

STATE OF ALASKA
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
FINAL CERTIFICATE OF REASONABLE ASSURANCE

A Certificate of Reasonable Assurance, as required by Section 401 of the Clean Water Act, has been requested by the Environmental Protection Agency (EPA) for the marine water discharge of primary treated domestic wastewater from the City of Sitka Wastewater Treatment Facility (WWTF).

The activity is located at 57.038776° north latitude, 135.345059° west longitude, near Sitka, Alaska with discharges to Sitka Sound.

Water Quality Certification is required for the activity because the activity will be authorized by an EPA permit identified as National Pollutant Discharge Elimination Permit No. AK0021474 and because a discharge will result from the activity.

Public notice of the application for this certification was made in accordance with 18 Alaska Administrative Code (AAC) 15.180. Public notice of the City of Sitka's Antidegradation Form 2G, included as an attachment to this certification, was made in accordance with 18 AAC 70.016. In accordance with 18 AAC 70.016, *Antidegradation implementation methods for discharges authorized under the federal Clean Water Act*, the Alaska Department of Environmental Conservation (DEC or Department) reviewed the City of Sitka's Antidegradation Form 2G and determined that the information provided by the City of Sitka complies with the requirements of 18 AAC 70.016.

DEC has completed its review of EPA's Draft National Pollutant Discharge Elimination Permit (NPDES) No. AK0021474 and associated documents and by means of this Final Certificate of Reasonable Assurance certifies that there is reasonable assurance that the activity and the resulting proposed modified discharge from the Sitka WWTF is compliant with the requirements of Section 401 of the Clean Water Act, 40 Code of Federal Regulations (CFR) 125.61, Alaska Statutes Title 46, and Alaska Water Quality Standards 18 AAC 70 provided that the modified discharge adheres to the stipulations provided below in this certification. Furthermore, as per 40 CFR 125.64(b), the Department has determined that the modified discharge will not result in an additional treatment pollution control or other requirement on any other point or nonpoint sources as Sitka Sound is not included on DEC's 2022 [Integrated Water Quality Monitoring and Assessment Report](#) as an impaired waterbody nor is the subject portion of Sitka Sound subject to a proposed or approved Total Maximum Daily Load.

The Final Certification of Reasonable Assurance is contingent on the inclusion of the following stipulations in NPDES Permit No. AK0021474:

1. In accordance with 18 AAC 70.240, DEC authorizes mixing zones in Sitka Sound for copper, ammonia, dissolved oxygen, total residual chlorine, and whole effluent toxicity contained in the discharge from the Sitka WWTF. The mixing zones are defined as follows:

The chronic mixing zone has a dilution of 76:1 and is defined as a rectangular area with a length of 63 meters and width of 25 meters centered over the diffuser with the length oriented perpendicular to the shoreline.

The acute mixing zone has a dilution of 46:1 and is defined as a rectangular area with a length of 60 meters and width of 18 meters centered over the diffuser with the length oriented perpendicular to the shoreline.

Rationale: In accordance with State Regulations 18 AAC 70.240, the department has authority to designate mixing zones in permits or certifications. The designated mixing zones will ensure that the most stringent water quality criteria for copper (acute 5.78 micrograms per liter (µg/L) total recoverable, chronic 3.73 µg/L total recoverable), ammonia (acute 4.0 milligrams per liter (mg/L), chronic 0.6 mg/L), dissolved oxygen (6.0 mg/L daily minimum (surface for a depth of 1 meter, no less than 4 mg/L at any depth below the surface), 17 mg/L daily maximum), total residual chlorine (acute 0.013 mg/L, chronic 0.0075 mg/L with 0.1 mg/L compliance level), and whole effluent toxicity (1.0 chronic toxic units) are met at all points outside of the mixing zone.

2. In order for the Sitka WWTF to achieve compliance with the fecal coliform and enterococcus bacteria final effluent limits, DEC requires the establishment of a Compliance Schedule in the permit. Final effluent limits must be met as soon as possible, but no later than 5 years after the effective date of the permit. Interim requirements that will lead to compliance with the final effluent limits with dates for their achievement must be established in the permit. The following interim requirements shall be included in the Compliance Schedule:

By one year after the effective date of the permit, the permittee shall develop a facility plan that evaluates alternatives to meet the final fecal coliform and enterococcus bacteria effluent limits and select their preferred alternative.

By two years after the effective date of the permit, the permittee must complete the design of the preferred alternative and request approval to construct from DEC's Engineering Support and Plan Review (ESPR).

By three years after the effective date of the permit, the permittee must secure funding and select a contractor to construct upgrades.

By four years after the effective date of the permit, the permittee must commence construction.

By five years after the effective date of the permit, the permittee must complete construction, complete optimization of facility upgrade operations, and achieve compliance with the final fecal coliform and enterococcus effluent limits. Final approval to operate must be requested from ESPR.

The permittee must submit progress or compliance reports on interim and final requirements no later than 14 days following the scheduled date of each requirement.

Rationale:

In accordance with State Regulations 18 AAC 15.090, the Department may attach terms and reporting requirements, and the posting of a performance bond or other surety, that it considers necessary to ensure that conditions to a permit, variance, or approval, including operating, monitoring, inspection, sampling, access to records and all applicable criteria will be met.

According to 18 AAC 83.560, the Department has authority to specify a schedule of compliance leading to compliance with 33 U.S.C. 1251-1387 (Clean Water Act). Any schedule of compliance must require compliance as soon as possible, but no later than the applicable statutory deadline under 33 U.S.C. 1251-1387 (Clean Water Act). 18 AAC 83.560(b) requires interim requirements and dates for their achievement if the schedule of compliance exceeds one year from the date of permit issuance. Time between interim requirements must not exceed one year. Progress reports must be submitted no later than 14 days following each interim date and the final date of compliance.

According to 18 AAC 72.200, Application for department approval, (a) Except as otherwise provided in 18 AAC 72.035(d) and 18 AAC 72.200(b), a person must submit a plan to the department and obtain approval of that plan before constructing, installing, or modifying any part of a domestic wastewater collection, treatment, storage, or disposal system. To obtain approval, a person shall provide to the department the information required by 18 AAC 72.205. 18 AAC 72.240, states that the department will issue final approval to operate if the information required by 18 AAC 72.235 confirms that (A) the system was constructed as originally approved or (B) the system, or a designated phase of that system, otherwise meets the requirements of AS 46.03 and 18 AAC 72. DEC plan approval requirements will ensure that the most stringent water quality criteria for fecal coliform and enterococcus bacteria are met at all points outside the mixing zone.

3. DEC requires that the permit contain the following final fecal coliform effluent limits:

Monthly Average 200 fecal coliform per 100 mL (FC/100 mL)
Weekly Average 400 FC/100 mL
Daily Maximum 800 FC/100 mL.

Rationale:

In accordance with State Regulations 18 AAC 15.090, the Department may attach terms and reporting requirements, and the posting of a performance bond or other surety, that it considers necessary to ensure that conditions to a permit, variance, or approval, including operating, monitoring, inspection, sampling, access to records and all applicable criteria will be met.

18 AAC 72.990(21) defines disinfect to treat by means of a chemical, physical, or other process such as chlorination, ozonation, application of ultraviolet light, or sterilization, designed to eliminate pathogenic organisms, and producing an effluent with a 30-day 200 FC/100 mL monthly average and a seven-day 400 FC/100 mL average. These limits are required as final fecal coliform limits. A daily maximum final effluent limit of 800 FC/100 mL limit is also required. Establishment of a daily maximum limit will help ensure compliance with water quality criteria. Since these limits are dependent on the use of specific technological processes, DEC applies these final fecal coliform bacteria effluent limits as technology-based limits. These final fecal coliform bacteria effluent limits will ensure that the most stringent water quality criteria for fecal coliform bacteria are met at all points outside the mixing zone.

4. DEC requires that based on the chronic dilution of the driving parameter of the mixing zone (copper, with a chronic dilution of 76:1), the permit contain the following final enterococcus bacteria limits:

30-day Geometric Mean 2,660 colony forming unit (CFU)/100 mL
Daily Maximum 9,880 CFU/100 mL).

Rationale:

In accordance with State Regulations 18 AAC 15.090, the Department may attach terms and reporting requirements, and the posting of a performance bond or other surety, that it considers necessary to ensure that conditions to a permit, variance, or approval, including operating, monitoring, inspection, sampling, access to records and all applicable criteria will be met.

These final enterococcus bacteria limits will ensure that the most stringent water quality criteria for enterococcus bacteria are met at all points outside the mixing zone. DEC expects that after the implementation of disinfection, the Sitka WWTF may achieve compliance with enterococcus water quality criteria (30-day geometric mean 35 CFU/100 mL with not more than 10% of the samples exceeding a

statistical threshold value of 130 CFU/100 mL), therefore these final enterococcus bacteria limits may be revised in the next permit reissuance.

5. DEC requires the following copper effluent limits:

Average Monthly 110 µg/L (total recoverable)

Daily Maximum 241 µg/L (total recoverable)

Rationale:

18 AAC 70.240(b)(2) requires the Department to consider the characteristics of the effluent after treatment of the wastewater. Additionally, 18 AAC 83.435(d) specifies that when the Department determines, using the procedures in 18 AAC 83.435(c), that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the allowable ambient concentration of a state numeric criteria within a state water quality standard for and individual permit, the permit must contain effluent limits for that pollutant.

DEC used the process described in the Technical Support Document (TSD) for Water Quality-Based Toxics Control (Environmental Protection Agency, 1991) and DEC's guidance, Alaska Pollutant Discharge Elimination System Permits Reasonable Potential Analysis and Effluent Limits Development Guide (June 30, 2014) to determine the reasonable potential for copper to exceed water quality criteria. The results of the reasonable potential analysis indicated that copper with a maximum expected concentration of 239 µg/L total recoverable, has reasonable potential to exceed Alaska copper marine water quality criteria (chronic 3.7 µg/L total recoverable, acute 5.8 µg/L total recoverable). Effluent limits, using the dilution required to meet copper water quality criteria in the receiving water (chronic 46:1, acute 76:1) were therefore developed (average monthly 110 µg/L total recoverable, daily maximum 241 µg/L total recoverable). These effluent limits will ensure that the most stringent copper water quality criteria are met at all points outside the mixing zone.

6. DEC requires the following ammonia effluent limits:

Average Monthly 35 mg/L

Daily Maximum 53 mg/L

Rationale:

18 AAC 70.240(b)(2) requires the Department to consider the characteristics of the effluent after treatment of the wastewater. Additionally, 18 AAC 83.435(d) specifies that when the Department determines, using the procedures in 18 AAC 83.435(c), that a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above the allowable ambient concentration of a state numeric criteria within a state water quality standard for and individual permit, the permit must contain effluent limits for that pollutant.

DEC used the process described in the Technical Support Document (TSD) for Water Quality-Based Toxics Control (Environmental Protection Agency, 1991) and DEC's guidance, Alaska Pollutant Discharge Elimination System Permits Reasonable Potential Analysis and Effluent Limits Development Guide (June 30, 2014) to determine the reasonable potential for ammonia to exceed water quality criteria. The results of the reasonable potential analysis indicated that ammonia with a maximum expected concentration of 33 mg/L, has reasonable potential to exceed Alaska ammonia marine water quality criteria (chronic 0.6 mg/L, acute 4.0 mg/L) which were calculated using the 85th percentile receiving water pH and temperature and the 15th percentile receiving water salinity. Effluent limits, using the dilution required of the pollutant requiring the most dilution to meet water quality criteria in the receiving water (copper with dilutions of

chronic 46:1, acute 76:1) were therefore developed (average monthly 35 mg/L, daily maximum 53 mg/L). These effluent limits will ensure that the most stringent ammonia water quality criteria are met at all points outside the mixing zone.



Signature

September 7, 2023

Date

Gene McCabe

Printed Name

Program Manager

Title