

Response to Comments

For

Department of Environmental Conservation  
Waste Management Permit No. 2020DB0001  
And  
Department of Natural Resources  
Reclamation Plan Approval No. J20202682RPA

Hecla Greens Creek Mine

Public Noticed: November 29, 2019 – December 30, 2019

FINAL

February 20, 2020

## **Introduction**

This document summarizes and addresses comments received on the Alaska Department of Environmental Conservation (DEC), Waste Management Permit (WMP) No. 2020DB0001 and Alaska Department of Natural Resources (DNR), draft Reclamation Plan Approval (RPA) No. J20202682RPA. The WMP regulates the containment or disposal of mine tailings, waste rock, wastewater, and other mine-related wastes at Greens Creek Mine. Hecla Greens Creek Mining Company (HGCMC) operates the Greens Creek Mine 18 miles southwest of Juneau, Alaska near Hawk Inlet on northern Admiralty Island with federal and patented claims. DEC solicited public comments on the draft WMP from November 29, 2019 through December 30, 2019 and received comments from 1) Friends of Admiralty Island, 2) Hecla Greens Creek Mining Company (HGCMC), and 3) Southeast Alaska Conservation Council (SEACC).

Permit-specific comments on the DEC WMP permit and the DNR RPA and the State's responses to those comments are contained in the following pages. There were changes made to the draft permits resulting from comments received during the public notice period that are reflected in the final permits. Where comments resulted in changes to the permits, associated changes are included in the response to those comments.

### Minor Comments

There were minor changes made to the draft permit(s) after public notice. Minor changes do not alter the meaning or intent of the original language and may include the correction of typographical, grammatical and formatting errors and/or clarification of wording or information. Minor changes to the permit(s) are not further detailed in this document.

*Response to Comments on draft Waste Management Permit No. 2020DB0001 and draft Reclamation Plan Approval No. J20202682RPA for the Hecla Greens Creek Mine*

<b>Comment Number</b>	<b>Comment</b>	<b>Agency Response</b>
1	Please delete Section 2.1.2.6. The permit should not incorporate by reference the Certificate of Approval to Operate a Dam issued by the Alaska Department of Natural Resource. The <i>Certificate of Approval to Operate a Dam</i> is an independent authorization issued by a separate state agency.	The Waste Management Permit (WMP) may incorporate permit conditions that may overlap other permit jurisdictions issued to the regulated facility where non-compliance with the condition(s) of another permit may result in a violation of this permit and/or when compliance actions for the referenced permit may affect compliance with this permit. Permit Section 2.1.2.6 was modified as a result of this comment to the following: <i>"2.1.2.6 Pond 7 and Pond 10, appurtenances of the TDF, operated as approved by the department in consultation with Alaska Department of Natural Resources (ADNR), Division of Mining, Land and Water, Dam Safety and Construction Unit."</i>
2	Permit Section 2.1.3 refers to "appurtenances" associated with Site 23. Hecla requests that DEC either describe the "appurtenances" or delete the reference to appurtenances.	The term "appurtenances" includes but is not limited to impermeable liners, containment embankments, drainage control components such as ditches, roads necessary for the workings, plastic pipes for leachate transmission, and sumps for collection of leachate, manholes, pipe risers, internal dikes, berms, or access ramps. The term "appurtenances" was defined in Permit Section 2.1.3 as a result of this comment. No other changes were made to this permit as a result of this comment.

Comment Number	Comment	Agency Response
3	<p>Please remove the condition from Permit Section 2.1.3.2 requiring “written Department approval” for the temporary storage of waste rock that is not Class 1, Class 2, or Class 3. Hecla has stored rock at Site 23 previously while conducting reclamation activities. Because some of the rock reclaimed had questionable geochemical characteristics, Hecla was approved to build a temporary storage facility at Site 23. The mitigation measures described in Section 2.1.3.2 were used to prevent releases to the environment. Because this activity was previously approved, and the permit describes the necessary mitigation measures, additional approval should not be required. Hecla requests that Section 2.1.3.2 be modified as follows:</p> <p>Rock other than Class 1, Class 2, or Class 3 may be temporarily stored at Site 23 provided that it is placed on an impermeable liner, and containment and drainage controls prevent the release of leachate and runoff, <del>and written Department approval is received.</del></p>	<p>In order to address any case-specific concerns, the storage and controls for unclassified potentially acid generating (PAG) material at Site 23 will continue require written approval from the Department. No changes were made to the permit as a result of this comment.</p>
4	<p>Please revise Permit Section 2.1.3 to include the following new subsection: “2.1.3.5 Ash from burning scrap wood.”</p>	<p>Permit Section 2.1.3.5 was added to section 2.1.3 stating, "Ash from combustion of scrap wood material may be disposed at Site 23." No other changes were made to the permit as a result of this comment.</p>

<b>Comment Number</b>	<b>Comment</b>	<b>Agency Response</b>
5	Please revise Permit Section 2.2.2.1 as follows: “Secondary containment for all chemical mix tanks containing of all hazardous substances, as defined at AS 46.03.826(5), must be impermeable to those stored hazardous substances.”	Permit Section 2.2.2.1 requires secondary containment for the storage of all hazardous substances, as defined at AS 46.03.826(5). The permit language is written as intended to require secondary containment for containers containing hazardous waste. No changes were made to the permit as a result of this comment.

Comment Number	Comment	Agency Response
6	<p>Please clarify the requirement for notification and approval described in Permit Section 2.2.3.1. In addition, the text should be revised to only apply to new chemicals that may have a significant impact on water quality or waste characteristic to be consistent with Permit Section 2.2.1.1. The condition as written first implies notification is only needed if a new chemical "... may affect water quality or waste characteristic." However, the last sentence states, "... new chemicals into the process requires written Department approval." Water treatment chemical manufacturers routinely make adjustments. The provision effectively prevents Hecla from using any new water treatment chemical until approved by DEC. If DEC does not respond within the 15-day period, Hecla should be able to introduce the new chemical. Hecla requests that Permit Section 2.2.3.1 be revised as follows: The permittee shall notify the Department in writing at least 15 days before the introduction of a new chemical into the process or waste treatment streams that may have a significant impact on affect water quality or waste characteristics. Safety Data Sheets on new chemicals must be forwarded to the Department at the time of notification and maintained onsite. The permittee may introduce Introduction of the new chemicals into the process unless notified by the department in writing within 15 days <del>requires written Department approval.</del></p>	<p>As a result of this comment, Permit section 2.2.3.1 was modified to state, "Introduction of new chemicals into the process requires written Department approval. The permittee shall submit an approval request to the Department at least 15 days before the introduction of a new chemical into the process or waste treatment streams. Safety Data Sheets on new chemicals must be forwarded to the Department at the time of notification and maintained onsite."</p>

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7	Please revise Permit Section 2.3.1.3 to include a reference to the FWMP and correct the typo. The first sentence in Permit Section 2.3.1.3 states in pertinent part: “Water chemistry analytical methods employed must be sensitive enough to determine compliance with for all applicable WQS. Hecla requests that the first sentence in Permit Section 2.3.1.3 be modified as follows: Water chemistry analytical methods employed must be sensitive enough to determine compliance with all applicable WQS <u>analytes listed for Suite P and Suite Q of the FWMP.</u>	No changes were made to the permit as a result of this comment.
8	Please delete Permit Section 2.3.3 for the reasons set forth in the comment regarding Permit Section 2.1.2.6.	See Comment Response #1 regarding comment on Permit Section 2.1.2.6. No changes were made to the permit as a result of this comment.
9	Please revise Permit Section 2.6.6.1 as follows: “Continue pollution control activities associated with waste disposal and management, including but not limited to dust control, maintenance of the drainage diversion structures, maintenance of all discharge and leakage control structures and processes, and maintenance of the Pond 7 and Pond 10 dams as specified by the current Certificate of Approval to Operate a Dam and the suspension plan.”	The Waste Management Permit (WMP) incorporates conditions of the current Certificate of Approval to Operate a Dam as an integral part of the permit. For clarification reasons, <b>dams</b> is replaced by <b>dam system</b> to include the appurtenant works of the dams which divert, capture, contain, collect and transfer water to Pond 7 and Pond 10 (Refer to <i>Attachment A-Special Condition 1 of Temporary Certificate of Approval to Operate a Dam Pond 7/10 Dam System dated April 19, 2018/signed by Charlie Cobb, PE of DNR</i> ). No other changes were made to this permit section as a result of this comment.

Comment Number	Comment	Agency Response
10	<p>Please revise Permit Section 2.8 as follows: “A periodic Unless waived by the department, a third-party environmental audit shall be completed during the final year of the permit term or sooner if final closure starts during the permit term. If an audit is required, the field inspection portion of the audit shall be conducted during the snow-free season the year before permit expiration. The audit will include all aspects of this Waste Management Permit. The environmental audit is required to verify HGCMC’s compliance with applicable environmental laws associated with this permit. The third-party contractor selected to perform the environmental audit must be approved by the department and HGCMC, but in the event that agreement cannot be reached, the state retains the final contractor selection decision. Costs for the third-party contractor shall be borne by HGCMC. <u>The intent of the audit is to evaluate whether both HGCMC management and department permit administration provide reasonable assurance that the facility and environmental controls are functioning as intended.</u> The environmental audit shall include an evaluation of the adequacy of the approved financial assurance.”</p>	<p>The Permit Section 2.8 shall read as follows: (This language matches with what we have in the RPA approved by DNR).</p> <p>Unless waived by the Department a periodic third-party environmental audit shall be conducted during the final year of the permit term or sooner if final closure starts during the permit term. If an audit is required, the field inspection portion of the audit shall be conducted during the snow free season the year before permit expiration. The audit will include all aspects of this Waste Management Permit. The environmental audit is intended to verify the Permittee’s compliance with applicable laws and regulations associated with this approval. The third-party contractor should be mutually agreed on by the State and the Permittee, but in the event that agreement cannot be reached, the State retains the final contractor selection decision. Costs for the third-party contractor shall be borne by the Permittee. The environmental audit shall include an evaluation of the adequacy of the approved financial assurance.</p>

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11	Please correct the Present Value of the financial responsibility in Table 1 of Section 4.2 from \$72,721,453 to \$72,721,614. Using this Present Value in Table 1 will result in financial responsibility for reclamation of \$77,496,480 which is consistent with the amount shown for reclamation in the SRCE model submitted to ADEC and ADNR.	The present value in Table 1 of Section 4.1 was in error. The amount was corrected in permit. No other changes were made to this permit section as a result of this comment.
12	<p>The 1981 baseline can be replicated and should be used as originally intended.</p> <p>The "baseline" the State DEC is using (and continually updating) does not provide a scientific comparison with the pre-mining health of Hawk Inlet. The State DEC's opinion that the mine is not the cause of the alarming increase of heavy metals in Hawk Inlet's sediments and animal/plant tissues, but rather increases are the result of natural background leaching has no bases in science.</p>	<p>State permit actions are not contingent upon the replication of predevelopment baseline study. Previous compliance monitoring results do not support the need for expanding or increasing the monitoring requirements for this permit reissuance. Baseline data represents water quality prior to the development of and discharge from the Greens Creek Mine. The baseline data serves as the basis of comparison with pre- and post-mining water quality on selected receiving waters of the Greens Creek Mine area. The Annual Report, required by the WMP, graphically presents the baseline data with water quality data collected during mine operations for selected sites. No changes were made to the permit as a result of this comment.</p>
13	The tailings facility has breached containment and there are multiple pathways that tailings are entering and contaminating the food chain.	The Department disagrees with the assertion that the tailings facility was breached and contaminating the food chain. A review of the monitoring results indicates that the Greens Creek tailings storage facility was operated in compliance with the WMP. There are concerns related to fugitive dust from the TSF, roads and haul trucks and its potential effect on Tributary Creek, which is near the TSF and road system. The Department is working with EPA and Hecla to develop a monitoring plan for the purpose of identifying contaminant pathways and developing best management practices and controls to reduce fugitive dust emissions. No changes were made to the permit as a result of this comment.

Comment Number	Comment	Agency Response
14	<p>Several comments were made referencing the application of Alaska National Interest Lands Conservation Act (ANILCA) to this permit decision, including:</p> <ol style="list-style-type: none"> <li>1) The federal government promulgated regulations to implement ANILCA Section 503(f)(2)(A) under 36 CFR 228.80(b)(2) as it related to mining activities on Admiralty Island. Those regulations include the consideration of “potential adverse impacts on the identified resource values resulting from the proposed operations.”</li> <li>2) The WMP must comply and be implemented consistent with other state and federal laws and statutes as stated in AS 46.03.010 (b) “It is the policy of the state to improve and coordinate the environmental plans, functions, powers, and programs of the state, in cooperation with the federal government, regions, local governments, other public and private organizations, and concerned individuals, and to develop and manage the basic resources of water, land, and air to the end that the state may fulfill its responsibility as trustee of the environment for the present and future generations.” This includes compliance with ANICLA.</li> <li>3) Compliance with ANICLA is enshrined, if not fully implemented in the approved Quality Assurance Protocol Plan (QAPP) guiding the applicant’s monitoring programs and to “[e]nsure that the intent of the ANILCA is met.” See, Greens Creek General Plans of Operation Appx 1. Integrated</li> </ol>	<p>Congress passed the Alaska National Interest Lands Conservation Act (ANILCA) establishing more than 100 million acres of federal land in Alaska as new or expanded conservation system units (CSUs). ANILCA requires federal land managers to balance the national interest in Alaska's scenic and wildlife resources with recognition of Alaska's fledgling economy and infrastructure, and its distinctive rural way of life. The United States Forest Service (USFS) manages two CSUs in the Tongass National forest including, the Admiralty Island National Monument where the Greens Creek Mine is located.</p> <p>ANILCA Section 503(c) notes that the Admiralty Island National Monument shall be managed by the Secretary of Agriculture as unit of the National Forest System. ANILCA Sections 503(f)(2)(a) and 503(i)(1)(B), and regulations promulgated by the United States Forest Service (USFS) at 36 CFR 228.80 to ensure mining activities are “compatible, to the maximum extent feasible” with Monument purposes and also require that mining activities to comply with environmental protection requirements. The regulations require the USFS to consider whether the Greens Creek Plan of Operations are “compatible, to the maximum extent feasible” with the Monument’s purposes “to protect objects of ecological, cultural, geological, historical, prehistorical, and scientific interest...including access.” Regulation 36 CFR 228.8(c) identifies the requirements for air and water quality and the disposal and treatment of solid waste, including:</p> <ol style="list-style-type: none"> <li>a. Air Quality. Operator shall comply with applicable Federal and State air quality standards, including the requirements of the Clean Air Act, as amended (43 C.S.C. 1857 et seq.);</li> <li>b. Water Quality. Operator shall comply with applicable Federal and State water quality standards, including regulations issued pursuant to the Federal Water Pollution Control Act, as amended (33 U.S.C. 1151 et seq.); and</li> <li>c. Solid Wastes. Operator shall comply with applicable Federal and State standards for the disposal and treatment of solid wastes. All garbage, refuse, or waste, shall either be removed from National Forest lands or disposed of or treated so as to minimize, so far as is practicable, its impact on the environment and the forest surface resources. All tailings, dumpage,</li> </ol>

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	<p>Monitoring Plan (IMP) Appx. 1.A A-4 at 5-1. See also, Objectives at 1-1.4.</p> <p>4) ANICLA 503(i)(1)(B) mandates that “that the use of the site to be leased will not cause irreparable harm to the Misty Fjords or the Admiralty Island National Monument.”<sup>5</sup> In the last Record of Decision for tailings expansion, the Forest Supervisor found that all National Forest System lands require the same level of protection. “[P]rovisions (ANILCA) apply on any National Forest System land within the Monument and land outside its boundary.” See, 12 ▪ 2013 Greens Creek Mine Tailings Disposal Facility Expansion Record of Decision at 12 (2013 ROD).</p> <p>5) Consistency with other federal laws requires the WMP comply with 36 CFR 228.80 (b)(1) and (2) “(b) Prior to approving a plan of operations, the authorized officer must consider: (1) The resources of ecological, cultural, geological, historical, prehistorical, and scientific interest likely to be affected by the proposed operations, including access; and (2) The potential adverse impacts on the identified resource values resulting from the proposed operations.” Protection of these values must be included as an objective of the WMP.</p> <p>6) Pre-existing rights were recognized in the Monument as long as it does not result in irreparable harm to Monument values. Therefore, this WMP must reflect that higher standard and extend effects and responsibility beyond project boundaries. The Agency must</p>	<p>deleterious materials, or substances and other waste produced by operations shall be deployed, arranged, and disposed of or treated so as to minimize adverse impact upon the environment and forest surface resources.</p> <p>The USFS is solely responsible for compliance with ANILCA and its implementing regulations as it applies to the Admiralty Island National Monument. The USFS complied with the requirements of the ANILCA and 36 CFR 228 when the USFS completed National Environmental Protection Act (NEPA) Environmental Impact Statement (EIS) for the Greens Creek Mine Tailing disposal Facility Expansion (USDA, 2013). The USFS reviewed and approved the facility plan of operations and authorized the expansion of the tailings facility. Components of the Greens Creek Plan of Operations are adopted by reference in this permit and the permit was developed in cooperation with the USFS who was provided the opportunity to review the permit for compliance with USFS regulatory requirements. Therefore, the requirements of ANILCA and its implementing regulations were considered and met by the USFS and these requirements do not extend to State permit authorities.</p>

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	<p>require the monitoring data necessary to assure compliance with ANILCA in the WMP. As currently written, the dWMP is not compliant.</p> <p>7) There is no information as to the precision and accuracy of monitoring equipment. See, General Plan of Operations Appendix 1 Integrated Monitoring Plan Appendix 1.A (IMP): Quality Assurance Project Plan (QAPP). “Though crude and non-specific this methodology is useful in the study of long-term trends.” See, IMP at 5-1. This is not compliant with the authorizing officer’s duty to assure potential adverse impacts to Monument values resulting from the TDF are fully considered. See, 36 CFR 228.80(b)(2). The State of Alaska must require that the dust monitoring program be made mandatory in a final WMP and integrated into the QAPP with the same data quality objectives as other monitoring programs described in the QAPP at pages 23-248 and elsewhere. See, 40 CFR §239.7 (c) (1-3).9 Dust monitoring equipment must be ASTM compliant and of known (measured and documented) accuracy and precision.</p> <p>In contrast, the State of Alaska requires ASTM compliant dust monitoring at the Red Dog Mine. See, 2.5.1 Fugitive Dust, Teck Alaska, Inc. Red Dog Mine Permit 2016DB0002 at 13.10 Not requiring the same level of monitoring in light of the additional requirements of ANICLA at Greens Creek is arbitrary and capricious.</p> <p>8) The WMP permit must include required biomonitoring of plant and animal tissues on the</p>	

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	<p>public lands to assure Monument values are not being harmed. Data quality objectives for biomonitoring must be included in the QAPP.</p> <p>9) The current dust monitoring is incapable of measuring the extent or magnitude of the spreading contamination from the TDF and roads. It is also incapable of determining if the applicant's IMP and the State of Alaska's WMP are complying with the conditions of the ANILCA and by extension, the adequacy of the Reclamation Plan and financial assurances.</p> <p>10) All evaluations and monitoring must be extended into the Monument to assure compliance with ANILCA.</p>	
15	<p>The 2009 Environmental Audit of the Greens Creek Mine by SRK Consulting recommended an assessment of potential contaminant uptake by vegetation and, if warranted "an assessment of the ecological risk (if any) posed by the observed concentrations of the contaminants of potential concern in the dust excursions from the facility. Id. at section 4.2.1.8 at p.41.</p>	<p>The monitoring requirements in the permit and plans, which are adopted by reference, are designed and are effective at tracking operational performance and ensuring compliance with specific permit conditions. No changes were made in response to this comment.</p>

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16	<p>SEACC requests that the final WMP include the requirement for a rigorous dust monitoring program that will measure the scope, extent and level of harm the fugitive dust may be having on the values protected within the Admiralty Island National Monument.</p> <p>The 2009 Environmental Audit recommended development of “a detailed air quality monitoring plan to quantify the extent and concentration of potential contaminant resulting from dust excursions from the tailings pile.” SRK further recommended that Hecla provide the results of a report on its air quality monitoring program that assesses “the potential short- and long-term impacts to both the terrestrial and aquatic ecosystem components in the area potentially impacted by the dust excursions.”</p> <p>Basic and rugged dust monitors with known accuracy and precision are commercially available. Their use must be required. To measure the actual scope of impacts requires a greater number of dust monitoring stations deployed outside of the project foot print capable of defining the furthest reaches of the fugitive dust.</p> <p>Dust monitoring equipment should be sited in Pile Driver Cove, the Greens Creek Delta and at Site 9 on Tributary Creek. Additional monitors are required to measure road dust and provide for adequate baseline levels of dust not affected by the mines activities. The dust monitoring results must be validated by comparison with a standard model. There is no compelling reason the effects of fugitive dust should be assumed to explain exceedance of</p>	<p>Permit section 1.2.1.2 requires that the permittee adhere to the conditions of <i>Hecla Greens Creek GPO Appendix 3 Tailings Disposal Facility Management Plan April 2019 (tailings facility SOPs)</i>. An objective of the plan is to “minimize fugitive dust impacts from the Tailings Disposal Facility (TDF) operations to surrounding land and wetland areas.” According to the plan, TDF dust must be controlled through the following:</p> <ul style="list-style-type: none"> <li>• Monitor fugitive dust from tailings facility, where possible.</li> <li>• Install wind breaks such as fencing and/or other appropriate mechanical controls on the crest of the tailings pile to reduce wind speed and dust dispersal through this area.</li> <li>• Limit snow removal to only active placement areas.</li> <li>• Cover interim slopes with rock or interim cover materials, if available.</li> <li>• Hydroseed outer slopes, where appropriate.</li> <li>• Use dust suppression aids where approve/appropriate.</li> <li>• Maintain roads properly.</li> </ul> <p>Additionally, Permit Section 2.3.1.8 requires fugitive dust emissions monitoring as specified in the <i>Hecla Greens Creek GPO Appendix 1 Integrated Monitoring Plan November 2019 (IMP)</i>.</p> <p>With respect to the comments on the dust monitoring equipment, locations and objectives, the department asserts that the dust monitoring conditions of <i>Hecla Greens Creek GPO Appendix 3 Tailings Disposal Facility Management Plan April 2019</i> is appropriate for the stated objectives.</p>

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	<p>lead standards in the fresh and marine water resources while not directly measured.</p> <p>All of the fresh water monitoring sites are well below the threshold levels for lead except, as noted above, Site 9 on Tributary Creek. The explanation that increasing lead levels in Hawk Inlet is due to natural weathering of local mineralized material, but does not show up in the creeks draining a large upland area seems implausible. The observed increase in lead levels on the land and waters is likely the result of the loss of lead fugitive dust from the TDF. Placement of standard dust monitoring equipment at Site 9, the Greens Creek Delta and any identified background or 'natural' station must be required in the final WMP.</p>	
17	<p>Inexplicably, the basis of the cost estimate for closure is limited to only 100 years, the minimum expected period of active maintenance. The use of the minimum time without any accurate measurement of the scope or impact of fugitive dust emissions have had on Monument lands places an undue risk to the public. See, General Plan of Operations Appendix 14 Reclamation and Closure Plan at 1. Calculating financial assurances based on 100 years of maintenance is not a conservative estimate of costs and is inadequate. SEACC recommends that the cost estimated for closure and reclamation be based on 400 years of active maintenance.</p>	<p>The Financial Assurance is based on a 200-year cost model that is then adjusted annually to account for inflation based on the Anchorage CPI. A 400-year model would have a statistically insignificant effect on the final number. No change to the permit was made as a result of this comment.</p>

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18	Permit Section 1.1 Coverage. As noted above, the dWMP does not actually state to the public the amount of waste to be dumped on public lands under this authorization. SEACC used a conservative estimate one-half of the 650,000 tons generated annually (the rest disposed underground) and multiplied by the 5 years of permit coverage. This is in addition to the approximately 9.5 million tons currently dumped into the TDF. The public has a right to know the amount of waste covered under this permit. SEACC requests the language at 1.1 be revised to include this amount.	DEC is not required to monitor or report the tonnage of solid waste that is authorized for disposal under the WMP. The EPA administers the Toxic Release Inventory (TRI) Program which requires dischargers to report solid and liquid waste discharges under Section 313 of the Emergency Planning and Community Right-to-Know Act. No change to the permit was made as a result of this comment.
19	Permit Section 1.1.1.1 Pond(s) not pond. See 1.1.1.5	Permit Section 1.1.1.1 was corrected as suggested.
20	Permit Section 2.3 Monitoring. Add requirements and data quality objectives for fugitive dust monitoring that are standardized and capable of measuring the extent of the dust emissions. Add a section of plant and animal biomonitoring. All results should be validated by comparison with standard modelling.	The monitoring requirements and data quality objectives are contained <i>Hecla Greens Creek GPO Appendix 1 Integrated Monitoring Plan November 2019 (IMP)</i> which is adopted by reference in this permit. As an adopted reference, the monitoring and reporting described in the document are enforceable. No change to the permit was made as a result of this comment.
21	Permit Section 2.3.1.3 Water Chemistry. Add that analysis must be according to published standard methods and conducted by a certified laboratory.	Permit Section 2.3.2 requires HGCMC to develop their Quality Assurance Project Plan (QAPP) for all sampling required by this permit within 90 days of the effective date of the permit. The QAPP describes the laboratory certification and sampling methods and is contained in the <i>Hecla Greens Creek GPO Appendix 1 Integrated Monitoring Plan November 2019 (IMP)</i> . No change to the permit was made as a result of this comment.
22	Permit Section 2.3.1.7 Water. Add the fact that the water from the water treatment plant flows to a diffuser in Hawk Inlet. Dilution within the mixing zone is part of the authorized water treatment system.	Permit Section 2.3.1.7 concerns water flow and management for Ponds 7 and 10. Flows from the water treatment plant to the diffuser in Hawk Inlet is a permitted under APDES Permit AK0043206. Although the pond system is connected to the water treatment plant, the Department did not include a description of the APDES permit components to avoid confusion between appurtenances covered under the WMP versus the APDES Permit. No change to the permit was made as a result of this comment.

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23	Permit Section 2.3.1.8. Add monitoring of fugitive dust emissions as specified in the IMP and Section 2.3.2 of the QAPP.	<i>Hecla Greens Creek GPO Appendix 1 Integrated Monitoring Plan November 2019 (IMP)</i> is adopted by reference in this permit and contains the fugitive dust monitoring and QAPP development requirement. As an adopted reference, the monitoring and reporting described in the document are enforceable. No change to the permit was made as a result of this comment.
24	Permit Section 2.5.2 Statically significant increase determination. "When a statistically significant increase in a constituent concentration above the background water quality in any of the FWMP water sampling locations is discovered, the permittee shall comply with 18 AAC 60.820-860. Statistical significance shall be determined using one of the methods outlined in 18 AAC 60.830(h). No such method is described in the IMP or QAPP. Please chose one and correct.	The permit exercises Solid Waste Regulations 18 AAC 60.820 through 860 that establishes statistically derived limits that trigger reporting requirement if exceeded. No change to the permit was made as a result of this comment.
25	Permit Section 2.8. Third party environmental audit should cover all aspects of the WMP including the environmental impacts of the project and compliance with state and federal regulations. An audit should also address the findings of any previous audit and whether the recommendations have been implemented.	The audit requirement in Permit Section 2.8 is not required by statute or regulation. Therefore, any assertion that the Department must implement the audit in a specific manner is unfounded. No change to the permit was made as a result of this comment.
26	Permit Section 3.8 Other legal obligations-add ANILCA.	See the response to Comment Response #14.
27	Permit Section 4.1 Monitoring Objectives. Add a robust, defensible fugitive dust monitoring program. Include the 'no-harm' standard of ANILCA in the data quality objectives.	See Comment Response #14 and #23.
28	Permit Section 2.11 Program audits needs to be an environmental audit and not just paperwork audits	See response to Comment Response #25.
29	Fugitive Dust Monitoring. The control of fugitive dust from the tailings facility is a required mitigation measure in the 2013 Final Environmental Impact Statement and	See Comment Response #23

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	Record of Decision for the Tailings Disposal Facility expansion. Monitoring must be required.	
30	ASTM D1379 should be ASTM D1739. Standard Test Method for Collection of Fugitive Dust must either promulgated against standard equipment or abandoned to commercially available compliant equipment. The dust monitoring program must account for road contributions to dust and spatial extent. Spatial distribution as used in this reference must include a downwind limit. SEACC suggests the sentence reads “5.1 Atmospheric Depositional Containers Atmospheric depositional container (ADC) monitoring is used to determine long term temporal changes, direction, extent of the fugitive dust load.”	As a result of this comment ASTM D1379 is replaced with ASTM D1739. This change of ASTM number is to be made in the document named “GPO Appendix 01 Draft 20190829.pdf/Section 5.1”. Roads are sprayed with water during dry season and produce little or no dust during rainy and snowy season. No change to the permit was made as a result of this comment.
31	Vegetation Studies must be developed and implemented. Aspects addressed should include: <ul style="list-style-type: none"> <li>· an assessment of stressed vegetation (distribution and characterization)</li> <li>· evaluation of effects</li> <li>· research on the cause of effects</li> <li>· identification of metals uptake process</li> <li>· predication of future effects</li> </ul>	Biological monitoring is done under <i>Hecla Greens Creek GPO Appendix 1 Integrated Monitoring Plan November 2019 (IMP)</i> section 5 for the abundance of juvenile fish and periphyton biomass estimated by chlorophyll-a concentrations. Biological monitoring in the GPO is performed by the Alaska Department of Fish and Game. Also see Comment Response #15. No change to the permit was made as a result of this comment.
32	2.3.1.3.3—Periphyton biomass Though ADF&G recommended data comparisons among years at each site be discontinued, we recommend statistical data comparisons between the reference (Site 63) and treatment (Site 54) sites remain a requirement. Therefore, we recommend the following: “Periphyton biomass, estimated by chlorophyll-a concentrations. Statistical data comparisons between control and treatment sites are required each year.”	As a result of this comment, Permit section 2.3.1.3.3 was modified to state  2.3.1.3.3: Periphyton biomass, estimated by chlorophyll-a concentrations. Statistical data comparisons between control and treatment sites are required each year; and

**REFERENCES**

USDA, 2013. Greens Creek Mine Tailing Disposal Facility Expansion, Final Environmental Impact Statement and Record of Decision, R10-MB-744c. September 2013. Volumes I & II.