Department of Environmental Conservation
Response to Comments
For
Hecla Greens Creek Mining Company
APDES Permit No. AK0043206
Public Noticed: May 3, 2023 – June 7, 2023
Extended Public Noticed: June 14, 2023 – June 19, 2023

August 16, 2023

Alaska Department of Environmental Conservation
Wastewater Discharge Authorization Program

1 Introduction

1.1 Summary of Facility / Permit

Hecla Greens Creek Mine (HGCMC) is an underground polymetallic mine producing approximately 2,200 to 2,400 tons of ore per day. This ore is milled through an on-site grinding circuit and flotation concentrator, with some precious metal first extracted by gravity. Concentrates are then shipped internationally to smelters for refinement. Tailings from the concentrator and waste rock from mining are either returned to the underground workings or placed in a permitted storage area.

The HGCMC mine facilities encompass approximately 273 acres located in the Admiralty Island National Monument. The Admiralty Island National Monument is managed by the U.S. Forest Service and is located in the Greens Creek, Zinc Creek, Cannery Creek and Tributary Creek drainages. These creeks flow into Hawk Inlet. Major site facilities include the underground mine, waste rock storage areas, mill, dry tailings disposal site, port facilities (Hawk Inlet terminal facilities), and roads connecting these components.

1.2 Opportunity for Public Participation

The Alaska Department of Environmental Conservation (DEC or the Department) proposed to issue an APDES wastewater discharge permit to Hecla Greens Creek Mining Company. To ensure public, agency, and tribal notification and opportunities for participation, the Department:

- identified the permit via online posting on the DEC Wastewater Permit Issuance Plan website at: Permit Issuance Plan (alaska.gov).
- notified potentially affected tribes and local governments and other agencies that the Department would be working on this permit via letter, fax and/or email
- published a public notice in the Juneau Empire newspaper on May 3, 2023 and May 6, 2023.
- posted a public notice of the draft permit on the Department's public notice webpage and notified tribes, local governments, and other agencies
- sent email notifications via the APDES Program List Serve when the preliminary draft, draft, and proposed final permits were available for review

The Department received comments from the following four parties on the draft permit.

- Southeast Alaska Conservation Council (SEACC)
- Hecla Greens Creek Mining Company
- Angoon Community Association
- Douglas Mertz – a citizen

This document summarizes the comments submitted and the justification for any action taken or not taken by DEC in response to the comments. Comments pertaining to editorial corrections that resulted

in changes to the permit and fact sheet are not included in this document. Substantive comments concerning requirements of the draft permit and DEC's responses are contained in the following pages. DEC did not respond to comments outside the scope or beyond regulatory authority of the permit.

1.3 Final Permit

The final permit was adopted by the Department on August 16, 2023. There were changes from the public noticed permit. Significant issues are identified in the response to comments and have been accounted for in the final permit and fact sheet for the permit.

2 Comments on Effluent Limits and Monitoring Requirements

2.1 Comment Summary

SEAAC says that DEC should reduce the size of mixing zones and lower the 2023 effluent limits to more closely match the practicable discharge concentration from the water treatment plant. To make a point, SEACC compares effluent limits in the proposed HGCMC permit with effluent limits established for the Red Dog Mine. SEAAC asserts that DEC should require the applicant to undertake a cost analysis of improving treatments at the water treatment plants to higher levels.

Response:

DEC process for establishing effluent limits is described in detail in Appendix B. This process uses effluent data from the previous permit period of record. Effluent limit changes are described in Fact Sheet Section 7.0 and where limits have increased from the previous permitting period, the Department is required to conduct an antidegradation analysis described in Fact Sheet Section 8.0.

The comment compares effluent limits in the proposed permit with effluent limits established for the Red Dog Mine. Effluent limits are site specific and are based on influent data, receiving water data and water treatment efficacy which can vary considerably between facilities. However, the effluent limit calculation methods used in the proposed Greens Creek permit and the Red Dog Mine permit are compliant with the Clean Water Act and 18 AAC 83.

Cost analysis is not a requirement of the antidegradation analysis at 18 AAC 70.015 and 18 AAC 70.016.

No change to the permit is warranted based on this comment.

2.2 Comment Summary

SEAAC questions the need for additional outfall 002A and its location. Additionally, the comment suggests allow flow augmentation to eliminate the need for mixing zones.

Response:
The explanation for designating Outfall 002A is provided in Fact Sheet Sections 5.2 & 6.3. There is no difference in the pollutant concentrations between Outfall 002 and 002A which is reflected in the identical effluent limit concentrations between the two outfalls. The location of Outfall 002A, proposed by the applicant, meets mixing zone requirements and does not overlap with the mixing zone authorized for Outfall 002.

The Department considered the flow augmentation approach for this facility. DEC considered the costs and benefits of installing massive tanks, pumps, mixers, and pipes onshore and the continuous expenditure of a considerable amount of electrical energy for diluting treated effluent before discharge. The permittee uses ferric co-precipitation producing a high quality effluent, which consistently exceeds the highest statutory and regulatory requirements by a large margin, and it was determined to be the most effective and reasonable treatment technology. It should be noted that, as a policy, EPA generally discourages the use of flow augmentation as an alternative to treatment for meeting water quality standards (Use of Low Flow Augmentation by Point Sources to Meet Water Quality Standards, EPA Memo, November 1976).

No change to the permit is warranted based on this comment.

2.3 Comment Summary

SEACC says that DEC has not demonstrated that lowering water quality is necessary to accommodate important economic or social development.

Response:
Fact Sheet Section 8.0 provides an analysis of "important economic and social development" to justify authorizing the lowering of water quality in compliance with the Antidegradation Policy at 18 AAC 70.015 and Antidegradation Implementation Methods at 18 AAC 70.016.

No change to the permit is warranted based on this comment.

2.4 Comment Summary

SEACC commented that the EFH discussion in the permit and fact sheet should include all species for which Hawk Inlet provides EFH and recognize the importance of prey species. Per Dr. Balsiger's scoping comment letter, "Groundfish and Pacific salmon prey on krill and shrimp during the life history stages present in Hawk Inlet, so regular tissue samples of their prey items will assess any adverse impacts from proximity to current or expanded mining operations."

Response:

Dr. Balsiger's report on the additional EFH habitat species for Hawk Inlet was included in Fact Sheet Section 11.2.

2.5 Comment Summary

SEACC commented effluent concentration data gathered by the discharger between May 2016 and April 2021 demonstrate that the water treatment facility is capable of treating the cadmium, copper, lead, mercury, and zinc in the wastewater to concentrations significantly lower than those established in the 2015 permit effluent limits. As a result, the Alaska Department of Environmental Conservation (ADEC) lowered the effluent limits for these contaminants in the 2023 draft permit and reduced the size of the 002 outfall acute mixing zone. SEACC commends this approach and supports lowered effluent limits for the 2023 permit and reduced or eliminated mixing zones. A stated goal of the Clean Water Act is to eliminate the discharge of pollutants into navigable waters of the United States.

Response:

The Department appreciates this comment.

No change to the permit is warranted based on this comment.

2.6 Comment Summary

HECLA Greens Creek Mining Company has identified various typos and editorial changes in the Permit and the Fact Sheet.

Response:
DEC have accepted the editorial changes and corrected the typos.

2.7 Comment Summary

HECLA Greens Creek Mining Company asserts that based on the reasonable potential analysis in the draft Permit and Fact Sheet, the cadmium and cyanide limits should be higher. Company argues for the use of technology based effluent limits which are higher than the water quality based effluent limits.

Response:
After the MDL and AML are calculated, the RPA Tool compares the more protective WQBELs with the TBELs. When there is no reasonable potential at the end of the pipe but TBELs are established for the pollutant, WQBELs still must be calculated using the authorized dilution values if there is an applicable WQC. The effluent limit is the more stringent of the calculated WQBEL or the TBEL. Note that this method does not provide dilution to meet TBEL. Instead, this method authorizes a mixing zone for a pollutant when it has been determined that the WQBEL is more stringent after comparison with the TBEL.

No change to the permit is warranted based on this comment.

2.8 Comment Summary

Angoon Community Association (Angoon) demands that DEC should declare the Greens Creek tailings as “irreparable harm” to the health and well- being of our indigenous people.

Response:

DEC does not have either a scientific basis nor the regulatory authority to make an “irreparable harm” designation.

Tailings from the Greens Creek mine are stored in either engineered Tailings Storage Facilities or in underground workings. Both methods of tailings storage have been approved by the Department and is authorized under Waste Management Permit (WMP) 2020DB0001.

The environmental monitoring program for Greens Creek Mine initiated in 1984 and include; fresh and marine water, marine sediment, and freshwater and marine tissue samples from pre-mine development to current day. The data does not indicate significant harm to the environmental or human health from baseline conditions.

In 2017, with assistance from EPA, DEC prepared a Total Maximum Daily Load (TMDL) report for Hawk Inlet which involved an extensive collection of all known metal data within the Hawk Inlet area to identify potential sources to the inlet, evaluate spatial or temporal trends, and recommend additional data collection and analyses warranted. This exhaustive data evaluation confirmed there are no water quality impairments. Analyses of recent fish and shellfish tissue in Hawk Inlet are similar to pre-mining conditions. See https://dec.alaska.gov/water/hawk-inlet.

No change to the permit is warranted based on this comment.

2.9 Comment Summary

Angoon suggests that the Indigenous People of the Island be compensated for loss of traditional subsistence and cultural values due to Green Creek mine operations in a manner prescribed by the Tribe.

Response:
This demand is beyond the scope of the proposed permit and the regulatory authority of the Department.

No change to the permit is warranted based on this comment.

2.10 Comment Summary

Angoon asks to delay the EIS process in order to determine the mine's effect on the health of the Hawk Inlet ecosystems by replicating the original population and species diversity study, testing anew for the original 11 metals in the baseline tissue, sediment and water studies, conducting a terrestrial and marine contaminate uptake analysis to the highest trophic levels and comparing with baseline concentrations in eagle, bear and deer. Also, to delineate the extent of fugitive dust contamination in the Monument and Kootsnoowoo Wilderness Area by repeating the 1993 lichen study out to the full extent of measured effects prior to issuing any new permits for tailings expansion.

Response:
An Environmental Impact Statement (EIS) process is a federal action under the National Environmental Policy Act (NEPA). The proposed permit is an action by the State of Alaska which is not subject to NEPA. The State does not have the authority to delay a NEPA process being conducted by a federal agency.

The comment suggests that additional studies be conducted including a replication of a baseline study and a fugitive dust study. In response to the baseline study replication, the Department maintains that current State monitoring programs at Greens Creek Mine have been well received and sustained for decades as an adaptable management system to evaluate and address the effects of the permitted discharges from the mine and the health of Hawk Inlet. Evaluation of fugitive dust concerns are on-going and beyond the scope of the proposed permit.

No change to the permit is warranted based on this comment.

2.11 Comment Summary

Angoon asks to determine and require prevention of the pathways by which mine toxins enter the marine, aquatic fresh water and upland ecosystems. Angoon furthers asks to develop a monitoring plan that can accurately determine the rate and pathways of toxins to higher trophic consumers, including humans.

Response:

The State monitoring programs at Greens Creek Mine have been sustained for decades as an adaptable management system to evaluate and address the effects of the permitted discharges from the mine and the health of Hawk Inlet. The discharges authorized under this permit are protective of receiving water uses and water quality as described in the antidegradation analysis in Fact Sheet Section 8.0.

No change to the permit is warranted based on this comment.

2.12 Comment Summary

Angoon asks to evaluate how the 1989 spill of lead ore concentrate in front of the mine and continuous releases of fugitive dust from the tailings pile affects the Hawk Inlet food chain and terrestrial wildlife. This is necessary as a first step toward developing a mitigation and removal plan.

Response:

The DEC maintains that current State monitoring programs at Greens Creek Mine have been well received and sustained for decades as an adaptable management system to evaluate and address the effects of the permitted discharges from the mine and the health of Hawk Inlet. Site reclamation and monitoring are addressed in WMP 2020DB0001.

No change to the permit is warranted based on this comment.

2.13 Comment Summary

Angoon requests the state of Alaska to declare the entirety of Hawk Inlet as an "Impaired Water Body" under applicable law.

Response:

In 2017, with assistance from EPA, DEC prepared a Total Maximum Daily Load (TMDL) for Hawk Inlet which involved an extensive collection of all known metal data within the Hawk Inlet area to identify potential sources to the inlet, evaluate spatial or temporal trends, and recommend additional data collection and analyses warranted. This exhaustive data evaluation confirmed there are no water quality

impairments. Analyses of recent fish and shellfish tissue are similar to pre-mining conditions. Sediment within localized areas of the historic ore concentrate spill is the only impairment in Hawk Inlet. The TMDL identified point and non-point sources of lead into Hawk Inlet including the 1989 ore spill concentrate, the historic fish cannery, Greens Creek Mine, fugitive dust, and internal cycling of metals. Another source identified is the abandoned Empire Mine across Hawk Inlet from Greens Creek Mine; Empire Creek flows along the toe of the historic Empire Mine tailings pile transporting tailings to Hawk Inlet.

In the 2022 DEC listed 0.83 stream miles of Tributary Creek as impaired for lead. Best management practices, enforceable through the DEC Waste Management Permit, are anticipated to result in attainment of Water Quality Standards for lead within a 10-year timeframe (by 2030), or two permit cycles. Air and water quality monitoring analysis suggest that the deposition of fugitive dust1 from the mine tailings disposal facility is a potential source contributing to the dissolved lead concentrations. However, the potential contribution from other anthropogenic and/or natural sources has not been thoroughly investigated and cannot be ruled out. https://dec.alaska.gov/water/hawk-inlet .

No change to the permit is warranted based on this comment.

2.14 Comment Summary

A citizen (Douglas Mertz) comments that Hecla and its critics have diametrically opposed views on the effects of the current tailings system and future expansion on water quality in Hawk Inlet. There is only one way to resolve this conflict: Require a baseline study by a third party not controlled by Hecla; and require ongoing analysis of water quality and effects on wildlife by a neutral third party, all before expansion can occur. The old saying remains true: You get out of it what you inspect in it.

Response:

This suggestion is beyond the scope of the proposed permit and the regulatory authority of the Department.

No change to the permit is warranted based on this comment.