ALASKA POLLUTANT DISCHARGE ELIMINATION SYSTEM

INDIVIDUAL PERMIT – DRAFT

Permit Number: AK0026603

ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Wastewater Discharge Authorization Program
555 Cordova Street
Anchorage, AK 99501

In compliance with the provisions of the Clean Water Act (CWA), 33 U.S.C. §1251 *et seq*., as amended by the Water Quality Act of 1987, P.L. 100-4, this permit is issued under provisions of Alaska Statutes (AS) 46.03; the Alaska Administrative Code (AAC) as amended; and other applicable State laws and regulations. The

CHUGACH ELECTRIC ASSOCIATION

is authorized to discharge from the Beluga Power Plant facility on the West side of Cook Inlet at the following location:

Outfall	Receiving Water or Body	Latitude	Longitude
001A	Krause Creek	61.186663 North	151.038724 West

In accordance with the discharge points effluent limitations, monitoring requirements, and other conditions set forth herein:

This permit and authorization shall become effective DRAFT

This permit and the authorization to discharge shall expire at midnight, DRAFT

The permittee shall reapply for a permit reissuance on or before DRAFT, 180 days before the expiration of this permit if the permittee intends to continue operations and discharges at the facility beyond the term of this permit.

The permittee shall post or maintain a copy of this permit to discharge at the facility and make it available to the public, employees, and subcontractors at the facility.

DRAFT	DRAFT
Signature	Date
DRAFT	Program Manager
Printed Name	Title

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SCHEDULE OF SUBMISSIONS

The Schedule of Submissions summarizes some of the required submissions and activities the permittee must complete and/or submit to the Alaska Department of Environmental Conservation (DEC or the Department) during the term of this permit. The permittee is responsible for all submissions and activities even if they are not summarized below.

Table 1: Schedule of Submissions

Permit Part	Submittal or Completion	Frequency	Due Date	Submit to[a]
Permit Section 3.1, Appendix A, 3.2	Discharge Monitoring Report (DMR)	2/Year	Must be submitted electronically through the NetDMR system, on or before the 15th day of the following month.	NetDMR
Permit Section 1.3	Whole Effluent Toxicity (WET) Testing	1/Year	Attach with the next required DMR due following the month of sample collection	Compliance
Permit Section 1.3	Written notice of exceedance of chronic toxicity trigger	As Necessary	Within 14 Days of receipt of WET test results	Compliance
Permit Section 1.4	APDES Application Form 2C Effluent Monitoring	1/permit cycle	With application for permit reissuance	Permitting
Appendix A, 1.3	Application for Permit Reissuance	1/permit cycle	180 days before expiration of the final permit	Permitting
Appendix A, 3.4	Oral notification of noncompliance	As Necessary	Within 24 hours from the time the permittee becomes aware of the circumstances of noncompliance	Compliance
Appendix A, 3.4	Written notification of noncompliance	As Necessary	Within 5 days after the permittee becomes aware of the circumstances	Compliance
Appendix A, 3.5	Other Noncompliance Reporting	As Necessary	At the time the permittee submits discharge monitoring reports under Appendix A, Part 3.2.	Compliance

a) See Appendix A 1.1 for addresses

1.0 LIMITATIONS AND MONITORING REQUIREMENTS

1.1 Discharge Authorization

1.1.1 During the effective period of this permit, the permittee is authorized to discharge pollutants from Outfall 001A specified herein to Krause Creek within the limits and subject to conditions set forth herein. This permit authorizes discharge of only those pollutants resulting from facility processes, waste streams, and operations clearly identified in the permit application process.

1.2 Effluent Limits and Monitoring

1.2.1 The permittee must limit and monitor discharges from Outfall 001A as specified in Table 2. All values represent maximum effluent limits, unless otherwise indicated. The permittee must comply with effluent limitations in the table at all times unless otherwise indicated, regardless of monitoring frequency or reporting required by other provisions of this permit.

1.2.2 Discharge shall not cause contamination of surface or ground waters, and shall not cause or contribute to a violation of the Alaska Water Quality Standards (18 Alaska Administrative Code (AAC) 70), unless allowed in this permit and the excursions are authorized in accordance with applicable provisions in 18 AAC 70.200 – 70.240 (e.g. variance, mixing zone).

1.2.3 The permittee must not discharge any floating solids, debris, sludge, deposits, foam, scum, or other residues, including petroleum hydrocarbons or oil and grease, that cause a film, sheen or discoloration on the surface of the receiving water or adjoining shorelines; cause leaching of toxic or deleterious substances; or cause a sludge, solid, or emulsion to be deposited beneath or upon the surface of the water, within the water column, on the bottom, or upon adjoining shorelines. Monitoring shall be conducted on a daily basis during discharge.

1.2.4 The permittee must collect effluent samples from the effluent stream after the last treatment unit before discharge into receiving waters.

1.2.5 For all effluent monitoring, the permittee must use a sufficiently sensitive Environmental Protection Agency (EPA) approved test method that quantifies the pollutants to a level lower than applicable limits or water quality standards or use the most sensitive test method available, per Title 40 Code of Federal Regulations (CFR) Part 136 (Guidelines Establishing Test Procedures for the Analysis of Pollutants), adopted by reference at 18 AAC 83.010(f).

1.2.6 Permittees have the option of taking more frequent samples than are required in the permit. These samples must be used for averaging if they are conducted using DEC approved test methods (generally found in 18 AAC 70 and 40 CFR §136 [adopted by reference in 18 AAC 83.010]) and if the method detection limits are less than the effluent limits

1.2.7 For purposes of reporting on the discharge monitoring report (DMR) for a single sample, if a value is less than the method detection limit (MDL), the permittee must report “less than (<) {numeric value of MDL}” and if a value is less than the minimum level (ML) [also called a reporting limit (RL), practical quantification limit (PQL), or limit of quantitation (LOQ)] the permittee must report “less than (<) {numeric value of ML}.”

1.2.8 For purposes of calculating monthly averages, zero may be assigned for values less than the MDL and the numeric value of the MDL may be assigned for values between the MDL and the ML. If the average value is less than the MDL, the permittee must report "less than (<) {numeric value of MDL}" and if the average value is less than the ML, the permittee must report "less than (<) {numeric value of ML}." If a value is equal to or greater than the ML, the permittee must report and use the actual value

1.2.9 For purposes of calculating the reported daily maximum pounds per day, the permittee must use the maximum observed effluent flow rate measured on the date the effluent sample was collected. For purposes of calculating the reported weekly or monthly pounds per day, the permittee may use the appropriate average flow, weekly or monthly

Table 2: Outfall 001A: Effluent Limits and Monitoring Requirements

Parameter	Effluent Limits					Monitoring Requirements		
	Units [a]	Daily Minimum	Monthly Average	Weekly Average	Daily Maximum	Sample Location	Sample Frequency	Sample Type
Total Flow	GPD	N/A	N/A	N/A	10,000	Effluent	Continuous	Recorded
Oil and Grease	mg/L	N/A	15	N/A	20	Effluent	1/Year [c]	Grab
	lbs/day [b]		1.25	N/A	1.67			
Oily Sheen	N/A	No Discharge Allowed				Effluent Cooling Pond	Daily/ When Discharging	Visual
PCB's [d]	µg/L	No Discharge Allowed				Effluent	1/Year	Grab
Total Suspended Solids (TSS)	mg/L	N/A	30	N/A	100	Effluent	1/Year	Grab
	lbs/day	N/A	2.5	N/A	8.34			
pH	SU	6.5	N/A	N/A	8.5	Effluent	1/Year	Grab
Temperature	˚ C	N/A	N/A	N/A	13	Effluent	1/Year	Grab
Total Aromatic Hydrocarbons (TAH)	µg/L	N/A	N/A	N/A	Report	Effluent	1/Year	Grab
Total Aqueous Hydrocarbons (TAqH)	µg/L	N/A	N/A	N/A	Report	Effluent	1/Year	Grab
Copper, Total Recoverable	µg/L	N/A	N/A	N/A	Report	Effluent	1/Year	Grab
Zinc, Total Recoverable	µg/L	N/A	N/A	N/A	Report	Effluent	1/Year	Grab

Footnotes:

a. Units: GPD = gallons per day, mg/L = milligrams per liter, lbs/day = pounds per day, µg/L= micrograms per liter SU = standard units, °C= degrees Celsius.

b. Loading in lbs/day = concentration (mg/L) x flow (million gallons per day) x 8.34 (conversion factor).

c. Once per year means taking one sample per calendar year, alternating between taking a sample during the summer months (June 1-September 30) and the winter months (October 1-May 31)

d. There shall be no discharge of polychlorinated biphenyl compounds such as those commonly used for transformer fluid (40 CFR §423.15(b)).

1.3 Whole Effluent Toxicity

1.3.1 Whole Effluent Toxicity Testing Requirements-Chronic Toxicity

1.3.1.1 The permittee shall conduct annual chronic toxicity tests on effluent samples from outfall 001A. Testing shall be conducted in accordance with Parts 1.3.1 through 1.3.5.

1.3.1.2 Toxicity testing must be performed on 24 hour composite samples of effluent once per calendar year during a discharge event and submitted with the DMR. The annual testing shall take place in alternating seasons each year, occurring in the summer months (June 1– September 30) the first calendar year the permit is in effect and in the winter (October 1- May 31) the following year. If a yearly test is taken between June 1 and September 30, the next yearly sampling shall be done between October 1 and May 31.

1.3.1.3 Toxicity test results shall be reported according to the guidance and must include all relevant test information described for report preparation in *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 4th Edition, October 2002 EPA/821-R-02-013* (or as updated or superseded during the permit term).

1.3.1.4 Results must be reported in TUc (toxic units, chronic) where TUc = 100/No Observed Effect Concentration (NOEC).

1.3.1.5 A minimum of two test species with approved test protocols shall be used. The test species shall include the fathead minnow (*Pimephales promelas*), and the water flea (*Ceriodaphnia dubia*). The permittee shall use the critical life stage toxicity tests specified in Table 3 to measure chronic toxicity (TUc).

Table 3: Approved Whole Effluent Toxicity Tests and Species

Species	Test
Fathead Minnow (*Pimephales promelas*)	Survival and Growth
Water Flea *(Ceriodaphnia dubia)*	Survival and Reproduction

1.3.1.6 If the permittee proposes an alternative species to be used for chronic toxicity testing, the permittee shall perform screening first and provide the results of the screening to DEC for review and written approval prior to implementing the use of the new test species.

1.3.1.7 Toxicity testing on each organism must include a series of five test dilutions and a control. This dilution series shall consist of effluent concentrations of 100%, 75%, 50%, 25%, 13% and a control.

1.3.1.8 There are no chronic toxicity effluent limits for this discharge, the chronic WET trigger value is 1.0 TUc. Accelerated toxicity testing (See Section 1.3.3) is required if this chronic WET permit trigger is exceeded.

1.3.2 Whole Effluent Toxicity-Quality Assurance

1.3.2.1 All quality assurance criteria and statistical analyses used for chronic tests and reference toxicant tests must be in accordance with *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 4th Edition, October 2002 EPA/821-R-02-013* and the individual test protocol. In addition to those quality assurance measures specified in the methodology, the following quality assurance procedures must be implemented.

1.3.2.2 The permittee shall make every effort to have the toxicity tests initiated within thirty-six hours of sample collection. If this is not possible, the permittee must document that the delivery time cannot be met. In no case should more than seventy-two hours elapse between sample collection and use of the sample. The sample must be held at 0-6 °C.

1.3.2.3 If organisms are not cultured in-house, concurrent testing with reference toxicants must be conducted. If organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests must be conducted using the same test conditions as the effluent toxicity.

1.3.2.4 If either one of the reference toxicant tests or the effluent tests does not meet all test acceptability criteria as specified in the test methods manual, the permittee must re-sample and re-test within 14 days of receipt of the test results.

1.3.2.5 Control and lab dilution water must be collected from the receiving water or lab water, as appropriate and as described in the manual. If the dilution water used is different from the culture water, a second control, using culture water, must also be used. Receiving water may be used as control and dilution water upon notification and approval of DEC. In no case shall water that has not met test acceptability criteria be used for either dilution or control.

1.3.3 Whole Effluent Toxicity-Accelerated Testing

1.3.3.1 Initial investigation: If the permittee demonstrates through an evaluation of facility operations that the cause of the exceedance is known and corrective actions have been implemented, only one accelerated test is necessary. If toxicity exceeding the chronic toxicity trigger in Section 1.3.1.8 is detected in this test, then the Toxicity Reduction Evaluation (TRE) requirements in Section 1.3.4 shall apply. If chronic toxicity is detected above the trigger, and no initial investigation is conducted or no cause is determined by an initial investigation, then the permittee must conduct four more biweekly tests over a ten week period. This accelerated testing must be initiated within two weeks of receipt of the test results that indicate exceedance.

1.3.3.2 The permittee must notify DEC of the exceedance in writing within two weeks of receipt of the test results. The notification must include the following information.

1.3.3.3 A status report on any actions required by the permit, with a schedule for actions not yet completed.

1.3.3.4 A description of any additional actions the permittee has taken or will take to investigate and correct the cause(s) of the toxicity, and;

1.3.3.5 Where no actions have been taken, a discussion of the reasons for taking no action;

1.3.3.6 If none of the four accelerated tests exceed the toxicity trigger, the permittee may return to the normal testing frequency. If any of the four accelerated tests exceed the chronic toxicity trigger, then the TRE requirements of Section 1.3.4, shall apply.

1.3.4 Toxicity Reduction Evaluation and Toxicity Identification Evaluation.

1.3.4.1 If the chronic toxicity trigger is exceeded during accelerated testing (Section 1.3.3), the permittee must initiate a TRE in accordance with Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (TREs) (EPA/600/2-88/070 April 1989), within two weeks of the receipt of the test results showing an exceedance. At a minimum, the TRE must include:

1.3.4.2 Further actions to investigate and identify the cause of toxicity;

1.3.4.3 Actions the permittee will take to mitigate the impact of the discharge and to prevent recurrence of toxicity; and

1.3.4.4 A schedule for these actions.

1.3.5 The permittee may initiate a Toxicity Identification Evaluation (TIE) as part of the TRE process. Any TIE must be performed in accordance with EPA guidance manuals: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005F, 1992); *Methods for Aquatic Toxicity Identification Evaluations, and Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600R-92/080, 1993).

1.4 APDES Application Form 2C Effluent Monitoring

1.4.1 The permittee shall conduct the effluent monitoring required by APDES permit application Form 2C and submit the results to DEC with the application for permit reissuance. The application for reissuance must be submitted 180 days prior to the expiration date of the permit. The effluent monitoring must have occurred in the three years prior to submittal of the monitoring data.

2.0 SPECIAL CONDITIONS

2.1 Quality Assurance Project Plan

2.1.1 The permittee must develop, implement and maintain a quality assurance project plan (QAPP) for all monitoring required by this permit. Within 180 days of the effective date of the permit, the permittee shall review, update as necessary, and implement a QAPP for all monitoring required by this permit. Any existing QAPP for the facility may be reviewed and modified under this section.

2.1.2 The QAPP must be designed to assist in planning for the collection and analysis of all samples in support of the permit and to help explain data anomalies whenever they occur.

2.1.3 The permittee may use either the generic DEC *Wastewater Treatment Facility Quality Assurance Project Plan* (DEC QAPP) or a facility-specific QAPP. Some facility specific information is required to complete the QAPP when using the generic DEC QAPP.

2.1.4 Throughout all sample collection and analysis activities, the permittee must use DEC-approved Quality Assurance/Quality Control and chain-of-custody procedures, as described in the *Requirements for Quality Assurance Project Plans* (EPA/QA/R-5, March 2001) at https://www.epa.gov/sites/production/files/2016-06/documents/r5-final_0.pdf and *Guidance for Quality Assurance Project Plans* (EPA/QA/G-5, December 2002) at https://www.epa.gov/sites/production/files/2015-06/documents/g5-final.pdf. The QAPP must be prepared in the format specified in these documents.

2.1.5 At a minimum, a QAPP must include:

2.1.5.1 Details on number of samples, type of sample containers, preservation of samples, holding times, analytical methods, analytical detection and quantitation limits for each target compound, type and number of quality assurance field samples, precision and accuracy requirements, sample preparation requirements, sample shipping methods, and laboratory data delivery requirements;

2.1.5.2 Maps indicating the location of each sampling point;

2.1.5.3 Qualification and training of personnel; and

2.1.5.4 Name, address, and telephone number of all laboratories used by or proposed to be used by the permittee.

2.1.6 The permittee must amend the QAPP whenever sample collection, sample analysis, or other procedure addressed by the QAPP is modified.

2.1.7 At a minimum, the QAPP must be reviewed annually for years where discharge will occur. Documentation of the QAPP review by the permittee shall be retained on site and made available to DEC upon request.

2.1.8 An electronic or physical copy of the QAPP must be kept on site and made available to DEC upon request.

2.2 Best Management Practices Plan

2.2.1 Within 180 days of the effective date of this permit, the permittee shall review, update as necessary, and implement the BMP Plan. The BMP Plan shall incorporate practices to achieve the objectives and specific requirements listed below. The permittee shall fully comply with the BMP Plan along with any amendments. Any existing BMP Plans may be modified for compliance with this Part.

2.2.2 Objectives. The permittee must develop and amend the BMP Plan consistent with the following objectives for the control of pollutants.

2.2.2.1 The number and quantity of pollutants and the toxicity of effluent generated, discharged, or potentially discharged at the facility must be minimized by the permittee to the extent feasible by managing each waste stream in the most appropriate manner.

2.2.2.2 Under the BMP Plan and especially within any standard operating procedures in the BMP Plan, the permittee must ensure proper operation and maintenance of water management and wastewater treatment systems. BMP Plan elements must be developed in accordance with standard engineering principles and practices.

2.2.2.3 Each facility component or system must be examined for its waste minimization opportunities and its potential for causing a release of significant amounts of pollutants to lands and waters of the U.S. due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc. The examination must include all normal operations and ancillary activities including material storage areas, storm water, in-plant transfer, material handling and process handling areas, loading or unloading operations, spillage or leaks, sludge and waste disposal, or drainage from raw material storage.

2.2.3 Elements of the BMP Plan. The BMP Plan must be consistent with the objectives above and the general guidance contained in *Guidance Manual for Developing Best Management Practices* (EPA 833-B-93-004, October 1993) and *Storm Water Management for Industrial Activities, Developing Pollution Prevention Plans and Best Management Practices* (EPA 832-R-92-006) or any subsequent revision to these guidance documents.

2.2.3.1 Plan Components. The BMP Plan must include, at a minimum, the following items:

2.2.3.1.1 Statement of BMP Policy. The BMP Plan must include a statement of management commitment to provide the necessary financial, staff, equipment, and training resources to develop and implement the BMP Plan on a continuing basis.

2.2.3.1.2 The BMP Plan must establish a BMP Committee responsible for developing, implementing, and maintaining the BMP Plan. Specify the structure, functions, and procedures of the BMP Committee.

2.2.3.1.3 Description of potential pollutant sources.

2.2.3.1.4 Risk identification and assessment.

2.2.3.1.5 Standard operating procedures to achieve the above objectives and specific best management practices

2.2.3.1.6 Reporting of BMP incidents. The reports must include a description of the circumstances leading to the incident, corrective actions taken and recommended changes to operating and maintenance practices to prevent recurrence.

2.2.3.1.7 Materials compatibility.

2.2.3.1.8 Good housekeeping.

2.2.3.1.9 Inspections.

2.2.3.1.10 Preventative maintenance and repair.

2.2.3.1.11 Security.

2.2.3.1.12 Employee training.

2.2.3.1.13 Record keeping and reporting.

2.2.3.1.14 Prior evaluation of any planned modifications to the facility to ensure that the requirements of the BMP plan are considered as part of the modifications.

2.2.3.1.15 Final constructed site plans, drawings, and maps (including detailed storm water outfall/culvert configurations).

2.2.3.2 Specific Best Management Practices. The BMP Plan must establish specific BMPs or other measures to achieve the objectives which ensure that the following specific requirements are met:

2.2.3.2.1 Solids, sludge, or other pollutants removed in the course of treatment or control of water and wastewaters must be disposed of in a manner to prevent any pollutant from such materials from entering waters of the U.S.

2.2.3.2.2 Ensure proper management of solid and hazardous waste in accordance with regulations promulgated under the Resource Conservation and Recovery Act (RCRA). Management practices required under RCRA regulations must be referenced in the BMP Plan.

2.2.3.2.3 An annual review of the preventative maintenance procedures and system testing checks put in place to test the UV and ozone disinfection system and to make changes, if needed, to address concerns raised as part of the release potential identification and assessment.

2.2.4 Review and Certification. The BMP must be reviewed and certified annually as follows:

2.2.4.1 Annual review by the facilities director and BMP Committee.

2.2.4.2 Certified statement the above reviews were completed and the BMP Plan fulfills the requirements set forth in this permit. The statement must be certified by the dated signatures of each BMP Committee member and kept on file with the BMP Plan and made available on request to DEC.

2.2.5 The BMP Plan shall be retained electronically or physically on site and made available to DEC upon request.

2.2.6 BMP Plan Modification

2.2.6.1 The permittee must amend the BMP Plan whenever a change in the facility or in the operation of the facility materially increases the generation of pollutants or their release or potential release to receiving waters.

2.2.6.2 The permittee must amend the BMP Plan whenever the plan is found to be ineffective in achieving the general objective of preventing and minimizing the generation and the potential for the release of pollutants from the facility to waters of the U.S.

2.2.6.3 Any changes to the BMP Plan must be consistent with the objectives and specific requirements listed above. All changes in the BMP Plan must be reported in the annual certification required under Section 2.2.5.

3.0 GENERAL PROVISIONS

3.1 Electronic Reporting (E-Reporting) Rule

3.1.1 E-Reporting Rule for DMRs (Phase I).

The permittee must submit DMR data electronically through NetDMR per Phase I of the E-Reporting Rule (40 CFR 127) upon the effective date of the Permit. Authorized persons may access permit information by logging into the NetDMR Portal (https://cdxnodengn.epa.gov/oeca-netdmr-web/action/login). DMRs submitted in compliance with the E-Reporting Rule are not required to be submitted as described in Appendix A – Standard Conditions unless requested or approved by the Department. Any DMR data required by the Permit that cannot be reported in a NetDMR field (e.g. mixing zone receiving water data, etc…), shall be included as an attachment to the NetDMR submittal. DEC has established an e-Reporting

Information website at http://dec.alaska.gov/water/compliance/electronic-reporting-rule that contains general information about this new reporting format. Training materials and webinars for NetDMR can be found at https://netdmr.zendesk.com/home.

3.1.2 E-Reporting Rule for Other Reports (Phase II).

Phase II of the E-Reporting rule will integrate electronic reporting for all other reports required by the Permit (e.g., Annual Reports and Certifications) and implementation is expected to begin December 2025. Permittees should monitor DEC's E-Reporting Information website http://dec.alaska.gov/water/compliance/electronic-reporting-rule for updates on Phase II of the E-Reporting Rule and will be notified when they must begin submitting all other reports electronically. Until such time, other reports required by the Permit may be submitted in accordance with Appendix A – Standard Conditions.

3.2 Removed Substances

Collected screenings, grit, solids, scum, and other facility residuals, or other pollutants removed in the course of treatment or control of water and wastewaters shall be disposed of in a Department approved manner and method in accordance with 18 AAC 60, such as to prevent any pollution from such materials from entering navigable waters.

Appendix B

Acronyms

APPENDIX B

The following acronyms are common terms that may be found in an Alaska Pollutant Discharge Elimination System (APDES) permit.

18 AAC 15	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 15: Administrative Procedures
18 AAC 70	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 70: Water Quality Standards
18 AAC 72	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 72: Wastewater Disposal
18 AAC 83	Alaska Administrative Code. Title 18 Environmental Conservation, Chapter 83: Alaska Pollutant Discharge Elimination System

All chapters of Alaska Administrative Code, Title 18 are available at the Alaska Administrative Code database http://www.legis.state.ak.us/cgi-bin/folioisa.dll/aac

40 CFR	Code of Federal Regulations Title 40: Protection of Environment
AAC	Alaska Administrative Code
ACMP	Alaska Coastal Management Program
ADEC	Alaska Department of Environmental Conservation
Ag	Silver
Al	Aluminum
As	Arsenic
APDES	Alaska Pollutant Discharge Elimination System
AS	Alaska Statutes
AS 46.03	Alaska Statutes Title 46, Chapter 03: Environmental Conservation. Available at http://www.legis.state.ak.us/default.htm
BOD_5	Biochemical Oxygen Demand, 5-day
BMP	Best Management Practice
Cd	Cadmium
CFR	Code of Federal Regulations
COD	Chemical Oxygen Demand
Cr^{+3}	Chromium (III) or Trivalent Chromium
Cr^{+6}	Chromium (VI) or Hexavalent Chromium
Cu	Copper
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
EPA	U.S. Environmental Protection Agency
FC	Fecal Coliform Bacteria

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Fe	Iron
GPD or gpd	Gallons per day
GPY or gpy	Gallons per year
Hg	Mercury
IC_{25}	Inhibition Concentration 25%
I/I	Infiltration and Inflow
LC_{50}	Lethal Concentration 50%
MDL	Method Detection Limit
mg/L	Milligrams per Liter
MGD or mgd	Million gallons per day
ML	Minimum Level
MLLW	Mean Lower Low Water
MZ	Mixing Zone
N/A	Not Applicable
Ni	Nickel
NOEC	No Observed Effect Concentration
Pb	Lead
POTW	Publicly Owned Treatment Works
PQL	Practical Quantification Limit
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QC	Quality Control
RL	Reporting Limit
RWC	Receiving Water Concentration
Se	Selenium
SIU	Significant Industrial User
SU	Standard Units
TIE	Toxicity Identification Evaluation
TRC	Total Residual Chlorine
TRE	Toxicity Reduction Evaluation
TSS	Total Suspended Solids
TUc	Toxic Unit, Chronic
µg/L	Micrograms per Liter
U.S.C.	United States Code
WQS	Water Quality Standards

WWTF	Wastewater Treatment Facility
Zn	Zinc

Appendix C

Definitions

APPENDIX C

The following are common definitions of terms associated with APDES permits. Not all the terms listed may appear in a permit. Consult the footnote references for a complete list of terms and definitions.

Administrator[a]	Means the Administrator of the EPA or an authorized representative
Alaska Pollutant Discharge Elimination System (APDES)[a]	Means the state's program, approved by EPA under 33 U.S.C. 1342(b), for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits and imposing and enforcing pretreatment requirements under 33 U.S.C. 1317, 1328, 1342, and 1345
Annual	Means once per calendar year
Aquaculture[b]	Means the cultivation of aquatic plants or animals for human use or consumption
Average	Means an arithmetic mean obtained by adding quantities and dividing the sum by the number of quantities
Average Monthly Discharge Limitation[a]	Means the highest allowable average of "daily discharges" over a calendar month calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured for that month
Backwash	Means wash water resulting from the backwashing of a water filter
Best Management Practices (BMPs)[a]	Means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage areas.
Biochemical Oxygen Demand (BOD)[c]	Means the amount, in milligrams per liter, of oxygen used in the biochemical oxidation of organic matter in five days at 20º C
Black Water	Means water that contains animal, human, or food waste
Boundary[b]	Means line or landmark that serves to clarify, outline, or mark a limit, border, or interface
Bypass[a]	Means the intentional diversion of waste streams from any portion of a treatment facility
Chemical Oxygen Demand (COD)[f]	Is used as a measure of the oxygen equivalent of the organic matter content of a sample that is susceptible to oxidation by a strong chemical oxidant
Clean Water Act (CWA)[a]	Means the federal law codified at 33 U.S.C. 1251-1387, also referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972
Commissioner[a]	Means the commissioner of the Alaska Department of Environmental Conservation or

a) See 18 AAC 83
b) See 18 AAC 70.990
c) See 18 AAC 72.990
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	the commissioner's designee
Composite Samples	Composite samples must consist of at least eight equal volume grab samples. 24 hour composite sample means a combination of at least eight discrete samples of equal volume collected at equal time intervals over a 24-hour period at the same location. A "flow proportional composite" sample means a combination of at least eight discrete samples collected at equal time intervals over a 24-hour period with each sample volume proportioned according to the flow volume. The sample aliquots must be collected and stored in accordance with procedures prescribed in the most recent edition of *Standard Methods for the Examination of Water and Wastewater*.
Contact Recreation[b]	Means activities in which there is direct and intimate contact with water. Contact recreation includes swimming, diving, and water skiing. Contact recreation does not include wading.
Cooling Water	Means once-through non-contact cooling water
Criterion[b]	Means a set concentration or limit of a water quality parameter that, when not exceeded, will protect an organism, a population of organisms, a community of organisms, or a prescribed water use with a reasonable degree of safety. A criterion might be a narrative statement instead of a numerical concentration or limit.
Daily Discharge[a]	Means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for the purposes of sampling. For pollutants measured in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with a limitation expressed in other units of measurement, the "daily discharge" is calculated as the average measurement of the pollutant over the day.
Datum	A datum defines the position of the spheroid, a mathematical representation of the earth, relative to the center of the earth. It provides a frame of reference for measuring locations on the surface of the earth by defining the origin and orientation of latitude and longitude lines.
Department[a]	Means the Alaska Department of Environmental Conservation
Design Flow[a]	Means the wastewater flow rate that the plant was designed to handle
Director[a]	Means the commissioner or the commissioner's designee assigned to administer the APDES program or a portion of it, unless the context identifies an EPA director
Discharge[a]	When used without qualification, discharge means the discharge of a pollutant
Discharge of a Pollutant[a]	Means any addition of any pollutant or combination of pollutants to waters of the United States from any point source or to waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft that is being used as a means of transportation. Discharge includes any addition of pollutants into waters of the United States from surface runoff that is collected or channeled by humans; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person that do not lead to a treatment works; discharges through pipes, sewers,

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	or other conveyances leading into privately owned treatment works; and does not include an addition of pollutants by any indirect discharger.
Dissolved Oxygen (DO)[b]	Means the concentration of oxygen in water as determined either by the Winkler (iodometric) method and its modifications or by the membrane electrode method. The oxygen dissolved in water or wastewater and usually expressed in milligrams per liter or percent saturation
Domestic Wastewater[c]	Means waterborne human wastes or graywater derived from dwellings, commercial buildings, institutions, or similar structures. "Domestic wastewater" includes the contents of individual removable containers used to collect and temporarily store human wastes.
Ecosystem[b]	Means a system made up of a community of animals, plants, and bacteria and the system's interrelated physical and chemical environment
Effluent[b]	Means the segment of a wastewater stream that follows the final step in a treatment process and precedes discharge of the wastewater stream to the receiving environment
Estimated	Means a way to estimate the discharge volume. Approvable estimations include, but are not limited to, the number of persons per day at the facility, volume of potable water produced per day, lift station run time, etc.
Excluded area	Means an area not authorized as a receiving water under a permit
Fecal Coliform Bacteria (FC)[b]	Bacteria that can ferment lactose at 44.5° + 0.2°C to produce gas in a multiple tube procedure. Fecal coliform bacteria also means all bacteria that produce blue colonies in a membrane filtration procedure within 24 ± 2 hours of incubation at 44.5° + 0.2°C in an M-FC broth.
Fish[b]	Means any of the group of cold-blooded vertebrates that live in water and have permanent gills for breathing and fins for locomotion
Final Approval to Operate	Means the approval that the Department issues after it has reviewed and approved the construction and operation of the engineered wastewater treatment works plans submitted to the Department in accordance with 18 AAC 72.215 through 18 AAC 72.280 or as amended.
Fixed location	Means the outfall(s) (past or present) of an on-shore facility or the anchorage of a vessel within a circular area with a radius equal to one-half (0.5) nautical mile
Geometric Mean	The geometric mean is the N^{th} root of the product of N. All sample results of zero will use a value of 1 for calculation of the geometric mean. Example geometric mean calculation: $\sqrt[4]{12x23x34x990} = 55$.
Grab Sample	Means a single instantaneous sample collected at a particular place and time that represents the composition of wastewater only at that time and place
Gray Water[b]	Means wastewater from a laundry, kitchen, sink, shower, bath, or other domestic

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	source that does not contain excrement, urine, or combined stormwater
Influent	Means untreated wastewater before it enters the first treatment process of a wastewater treatment works
Inhibition Concentration 25% (IC_{25})[e]	Means the point estimate of the toxicant concentration that would cause 25% reduction in a nonlethal biological measurement of the test organisms, such as reproduction or growth
Lethal Concentration 50% (LC_{50})[e]	Mean the point estimate of the toxicant that would be lethal to 50% of the test organisms during a specific period
Maximum Daily Discharge Limitation[a]	Means the highest allowable "daily discharge"
Mean[b]	Means the average of values obtained over a specified period and, for fecal coliform analysis, is computed as a geometric mean
Mean Lower Low Water[b]	Means the tidal datum plane of the average of the lower of the two low waters of each day, as would be established by the National Geodetic Survey, at any place subject to tidal influence
Measured	Means the actual volume of wastewater discharged using appropriate mechanical or electronic equipment to provide a totalized reading. Measure does not provide a recorded measurement of instantaneous rates.
Method Detection Limit (MDL)[d]	Means the minimum concentration of a substance (analyte) that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte
Micrograms per Liter (µg/L)[b]	Means the concentration at which one millionth of a gram (10^{-6} g) is found in a volume of one liter
Milligrams per Liter (mg/L)[b]	Means the concentration at which one thousandth of a gram (10^{-3} g) is found in a volume of one liter. It is approximately equal to the unit "parts per million (ppm)," formerly of common use.
Minimum Level (ML)[e]	Means the concentration at which the entire analytical system must give a recognizable signal and an acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method-specified sample weights, volumes, and processing steps have been followed. This level is used as the compliance level if the effluent limit is below it.

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Mixing Zone[b]	Means a volume of water adjacent to a discharge in which wastes discharged mix with the receiving water
Month	Means the time period from the 1st of a calendar month to the last day in the month
Monthly Average	Means the average of daily discharges over a monitoring month calculated as the sum of all daily discharges measured during a monitoring month divided by the number of daily discharges measured during that month
No Observed Effect Concentration (NOEC)[e]	Means the highest concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. NOEC is determined using hypothesis testing.
Permittee	Means a company, organization, association, entity, or person who is issued a wastewater permit and is responsible for ensuring compliance, monitoring, and reporting as required by the permit
pH[g]	Means a measure of the hydrogen ion concentration of water or wastewater; expressed as the negative log of the hydrogen ion concentration in mg/L. A pH of 7 is neutral. A pH less than 7 is acidic, and a pH greater than 7 is basic.
Practical Quantification Limit (PQL)[g]	Means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions.
Primary Contact Recreation	See Contact Recreation
Principal Executive Officer[a]	Means the chief executive officer of the agency or a senior executive officer having responsibility for the overall operations of a principal geographic unit of division of the agency
Pollutant[a]	Means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under 42 U.S.C. 2011), heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, or agricultural waste discharged into water
Quality Assurance Project Plan (QAPP)	Means a system of procedures, checks, audits, and corrective actions to ensure that all research design and performance, environmental monitoring and sampling, and other technical and reporting activities are of the highest achievable quality
Quarter	Means the time period of three months based on the calendar year beginning with January

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APPENDIX C

Receiving Water Body	Means lakes, bays, sounds, ponds, impounding reservoirs, springs, wells, rivers, streams, creeks, estuaries, marshes, inlets, straits, passages, canals, the Pacific Ocean, Gulf of Alaska, Bering Sea, and Arctic Ocean, in the territorial limits of the state, and all other bodies of surface water, natural or artificial, public or private, inland or coastal, fresh or salt, which are wholly or partially in or bordering the state or under the jurisdiction of the state. (See "Waters of the U.S." at 18 AAC 83.990(77))
Recorded	Means a permanent record using mechanical or electronic equipment to provide a totalized reading, as well as a record of instantaneous readings
Report	Report results of analysis
Residual Chlorine	Means chlorine remaining in water or wastewater at the end of a specified contact period as combined or free chlorine
Responsible Corporate Officer[a]	Means a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function or any other person who performs similar policy or decision making functions for the corporation The Responsible Corporate Officer can also be the manager of one or more manufacturing, production, or operating facilities if the requirements of 18 AAC 83.385(a)(1)(B)(i)-(iii) are met.
Settleable Solids[b]	Means solid material of organic or mineral origin that is transported by and deposited from water, as measured by the volumetric Imhoff cone method and at the method detection limits specified in method 2540(F), *Standard Methods for the Examination of Water and Wastewater*, 18th edition (1992), adopted by reference in 18 AAC 70.020(c)(1)
Severe Property Damage[a]	Means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
Sheen[b]	Means an iridescent appearance on the water surface
Shellfish[b]	Means a species of crustacean, mollusk, or other aquatic invertebrate with a shell or shell-like exoskeleton in any stage of its life cycle
Significant Industrial User (SIU)[g]	Means an indirect discharger that is the focus of control efforts under the national pretreatment program; includes all indirect dischargers subject to national categorical pretreatment standards, and all other indirect dischargers that contribute 25,000 gpd or more of process wastewater, or which make up five percent or more of the hydraulic or organic loading to the municipal treatment plant, subject to certain exceptions [40 CFR $403.3(t)].

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APPENDIX C

Suspended Solids	Means insoluble solids that either float on the surface of, or are in suspension in, water, wastewater, or other liquids. The quantity of material removed from wastewater in a laboratory test, as prescribed in *Standard Methods for the Examination of Water and Wastewater* and referred to as nonfilterable.
Total Suspended Solids (TSS)[g]	Means a measure of the filterable solids present in a sample, as determined by the method specified in 40 CFR Part 136
Toxic Unit, Chronic (TUc)[e]	Means the reciprocal of the effluent concentration that causes no observable effect on the test organisms by the end of the chronic exposure period (i.e., 100/NOEC)
Twice per year	Means two time periods during the calendar year: October through April and May through September
Upset[a]	Means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
Water Depth	Means the depth of the water between the surface and the seafloor as measured at MLLW
Wastewater Treatment	Means any process to which wastewater is subjected in order to remove or alter its objectionable constituents and make it suitable for subsequent use or acceptable for discharge to the environment
Waters of the United States or Waters of the U.S.	Has the meaning given in 18 AAC 83.990(77)
Water Recreation[b]	See contact recreation or secondary recreation
Water Supply[b]	Means any of the waters of the United States that are designated in 18 AAC 70 to be protected for fresh water or marine water uses. Water supply includes waters used for drinking, culinary, food processing, agricultural, aquacultural, seafood processing, and industrial purposes. Water supply does not necessarily mean that water in a waterbody that is protected as a supply for the uses listed in this paragraph is safe to drink in its natural state.
Week	Means the time period of Sunday through Saturday

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