 or for ammonia min=30)			--	1	--	4	--	1	--
LTA Coeff. Var. (CV), decimal	(Use CV of data set or default = 0.6)		--	0.600	0.600	0.600	--	0.577	--
Permit Limit Coeff. Var. (CV), decimal	(Use CV from data set or default = 0.6)		--	0.600	0.600	0.600	--	0.577	--
Acute WLA, ug/L	C_d = (Acute Criteria x MZ_a) - C_u x (MZ_a-1)	Acute	--	804.8	--		--	72.0	--
Chronic WLA, ug/L	C_d = (Chronic Criteria x MZ_c) - C_u x (MZ_c-1)	Chronic	--	2,627.6	--	8,580.7	--	623.0	--
Long Term Ave (LTA), ug/L	WLAa x $\exp(0.5\sigma^2-z\sigma)$, Acute	**99%**	--	258.3	--	--	--	23.9	--
(99th % occurrence prob.)	WLAc x $\exp(0.5\sigma^2-z\sigma)$; ammonia n=30, Chronic	**99%**	--	1,385.8	--	4,525.3	--	336.0	--
Limiting LTA, ug/L	used as basis for limits calculation		--	258.3	--	4,525.3	--	23.9	--
Applicable Metals Criteria Translator (metals limits as total recoverable)				--	--	--	--	0.98	--
Average Monthly Limit (AML), ug/L , where % occurrence prob =		**95%**	**--**	**552**	**--**	**7025**	**--**	**51.1**	**--**
Maximum Daily Limit (MDL), ug/L , where % occurrence prob =		**99%**	**--**	**805**	**--**	**14096**	**--**	**73.7**	**--**
Average Monthly Limit (AML), mg/L			**--**	**0.552**	**--**	**7.02**	**--**	**0.051**	**--**
Maximum Daily Limit (MDL), mg/L			**--**	**0.805**	**--**	**14.1**	**--**	**0.074**	**--**
Average Monthly Limit (AML), lb/day			**--**	**5.06**	**--**	**64.4**	**--**	**0.47**	**--**
Maximum Daily Limit (MDL), lb/day			**--**	**7.38**	**--**	**129**	**--**	**0.68**	**--**

Human Health Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$	0.555	0.555	0.555	0.555	0.536	0.555
P_n	=(1-confidence level)$^{1/n}$ where confidence level =	**95%**	0.050	0.050	0.050	0.050	0.794	0.050
Multiplier	$=\exp(2.326\sigma-0.5\sigma^2)/\exp[\text{invnorm}(P_N)\sigma-0.5\sigma^2]$, prob. =	**50%**	2.490	2.490	2.490	2.490	0.644	2.490
Dilution Factor (for Human Health Criteria)			54.3	159.1	54.3	54.3	54.3	159.1
Max Conc. at edge of Chronic Zone, ug/L (C_d)			26.119	1.377	584.936	96.551	3.904	0.626
Reasonable Potential to exceed HH Water & Organism			**NO**	**#N/A**	**YES**	**YES**	**NO**	**NO**
Reasonable Potential to exceed HH Organism Only			**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Human Health, Water + Organism, Effluent Limit Calculations

Number of Compliance Samples Expected per month (n)					4	4	
Average Monthly Effluent Limit, ug/L	equals wasteload allocation	**--**	**--**	**1099.94**	**2002**	**--**	**--**
Maximum Daily Effluent Limit, ug/L	TSD Multiplier, Table 5-3, using 99th and 95th %	**--**	**--**	**2206.68**	**4016**	**--**	**--**
Average Monthly Limit (AML), lb/day		**--**	**--**	**10.091**	**18.4**	**--**	**--**
Maximum Daily Limit (MDL), lb/day		**--**	**--**	**20.244**	**36.8**	**--**	**--**

Table 22: Reasonable Potential and Effluent Limit Calculations for Outfall 001 (June - September)

Reasonable Potential Analysis (RPA) and Water Quality Effluent Limit (WQBEL) Calculations

Facility Name	Potlatch Deltic St. Maries 001 Summer
Facility Flow (mgd)	1.10
Facility Flow (cfs)	1.70

Critical River Flows (CFS)	(IDAPA 58.01.02 03. b)	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows	Annual Crit. Flows
Aquatic Life - Acute Criteria - Criterion Max. Concentration (CMC)	**1Q10**	125	125	125	125	125	125	125
Aquatic Life - Chronic Criteria - Criterion Continuous Concentration (CCC)	**7Q10 or 4B3**	258	258	258	258	258	258	258
Ammonia	**30B3 or 30Q10/30Q5** (seasonal)	408	408	408	408	408	408	408
Human Health - Non-Carcinogen	**30Q5**	363	363	363	363	363	363	363
Human Health - carcinogen	**Harmonic Mean Flow**	1076	1,076	1,076	1,076	1,076	1,076	1,076

DF at defined percent of river flow allow	0.65%	**1.48**
DF at defined percent of river flow allow	25%	**38.9**

Receiving Water Data		Notes:	Annual Crit. Flows
Hardness, as mg/L $CaCO_3$	= 100 mg/L	5th % at critical flows	
Temperature, °C	Temperature, °C	95th percentile	22.78
pH, S.U.	pH, S.U.	95th percentile	7.5

Pollutants of Concern			AMMONIA, default: cold water, fish early life stages	ALUMINUM, total recoverable	Barium	IRON	MANGANESE	ZINC - SEE Toxic BiOp	Boron
Effluent Data	**Number of Samples in Data Set (n)**		6	1	1	1	1	13	1
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)		0.6	0.6	0.6	0.6	0.6	0.577	0.6
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C_e)		1,200	570	88	6660	1820	172	40
	Calculated 50th % Effluent Conc. (when n>10), Human Health Only								
Receiving Water Data	**90th Percentile Conc., µg/L - (C_u)**		20	60		800	28.04	3.82	
	Geometric Mean, µg/L, Human Health Criteria Only					285	13.4	1.9	
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	13,283	434.	#N/A	--	--	22.15	
	Aquatic Life Criteria, µg/L	Chronic	2,562	216.	#N/A	1,000.	--	22.33	750.
	Human Health Water and Organism, µg/L		--	--	#N/A	300.	50.	870.	
	Human Health, Organism Only, µg/L		--	--	1,000.	--	--	1,500.	
	Metals Criteria Translator, decimal (or default use Conversion Factor)	Acute		--	--	--	--	.978	1.
		Chronic		--	--	--	--	.986	1.
	Carcinogen (Y/N), Human Health Criteria Only		--	N	--	N	N	N	--
Percent River Flow Default Value = **25%**	**Aquatic Life - Acute**	**1Q10**	25%	25%	25%	25%	25%	25%	25%
	Aquatic Life - Chronic	7Q10 or 4B3		25%	25%	25%	25%	25%	25%
		30B3 or 30Q10/30Q5		25%	25%	25%	25%	25%	25%
	Human Health - Non-Carcinogen	Harmonic Mean	25%	25%	25%	25%	25%	25%	25%
	Human Health - Carcinogen	Harmonic Mean		25%	25%	25%	25%	25%	25%
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute	1Q10	1.48	1.48	1.48	1.48	1.48	1.48	1.48
	Aquatic Life - Chronic	7Q10 or 4B3		38.9	38.9	38.9	38.9	38.9	38.9
	Aquatic Life - Chronic Ammonia	30B3 or 30Q10/30Q5	60.9	60.9	60.9	60.9	60.9	60.9	60.9
	Human Health - Non-Carcinogen	Harmonic Mean		54.3	54.3	54.3	54.3	54.3	54.3
	Human Health - Carcinogen	Harmonic Mean		159.1	159.1	159.1	159.1	159.1	159.1

Aquatic Life Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.555	0.555	0.555	0.555	0.555	0.536	0.555
P_n	=(1-confidence level)$^{1/n}$, where confidence level =	**99%**	0.464	0.010	0.010	0.010	0.010	0.702	0.010
Multiplier (TSD p. 57)	$=\exp(z\sigma-0.5\sigma^2)/\exp[\text{normsinv}(P_n)\sigma-0.5\sigma^2]$, where	**99%**	3.8	13.2	13.2	13.2	13.2	2.6	13.2
Statistically projected critical discharge concentration (C_e)			4582	7522.22	1161.33	87891.22	24018.32	450.51	527.88
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone		Acute	3103	5102	--	59645	16238	298.9	356.7
(note: for metals, concentration as dissolved using conversion factor as translator)		Chronic	95	252	--	3039	645	15.1	13.6
Reasonable Potential to exceed Aquatic Life Criteria			**NO**	**YES**	**--**	**YES**	**NA**	**YES**	**NO**

Aquatic Life Effluent Limit Calculations

Number of Compliance Samples Expected per month (n)									
n used to calculate AML (if chronic is limiting then use min=4 or for ammonia min=30)			--	1	--	4	--	1	--
LTA Coeff. Var. (CV), decimal	(Use CV of data set or default = 0.6)		--	0.600	0.600	0.600	--	0.577	--
Permit Limit Coeff. Var. (CV), decimal	(Use CV from data set or default = 0.6)		--	0.600	0.600	0.600	--	0.577	--
Acute WLA, ug/L	C_d = (Acute Criteria x MZ_a) - C_u x (MZ_a-1)	Acute	--	614	--		--	30.9	--
Chronic WLA, ug/L	C_d = (Chronic Criteria x MZ_c) - C_u x (MZ_c-1)	Chronic	--	6,129	--	8,580.7	--	724.0	--
Long Term Ave (LTA), ug/L	WLAa x $\exp(0.5\sigma^2-z\sigma)$, Acute	**99%**	--	197.0	--	--	--	10.3	--
(99th % occurrence prob.)	WLAc x $\exp(0.5\sigma^2-z\sigma)$; ammonia n=30, Chronic	**99%**	--	3,232.3	--	4,525.3	--	390.4	--
Limiting LTA, ug/L	used as basis for limits calculation		--	197.0	--	4,525.3	--	10.3	--
Applicable Metals Criteria Translator (metals limits as total recoverable)				--	--	--	--	0.98	--
Average Monthly Limit (AML), ug/L	, where % occurrence prob =	**95%**	**--**	**420**	**--**	**7025**	**--**	**22.0**	**--**
Maximum Daily Limit (MDL), ug/L	, where % occurrence prob =	**99%**	**--**	**614**	**--**	**14096**	**--**	**31.6**	**--**
Average Monthly Limit (AML), mg/L			**--**	**0.420**	**--**	**7.02**	**--**	**0.022**	**--**
Maximum Daily Limit (MDL), mg/L			**--**	**0.614**	**--**	**14.1**	**--**	**0.032**	**--**
Average Monthly Limit (AML), lb/day			**--**	**3.86**	**--**	**64.4**	**--**	**0.20**	**--**
Maximum Daily Limit (MDL), lb/day			**--**	**5.63**	**--**	**129**	**--**	**0.29**	**--**

Human Health Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$	0.555	0.555	0.555	0.555	0.536	0.555
P_n	=(1-confidence level)$^{1/n}$ where confidence level =	**95%**	0.050	0.050	0.050	0.050	0.794	0.050
Multiplier	$=\exp(2.326\sigma-0.5\sigma^2)/\exp[\text{invnorm}(P_N)\sigma-0.5\sigma^2]$, prob. =	**50%**	2.490	2.490	2.490	2.490	0.644	2.490
Dilution Factor (for Human Health Criteria)			54.3	159.1	54.3	54.3	54.3	159.1
Max Conc. at edge of Chronic Zone, ug/L (C_d)			26.119	1.377	584.936	96.551	3.904	0.626
Reasonable Potential to exceed HH Water & Organism			**NO**	**#N/A**	**YES**	**YES**	**NO**	**NO**
Reasonable Potential to exceed HH Organism Only			**NO**	**NO**	**NO**	**NO**	**NO**	**NO**

Human Health, Water + Organism, Effluent Limit Calculations

Number of Compliance Samples Expected per month (n)				4	4		
Average Monthly Effluent Limit, ug/L	equals wasteload allocation	--	--	**1099.94**	**2002**	--	--
Maximum Daily Effluent Limit, ug/L	TSD Multiplier, Table 5-3, using 99th and 95th %	--	--	**2206.68**	**4016**	--	--
Average Monthly Limit (AML), lb/day		--	--	**10.091**	**18.4**	--	--
Maximum Daily Limit (MDL), lb/day		--	--	**20.244**	**36.8**	--	--

Table 23: Reasonable Potential Calculations for Temperature for Outfall 001 (October - May)

Freshwater Temperature Reasonable Potential and Limit Calculation

ID 58.01.02 250

02.b	Cold Water	*22.0 °C*	*or less with maximum daily average temperature of*	*19.0 °C*	
02.f.	Salmonid Spawing	*13.0 °C*	*or less with maximum daily average temperature of*	*9.0 °C*	As determined by IDEQ "Water Body Assessment Guidance"
03.a.	Seasonal Cold	*26.0 °C*	*or less with maximum daily average temperature of*	*23.0 °C*	
04.a.	Warn Water	*33.0 °C*	*or less with maximum daily average temperature of*	*29.0 °C*	

	Cold Water Critera	
INPUT		**Data Source**
Chronic Dilution Factor at Mixing Zone Boundary	38.9	High River Flow
Ambient Temperature (T) (Upstream Background)	11.8 °C	95th Percentile based on permittee or USGS data
Effluent Temperature	21.3 °C	95th Percentile of **monthly daily max effluent** based on daily max per DMR data
Aquatic Life Temperature WQ Criterion in Fresh Water	19.0 °C	Lowest daily max criteria
OUTPUT		
Temperature at Chronic Mixing Zone Boundary:	12.1 °C	Mass balance
Incremental Temperature Increase or decrease:	0.24 °C	WQS 401.c - allow for maximum of 0.3ºC rise in receiving water temperature.

Table 24: Reasonable Potential and Effluent Limit Calculations for Outfall 002

Reasonable Potential Analysis (RPA) and Water Quality Effluent Limit (WQBEL) Calculations

Facility Name	Potlatch Deltic St. Maries 002
Facility Flow (mgd)	
Facility Flow (cfs)	0.00

Critical River Flows (CFS)	(IDAPA 58.01.02 03. b)	Annual Crit. Flows
Aquatic Life - Acute Criteria - Criterion Max. Concentration (CMC)	**1Q10**	--
Aquatic Life - Chronic Criteria - Criterion Continuous Concentration (CCC)	**7Q10 or 4B3**	--
Ammonia	**30B3 or 30Q10/30Q5** (seasonal)	--
Human Health - Non-Carcinogen	**30Q5**	--
Human Health - carcinogen	**Harmonic Mean Flow**	--

DF at defined percent of river flow allow 25%
DF at defined percent of river flow allow 25%

Receiving Water Data			Notes:
Hardness, as mg/L $CaCO_3$	= 100 mg/L		5^{th} % at critical flows
Temperature, °C		Temperature, °C	95^{th} percentile
pH, S.U.		pH, S.U.	95^{th} percentile

Pollutants of Concern			ZINC - SEE Toxic BiOp
Effluent Data	**Number of Samples in Data Set (n)**		14
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)		1.026861114
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C_e)		200
	Calculated 50^{th} % Effluent Conc. (when n>10), Human Health Only		46
Receiving Water Data	**90^{th} Percentile Conc., µg/L - (C_u)**		3.82
	Geometric Mean, µg/L, Human Health Criteria Only		
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	20.26
	Aquatic Life Criteria, µg/L	Chronic	20.424
	Human Health Water and Organism, µg/L		870.
	Human Health, Organism Only, µg/L		1,500.
	Metals Criteria Translator, decimal (or default use Conversion Factor)	Acute	.978
		Chronic	.986
	Carcinogen (Y/N), Human Health Criteria Only		N
Percent River Flow Default Value = **25%**	**Aquatic Life - Acute**	**1Q10**	0%
	Aquatic Life - Chronic	7Q10 or 4B3	0%
		30B3 or 30Q10/30Q5	0%
	Human Health - Non-Carcinogen	Harmonic Mean	0%
	Human Health - Carcinogen	Harmonic Mean	0%
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute	1Q10	1.0
	Aquatic Life - Chronic	7Q10 or 4B3	1.0
	Aquatic Life - Chronic Ammonia	30B3 or 30Q10/30Q5	1.0
	Human Health - Non-Carcinogen	Harmonic Mean	1.0
	Human Health - Carcinogen	Harmonic Mean	1.0

Aquatic Life Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.849
P_n	=(1-confidence level)$^{1/n}$, where confidence level =	**99%**	0.720
Multiplier (TSD p. 57)	$=\exp(z\sigma-0.5\sigma^2)/\exp[\text{normsinv}(P_n)\sigma-0.5\sigma^2]$, where	**99%**	4.4
Statistically projected critical discharge concentration (C_e)			878.78
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone		Acute	859.44
(note: for metals, concentration as dissolved using conversion factor as translator)		Chronic	866.47
Reasonable Potential to exceed Aquatic Life Criteria			**YES**

Aquatic Life Effluent Limit Calculations

Number of Compliance Samples Expected per month (n)			0
n used to calculate AML (if chronic is limiting then use min=4 or for ammonia min=30)			0
LTA Coeff. Var. (CV), decimal	(Use CV of data set or default = 0.6)		1.027
Permit Limit Coeff. Var. (CV), decimal	(Use CV from data set or default = 0.6)		1.027
Acute WLA, ug/L	$C_d = (\text{Acute Criteria} \times MZ_a) - C_u \times (MZ_a-1)$	Acute	20.3
Chronic WLA, ug/L	$C_d = (\text{Chronic Criteria} \times MZ_c) - C_{u\,x} \times (MZ_c-1)$	Chronic	20.4
Long Term Ave (LTA), ug/L	WLAa x $\exp(0.5\sigma^2-z\sigma)$, Acute	**99%**	4.0
(99^{th} % occurrence prob.)	WLAc x $\exp(0.5\sigma^2-z\sigma)$; ammonia n=30, Chronic	**99%**	7.5
Limiting LTA, ug/L	used as basis for limits calculation		4.0
Applicable Metals Criteria Translator (metals limits as total recoverable)			0.98
Average Monthly Limit (AML), ug/L , where % occurrence prob =		**95%**	--
Maximum Daily Limit (MDL), ug/L , where % occurrence prob =		**99%**	**20.7**
Average Monthly Limit (AML), mg/L			--
Maximum Daily Limit (MDL), mg/L			**0.021**
Average Monthly Limit (AML), lb/day			--
Maximum Daily Limit (MDL), lb/day			--

Human Health Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.849
P_n	=(1-confidence level)$^{1/n}$ where confidence level =	**95%**	0.807
Multiplier	$=\exp(2.326\sigma-0.5\sigma^2)/\exp[\text{invnorm}(P_N)\sigma-0.5\sigma^2]$, prob. =	**50%**	0.479
Dilution Factor (for Human Health Criteria)			1.0
Max Conc. at edge of Chronic Zone, ug/L (C_d)			46.000
Reasonable Potential to exceed HH Water & Organism			**NO**
Reasonable Potential to exceed HH Organism Only			**NO**

Table 25: Reasonable Potential and Effluent Limit Calculations for Outfall 003

Reasonable Potential Analysis (RPA) and Water Quality Effluent Limit (WQBEL) Calculations

Facility Name	Potlatch Deltic St. Maries 003
Facility Flow (mgd)	0.00
Facility Flow (cfs)	0.00

Critical River Flows (CFS)	(IDAPA 58.01.02 03. b)	Annual Crit. Flows
Aquatic Life - Acute Criteria - Criterion Max. Concentration (CMC)	**1Q10**	--
Aquatic Life - Chronic Criteria - Criterion Continuous Concentration (CCC)	**7Q10 or 4B3**	--
Ammonia	**30B3 or 30Q10/30Q5** (seasonal)	--
Human Health - Non-Carcinogen	**30Q5**	--
Human Health - carcinogen	**Harmonic Mean Flow**	--

DF at defined percent of river flow allow 25%
DF at defined percent of river flow allow 25%

Receiving Water Data

Notes:
5^{th} % at critical flows
95^{th} percentile
95^{th} percentile

Hardness, as mg/L $CaCO_3$	= 100 mg/L		
Temperature, °C		Temperature, °C	
pH, S.U.		pH, S.U.	

Pollutants of Concern			ZINC - SEE Toxic BiOp
Effluent Data	**Number of Samples in Data Set (n)**		14
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)		0.831109225
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C_e)		184
	Calculated 50^{th} % Effluent Conc. (when n>10), Human Health Only		58
Receiving Water Data	**90^{th} Percentile Conc., µg/L - (C_u)**		3.82
	Geometric Mean, µg/L, Human Health Criteria Only		
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	20.26
	Aquatic Life Criteria, µg/L	Chronic	20.424
	Human Health Water and Organism, µg/L		870.
	Human Health, Organism Only, µg/L		1,500.
	Metals Criteria Translator, decimal (or default use Conversion Factor)	Acute	.978
		Chronic	.986
	Carcinogen (Y/N), Human Health Criteria Only		N
Percent River Flow Default Value = **25%**	**Aquatic Life - Acute**	**1Q10**	0%
	Aquatic Life - Chronic	7Q10 or 4B3	0%
		30B3 or 30Q10/30Q5	0%
	Human Health - Non-Carcinogen	Harmonic Mean	0%
	Human Health - Carcinogen	Harmonic Mean	0%
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute	1Q10	1.0
	Aquatic Life - Chronic	7Q10 or 4B3	1.0
	Aquatic Life - Chronic Ammonia	30B3 or 30Q10/30Q5	1.0
	Human Health - Non-Carcinogen	Harmonic Mean	1.0
	Human Health - Carcinogen	Harmonic Mean	1.0

Aquatic Life Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.725
P_n	$=(1\text{-confidence level})^{1/n}$, where confidence level =	**99%**	0.720
Multiplier (TSD p. 57)	$=\exp(z\sigma-0.5\sigma^2)/\exp[\text{normsinv}(P_n)\sigma-0.5\sigma^2]$, where	**99%**	3.5
Statistically projected critical discharge concentration (C_e)			651.39
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone		Acute	637.06
(note: for metals, concentration as dissolved using conversion factor as translator)		Chronic	642.27
Reasonable Potential to exceed Aquatic Life Criteria			**YES**

Aquatic Life Effluent Limit Calculations

Number of Compliance Samples Expected per month (n)			0
n used to calculate AML (if chronic is limiting then use min=4 or for ammonia min=30)			0
LTA Coeff. Var. (CV), decimal	(Use CV of data set or default = 0.6)		0.831
Permit Limit Coeff. Var. (CV), decimal	(Use CV from data set or default = 0.6)		0.831
Acute WLA, ug/L	C_d = (Acute Criteria x MZ_a) - C_u x (MZ_a-1)	Acute	20.3
Chronic WLA, ug/L	C_d = (Chronic Criteria x MZ_c) - C_u x (MZ_c-1)	Chronic	20.4
Long Term Ave (LTA), ug/L	WLAa x $\exp(0.5\sigma^2-z\sigma)$, Acute	**99%**	4.9
(99^{th} % occurrence prob.)	WLAc x $\exp(0.5\sigma^2-z\sigma)$; ammonia n=30, Chronic	**99%**	8.7
Limiting LTA, ug/L	used as basis for limits calculation		4.9
Applicable Metals Criteria Translator (metals limits as total recoverable)			0.98
Average Monthly Limit (AML), ug/L	, where % occurrence prob =	**95%**	--
Maximum Daily Limit (MDL), ug/L	, where % occurrence prob =	**99%**	**20.7**
Average Monthly Limit (AML), mg/L			--
Maximum Daily Limit (MDL), mg/L			**0.021**
Average Monthly Limit (AML), lb/day			--
Maximum Daily Limit (MDL), lb/day			--

Human Health Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.725
P_n	$=(1\text{-confidence level})^{1/n}$ where confidence level =	**95%**	0.807
Multiplier	$=\exp(2.326\sigma-0.5\sigma^2)/\exp[\text{invnorm}(P_N)\sigma-0.5\sigma^2]$, prob. =	**50%**	0.533
Dilution Factor (for Human Health Criteria)			1.0
Max Conc. at edge of Chronic Zone, ug/L (C_d)			58.000
Reasonable Potential to exceed HH Water & Organism			**NO**
Reasonable Potential to exceed HH Organism Only			**NO**

Table 26: Reasonable Potential and Effluent Limit Calculations for Outfall 004

Reasonable Potential Analysis (RPA) and Water Quality Effluent Limit (WQBEL) Calculations

Facility Name	Potlatch Deltic St. Maries 004
Facility Flow (mgd)	0.00
Facility Flow (cfs)	0.00

Critical River Flows (CFS)	(IDAPA 58.01.02 03. b)	Annual Crit. Flows
Aquatic Life - Acute Criteria - Criterion Max. Concentration (CMC)	**1Q10**	--
Aquatic Life - Chronic Criteria - Criterion Continuous Concentration (CCC)	**7Q10 or 4B3**	--
Ammonia	**30B3 or 30Q10/30Q5** (seasonal)	--
Human Health - Non-Carcinogen	**30Q5**	--
Human Health - carcinogen	**Harmonic Mean Flow**	--

DF at defined percent of river flow allow 25%
DF at defined percent of river flow allow 25%

Receiving Water Data

Hardness, as mg/L $CaCO_3$ = 100 mg/L
Temperature, °C — Temperature, °C
pH, S.U. — pH, S.U.

Notes:
5th % at critical flows
95th percentile
95th percentile

Pollutants of Concern			ZINC - SEE Toxic BiOp
Effluent Data	**Number of Samples in Data Set (n)**		13
	Coefficient of Variation (CV) = Std. Dev./Mean (default CV = 0.6)		0.901299941
	Effluent Concentration, µg/L (Max. or 95th Percentile) - (C_e)		584
	Calculated 50th % Effluent Conc. (when n>10), Human Health Only		119.5
Receiving Water Data	**90th Percentile Conc., µg/L - (C_u)**		
	Geometric Mean, µg/L, Human Health Criteria Only		
Applicable Water Quality Criteria	Aquatic Life Criteria, µg/L	Acute	20.26
	Aquatic Life Criteria, µg/L	Chronic	20.424
	Human Health Water and Organism, µg/L		870.
	Human Health, Organism Only, µg/L		1,500.
	Metals Criteria Translator, decimal (or default use Conversion Factor)	Acute	.978
		Chronic	.986
	Carcinogen (Y/N), Human Health Criteria Only		N
Percent River Flow Default Value = **25%**	**Aquatic Life - Acute**	**1Q10**	0%
	Aquatic Life - Chronic	7Q10 or 4B3	0%
		30B3 or 30Q10/30Q5	0%
	Human Health - Non-Carcinogen	Harmonic Mean	0%
	Human Health - Carcinogen	Harmonic Mean	0%
Calculated Dilution Factors (DF) (or enter Modeled DFs)	Aquatic Life - Acute	1Q10	1.0
	Aquatic Life - Chronic	7Q10 or 4B3	1.0
	Aquatic Life - Chronic Ammonia	30B3 or 30Q10/30Q5	1.0
	Human Health - Non-Carcinogen	Harmonic Mean	1.0
	Human Health - Carcinogen	Harmonic Mean	1.0

Aquatic Life Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.771
P_n	=(1-confidence level)$^{1/n}$, where confidence level =	**99%**	0.702
Multiplier (TSD p. 57)	$=\exp(z\sigma-0.5\sigma^2)/\exp[\text{normsinv}(P_n)\sigma-0.5\sigma^2]$, where	**99%**	4.0
Statistically projected critical discharge concentration (C_e)			2334.67
Predicted max. conc.(ug/L) at Edge-of-Mixing Zone		Acute	2283.31
(note: for metals, concentration as dissolved using conversion factor as translator)		Chronic	2301.99
Reasonable Potential to exceed Aquatic Life Criteria			**YES**

Aquatic Life Effluent Limit Calculations

Number of Compliance Samples Expected per month (n)			0
n used to calculate AML (if chronic is limiting then use min=4 or for ammonia min=30)			0
LTA Coeff. Var. (CV), decimal	(Use CV of data set or default = 0.6)		0.901
Permit Limit Coeff. Var. (CV), decimal	(Use CV from data set or default = 0.6)		0.901
Acute WLA, ug/L	C_d = (Acute Criteria x MZ_a) - C_u x (MZ_a-1)	Acute	20.3
Chronic WLA, ug/L	C_d = (Chronic Criteria x MZ_c) - C_u x (MZ_c-1)	Chronic	20.4
Long Term Ave (LTA), ug/L	WLAa x $\exp(0.5\sigma^2-z\sigma)$, Acute	**99%**	4.5
(99th % occurrence prob.)	WLAc x $\exp(0.5\sigma^2-z\sigma)$; ammonia n=30, Chronic	**99%**	8.2
Limiting LTA, ug/L	used as basis for limits calculation		4.5
Applicable Metals Criteria Translator (metals limits as total recoverable)			0.98
Average Monthly Limit (AML), ug/L , where % occurrence prob =		**95%**	--
Maximum Daily Limit (MDL), ug/L , where % occurrence prob =		**99%**	**20.7**
Average Monthly Limit (AML), mg/L			--
Maximum Daily Limit (MDL), mg/L			**0.021**
Average Monthly Limit (AML), lb/day			--
Maximum Daily Limit (MDL), lb/day			--

Human Health Reasonable Potential Analysis

σ	$\sigma^2=\ln(CV^2+1)$		0.771
P_n	=(1-confidence level)$^{1/n}$ where confidence level =	**95%**	0.794
Multiplier	$=\exp(2.326\sigma-0.5\sigma^2)/\exp[\text{invnorm}(P_N)\sigma-0.5\sigma^2]$, prob. =	**50%**	0.531
Dilution Factor (for Human Health Criteria)			1.0
Max Conc. at edge of Chronic Zone, ug/L (C_d)			119.500
Reasonable Potential to exceed HH Water & Organism			**NO**
Reasonable Potential to exceed HH Organism Only			**NO**

Appendix D. Antidegradation Analysis

A. Overview

EPA has prepared a preliminary antidegradation analysis, which characterizes the potential impact of the point source discharge into Reservation TAS waters in consideration of the Tribe's Antidegradation Policy. The Tribe's final Antidegradation Review will be provided with the final CWA Section 401 certification of the permit.

The purposes of the Coeur d'Alene Tribe's Antidegradation Policy as outlined in Section 6 of *Water Quality Standards for Approved Surface Waters of the Coeur D'Alene Tribe*, effective June 12, 2014, are bulleted below. Tier levels indicate the level of protection required under the Antidegradation Policy.

- Maintain and protect water quality necessary to protect existing uses (Tier 1)
- Outline conditions under which the Tribe may allow for lower water quality to accommodate important social or economic development; Assure that the highest statutory/regulatory requirements for new and existing point sources are achieved (Tier 2)
- Outline criteria for designating Outstanding Tribal Resource Waters (OTRWs) and maintain the water quality and uses of OTRWs (Tier 3)

The Coeur d'Alene Tribe's Antidegradation Policy, in conjunction with their CWA Section 401 certification authority, authorizes the Tribe to review any activity involving a point source discharge into Reservation TAS waters to ensure that existing uses are protected and that any degradation of water quality occurs in an approved manner. This is known as an Antidegradation Review.

The Coeur d'Alene Tribe has identified implementation methods for its antidegradation policy, titled *Anti degradation Implementation Policy and Antidegradation Review Process for TAS Approved Waters of the Coeur d'Alene Reservation* ("Antidegradation Implementation Methods").[2]

Per Section 5.3.1 of the Antidegradation Implementation Methods, all parameters in Reservation TAS waters will receive at least Tier 1 protection. Under Section 5.2.2, Tier 2 shall apply when the water quality for a parameter is better than criteria established in the Coeur d'Alene Tribe WQS to maintain and protect the "fishable and swimmable" goals of Section 101(a)(2) of the CWA.

Under Section 6(3)(a)-(d) of the CTD WQS, the following waters shall be considered for Tier 3 protection: Outstanding national or tribal resources; documented critical habitat for threatened/endangered species; Waters of exceptional recreational, ceremonial, cultural, or ecological significance; and Waters supporting priority species as determined by the Tribe. Although the St. Joe River is designated critical habitat for bull trout and therefore shall be

[2] The Tribe's Antidegradation Implementation Methods are appended to the water quality standards, which are available at: https://www.epa.gov/sites/production/files/2017-02/documents/wqs-coeurdalene.pdf

considered for Tier 3 protection, the Coeur d'Alene Tribe has not designated any Tier 3 waters (OTRWs).

Under Section 5.2.3 of the Antidegradation Implementation Methods, unless a water body is not meeting Tier 1 protections, or has been designated as OTRW, Tier 2 will apply to all discharge parameters. EPA therefore performed a Tier 2 level analysis for the action.

B. Existing Pollutant Limits

As shown in Table 8 and Table 9 of the Fact Sheet, all proposed limits in the permit are at least as stringent as those in the previous individual permit. New effluent limitations have also been proposed for iron (for Outfall 001), TSS, and zinc.

C. More Stringent Limits

Reasonable potential and effluent limit calculations resulted in the inclusion of more stringent pH effluent limitations relative to the 1996 permit and the MSGP. The prior limits, under both the 1996 individual permit and the MSGP, were a range of 6.0 - 9.0 standard units. The new limit is a range of 6.5 - 8.5 standard units.

D. New Limits

Reasonable potential and effluent limit calculations resulted in the inclusion of the following new effluent limitations for parameters not limited in the 1996 permit or the MSGP:

- Iron (for outfall 001)
- TSS
- Zinc

The MSGP included benchmarks for zinc and TSS, but not effluent limits.

E. Water Quality Impairments

As discussed in Section III.D, of the Fact Sheet, there are no known water quality impairments in or EPA-approved Total Maximum Daily Loads (TMDLs) for the St. Joe River at the point of discharge. However, the section of the St. Joe River receiving the discharge is unassessed for Idaho 303(d) purposes (i.e., insufficient data is available to determine whether beneficial uses are being met).

F. Summary

In sum, for the following reasons, EPA concludes that no adverse change in water quality and no degradation will result from the discharge of these pollutants in accordance with the reissued permit, and that this discharge complies with the of the Coeur d'Alene Tribe's Antidegradation Policy.

- EPA conducted reasonable potential analyses based upon the assimilative capacity of the receiving water on a parameter-by-parameter basis and included effluent limitations necessary to ensure that Coeur d'Alene Tribe WQS criteria are not violated by the discharge, in accordance with the Tribe's Antidegradation Policy Tier 2 requirements and Tribal mixing zone policies;
- More stringent controls for previously controlled parameters have been proposed in the permit;

- New effluent limitations have been proposed for parameters not previously limited.