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November 23, 2020
Sent Via Email

Re: Greens Creek Tailings Expansion Scoping

On October 8, 2020, the Forest Service issued a Notice of Intent to prepare a supplement to the 2013 Record of Decision (ROD) to allow another short-term expansion of the Greens Creek Mine Tailings Dump. This action is in response to a change in the mine's approved General Plan of Operation (GPO) by Hecla Greens Creek Mining Company (HGCMC) to account for continued mining after 2031. The GPO changes proposed by HGCMC include more than doubling the amount of added material from 2.1 million yd³ in the 2013 ROD to 4.6 million yd³ in this proposal. Incongruously, the life of mine is only increased 50%. The Greens Creek Mine is located within the Tongass National Forest and the Admiralty Island National Monument.

The Southeast Alaska Conservation (SEACC) is a grass-roots, member based conservation organization that has been active in southeast Alaska for over 50 years. Our members include those who work in the commercial fishing industry, various tourism and guiding business, small timber operators and people from all walks of life in southeast Alaska.

Overview

There are many outstanding issues left unresolved from the last ROD in 2013. These include a reconciliation between the right to lease public lands for the purposes of mining and milling and the requirements to protect the subsistence fisheries and not create irreparable harm to the monument values under the Alaska National Interest Lands Conservation Act (ANILCA). In the intervening time, the Forest Service has made no progress toward defining the monument values to be protected in any qualitative or quantitative way. Additionally, the Forest Service has failed to require the necessary measurements of fugitive dust actively spreading throughout the monument and marine environment or the fate and transport of these contaminants throughout the food chain that may indicate harm. Furthermore, the Forest Service has failed in its responsibility to effectively oversee the State of Alaska agencies tasked with reducing and monitoring the impacts of the mine and continues to ignore large amounts of pre-mining baseline data. All of these issues must be resolved before any informed decision can be made on the current proposal.

Scoping Must Identify Potential Harm to Monument Values and Eliminate any Alternative that Would Cause Harm

Section 504(f) of ANILCA states that the Secretary may issue a lease to conduct mining activities in Admiralty Island National Monument only if the Secretary determines that the use of the site “will not cause irreparable harm to the monument.” The monument was established for the purpose of protecting objects of ecological, cultural, geological, historical, prehistorical and scientific interest, in particular the fish and wildlife and supporting habitats. Harm to these values is harm to the monument under section 504 of ANILCA. The proclamation establishing the monument states, “[p]rotection of the entire island . . . is necessary to *preserve intact* the unique scientific and historic objects and sites located there.” Presidential Proclamation 4611 (Dec. 1, 1978) (emphasis added).

“Irreparable harm” is not explicitly defined by statute, rather, it has been defined by the courts as an injury that cannot be adequately measured or compensated by money. Black’s Law Dictionary (9th ed. 2009) defines irreparable harm as “[h]arm or injury for which no amount of monetary compensation can adequately and sufficiently make the injured party truly whole or reverse the injury.” The Supreme Court has also found that “[e]nvironmental injury, by its nature, can seldom be adequately remedied by money damages and is often permanent or at least of long duration, i.e., irreparable.” See *Amoco Prod. Co. v. Vill. of Gambell*, 480 U.S. 531, 545 (1987).

When President Jimmy Carter designated Admiralty Island as a National Monument in 1978, he described its unique island ecology as “an outdoor living laboratory for the study of the bald eagle and Alaska brown bear.”¹ The Proclamation recognized the importance of the waters to maintain this unique ecosystem and included “All lands, including submerged lands, and all waters within the boundaries of this monument.”²

Recognizing this duty, the Forest Service and other federal and state agencies conducted extensive studies documenting the baseline population and diversity of marine species in Hawk Inlet, bald eagles, and brown bears prior to authorizing mining.³ New information collected by Friends of Admiralty Island (FOAI) in 2015 and 2016 raises significant questions about whether mining operations at the Greens Creek Mine “are compatible, to the maximum extent feasible,” with preventing or minimizing potential adverse impacts to monument values. See ANILCA,

¹ Proclamation 4611

² Id.

³ See Schoen and Beier, *Brown Bear Habitat Preferences and Brown Bear Logging and Mining Relationships in Southeast Alaska*, Study 4.17 (June 1990) and Final Results of the 1981 Field Program for the Greens Creek Project, Part I-Hawk Inlet and Young Bay. Martin Marietta Environmental Center 1981, Attached Record D pages 5 to 14. See also Bald Eagle, Blue Mussel and Sediment Contaminant Concentrations from Hawk Inlet, Admiralty Island, Alaska. October. 2001 US Fish and Wildlife Service

Pub. L. No. 96-487, § 503(f)(2)(A), 94 Stat. 2371, 2400 (Dec. 2, 1980); 36 C.F.R. 228.80(c)(2)(i).

ANILCA's requirement to protect monument values, including environmental values, underscores the importance of a systematic review of all significant direct and indirect environmental impacts associated with mine activity and further expansion.

The Forest Service must also show that uses of leased monument lands for tailings storage and treatment “will not cause irreparable harm to . . . Admiralty Island National Monument.”⁴ Citizen-funded sampling conducted in Hawk Inlet in 2015 and 2016 indicates a substantial increase in concentrations of 11 metals evaluated within Hawk Inlet sediments. Efforts by Friends of Admiralty Island (FOAI) and other concerned citizens produced three studies: one on sediment quality, one on tissue metal loading in aquatic species collected as subsistence foods, and one on the levels of metals in the tissues of a harbor seal. *See* Attached Record A1-3. The average increase for all eleven metals in sediments was 73 times the maximum pre-mining baseline levels, and 183 times the mean, inlet-wide baseline. The studies showed that Hawk Inlet metal concentration maximum measurements exceed every ADEC-referenced NOAA trace metal benchmark for protecting marine life. These studies indicate the mine’s operations may already be causing harm. They also demonstrate the feasibility of repeating the pre-mining intertidal baseline studies as well as the critical need to do so.

Importantly, the absence of any enforceable sediment standards in Alaska, and the inability of regulators to utilize the extensive data set collected under the Hawk Inlet Monitoring Program to measure impacts to the protected designated uses of Hawk Inlet, makes the agency’s practice of deferring to the Alaska Department of Environmental Conservation (ADEC) on compliance with Clean Water Act requirements misplaced.⁵ Since at least 2004, ADEC has regularly concluded, “[d]ata or information [for Hawk Inlet] is insufficient to determine whether the WQS [water quality standards] for any designated uses are attained.”⁶ This includes WQS specifically set to protect aquatic life and habitat. This conclusion is in contrast to the monitoring reports produced by HGCMC concluding that uses are protected.

NEPA requires an EIS identify the methodologies used, along with the scientific and other sources relied on for conclusions in an EIS.⁷ The statute also requires the agency to “insure the professional integrity, including scientific integrity, of the discussions and analyses.”⁸ Yet an audit conducted by SRK Consulting in 2009 found that none the reports required under the

⁴ ANILCA Section 504(f)

⁵ *See* 2013 ROD at 31.

⁶ As it did in 2003, 2004, 2006, 2008, and 2010, Alaska Final 2012 Integrated Water Quality Monitoring and Assessment Report, December 23, 2013, listed Hawk Inlet as a Category 3 water. *See* Final 2012 Report, Appendix A at 47 and 50 (available at <http://dec.alaska.gov/water/wqsar/waterbody/2012integratedreport.htm>).

⁷ *Earth Island Inst. v. U.S. Forest Serv.*, 351 F.3d 1291, 1301 (9th Cir. 2003).

⁸ *Native Ecosystems Council v. U.S. Forest Serv.*, 418 F.3d 953, 964 (9th Cir. 2005).

permits issued by the State of Alaska had been reviewed or commented on. “There have been no documented comments or interpretations of the results from EPA, ADEC, and the USFS (the reviewing agencies) regarding data presented in the HGCMC annual reports.” Parenthetical in original. *See* Attached Record B at page 55.

The Forest Service cannot continue to avoid independent review of the methods employed by HGCMC and ADEC and the effects of disregarding a large portion of the baseline pre-mining data. This review must be conducted prior to any selection of alternatives in the SEIS. The Forest Service also must address the effects of the lack of clear identification of monument values and how those values are being protected. An agency violates NEPA if it fails to discuss relevant shortcomings regarding the methodology relied on in its analysis and conclusions.⁹

Subsistence Use Must Take Priority over Mineral Extraction

The new data provided by FOAI and the community of Angoon’s reaction to it combined with the increased utilization of local foods due to Covid-19 underscore the need for the Forest Service to conduct new subsistence hearings for this proposed action as part of the scoping process. Title VIII of ANILCA provides for the protection of customary and traditional uses by rural Alaska residents of wild renewable resources on lands controlled by the US Forest Service. In Alaska, all land management projects that require an EIS also require an ANILCA 810 analysis and hearings to evaluate the effect of the project on subsistence uses.¹⁰ All Federal subsistence regulations regarding the take of fish and wildlife contain a clear subsistence priority over other uses as required under ANILCA Title VIII including mineral extraction.¹¹

The agency’s reliance on the subsistence hearings conducted in preparation of the 2013 EIS is unfounded. In the lead up to the 2013 EIS, subsistence hearings were conducted for the Native communities of Angoon, Hoonah and Tenakee Springs and disregarded the community of Native peoples residing in Juneau, who historically and currently are the largest group of users of subsistence resources in Hawk Inlet. Juneau stakeholders include the Douglas Indian Association, a federally recognized Tribe. The foods collected in Hawk Inlet are critical for maintaining cultural connections and education and are healthier than foods bought commercially in stores. The recent Covid-19 pandemic has increased the reliance on these food

⁹ *Native Ecosystems Council*, 418 F.3d at 964.

¹⁰ 16 U.S.C. § 3120(b); *see also* Section 5(e) of Pub. L. No. 104-123, 110 Stat. 880 that directs the Forest Service to “administer the rights and obligations of the Federal Government under the agreement, including monitoring of the Government’s interests relating to extralateral rights, collecting royalties, and conducting audits.”

¹¹ 16 U.S.C. § 3112(2). This is another example of the differing standards applied by the State, which illustrates why State regulatory actions cannot be said to fulfill the Forests Service’s duties.

resources as communities seek to isolate to protect themselves and as imported food sources become less available.

Despite much of the testimony collected during the subsistence hearings in 2012 and a Resolution passed by the Angoon Community Association (ACA), a federally recognized Indian Tribe, specifically opposing the mine, the Forest Service concluded that “none of the action alternatives, including the Selected Alternative, will result in a significant possibility of a significant restriction on access to, or use of, any subsistence resources.” *See* 2013 ROD at page 30. Characterizing the “permanent loss” of over a thousand feet of fish habitat under all action alternatives, and about 4,000 feet or 50 percent of the fish habitat in Tributary Creek under HGCMC’s preferred alternative as “negligible” is inaccurate and inconsistent with the high level of subsistence resource and fish habitat protection mandated by ANILCA. This is also an example of unfettered agency discretion caused by a lack of any specific accounting or definition of the monument values to be protected.

In sum, the subsistence hearings and ANILCA Section 810 analysis conducted in preparation of the 2013 EIS were flawed even at the time. They are especially inadequate to support the current decision process because of significant changed circumstances and new information arising in the intervening eight years, including the Covid-19 pandemic and the new data from FOAI. Moreover, ANILCA requires the agency to conduct new subsistence hearings regardless of whether circumstances have changed significantly. **We urge the Forest Service to conduct new subsistence hearings in the communities of Angoon, Hoonah, Tenakee Springs and Juneau as part of this scoping process. We further recommend that the Forest Service provide these communities with all relevant information including a review of the monitoring programs implemented by State of Alaska prior to the hearings.**

Human Health Assessment on Traditional Food Collected by Angoon Tribal Citizens.

The community of Angoon has utilized the foods in Hawk Inlet throughout the history of the mine. The FOAI data on subsistence foods in Hawk Inlet from 2015 show that several subsistence foods such as shrimp, crab, butter clams, cockles and blue mussels from Hawk Inlet were two to five times higher in concentrations of arsenic, chromium, copper, lead, nickel and selenium in 2015 (time of study) than levels reported as 1978, 1981 and 1984-1989 baseline levels measured prior to full operation of the mine in the Hawk Inlet watershed. *See* Attached Record at A-1.

FOAI also opportunistically collected samples of seal tissues harvested by hunters from Angoon. The results of this analysis revealed mercury levels in the liver tissue higher than any other seal ever tested in the state of Alaska and possibly the world. *See* Attached Record at A-C. This prompted ACA to issue a bulletin to its citizens to avoid collecting foods anywhere near Hawk Inlet from a point north of Parker Point. *See* Attached Record at F.

These results also prompted ACA to request a Human Health Assessment be conducted by the Alaska Department of Health and Social Services (DHSS) to measure the risk of consuming foods collected in Hawk Inlet. DHSS responded by conducting an initial assessment based on available data. The result, though finding the foods generally safe under some consumption guidelines, also found that “analysis of fish and shellfish tissue have shown some elevated metals concentrations (above EPA 2000 and 2001 recreational and subsistence cadmium and mercury recommended values).” *See* Attached Record at G. The DHSS report was unable to discern the source of this contamination and recommended additional biomonitoring for these species near the wastewater outfall. To our knowledge this recommendation has not been implemented. **We recommend a full Human Health Assessment for Angoon including additional biomonitoring in Hawk Inlet.**

More recently, FOAI has conducted additional sampling in Hawk Inlet utilizing clam shells as indicators of water quality at the time the animals were living. Shells were collected representing a time span prior to mining activities up to and including current conditions (living specimens). The shells were analyzed for total metals and the stable isotopes of lead. Representative shells were radiometrically dated. Preliminary results indicate a possible increase in metals in the living shells versus the pre-mining specimens and a possible correlation between the lead present in the living samples and the tailings in the disposal facility that is not apparent in pre-mining specimens. More samples will need to be collected and analyzed to verify these trends and correlations.

Need to Repeat of the 1979-81 Baseline Studies

The availability of subsistence foods is as important as the quality of those foods. In 2016, the Alaska Department of Fish and Game conducted a clam investigation in the intertidal area of Hawk Inlet. *See* Attached Record at H. The study found that “no clams were observed at the Greens Creek delta study site.” This is in stark contrast to the results of the 1981 Field Program conducted pre-mining near the same locations that documented populations estimated to be in the hundreds of individuals for various species of clams on the Greens Creek Delta. *See* Attached Record at D. This startling result highlights the need to repeat the study reported in the 1981 Field Program in order to verify that the availability of these subsistence resources is being maintained and, if not, whether the mine is contributing to the change. The availability of subsistence species is currently not being measured or a consideration under the State of Alaska permits.

SEACC has asked for a repeat of this study since it became available in 2012. Every Annual Hawk Inlet Monitoring Report from 2006 to 2014 emphasized the importance of repeating the study. “The current status of the health of marine and aquatic ecosystems can be viewed based on the number of types of species present in an area (species diversity, or “biodiversity”), the

number of individuals from each species in an area (species abundance), and quality of the environment (habitat integrity relative to pristine conditions).” See Hawk Inlet Monitoring Program 2012 Annual Report (and every previous one) at 26.¹² The monitoring reports go on to mischaracterize the available evidence by falsely stating that “For the marine environment, there are no data available to numerically compare diversity or abundance of organisms between pre-mining and post-mining years.” *Id.* This statement was lifted from the conclusion of a 2003 study. The original quote read; “For the marine environment, there are no data available to numerically compare *current* diversity or abundance of organisms between pre-mining and post-mining years, nor with a comparable natural control site.” Emphasis added.¹³ In response to SEACC’s requests, HGCMC simply changed the conclusions of subsequent reports to avoid mentioning the existing population and diversity baseline data to read “Water quality, sediments, and invertebrate tissue monitoring began in Hawk Inlet prior to production [note, not prior to exploration, construction or development] to establish a baseline against which future monitoring (during production) can be evaluated, and to monitor for natural changes.” Hawk Inlet 2015 Annual Monitoring report at page 23.¹⁴ Predictably, based on this new goal “to monitor for natural changes,” every observed increase in concentration above the baseline has been declared a natural occurrence rather than an effect of the mining—without adequate support for that conclusion. The effect of this change has not been reviewed nor commented on by the Forest Service.

The reasons given not to repeat this study do not withstand scrutiny. One reason given was that the methodology of the 1981 study was not available, yet standard methodologies for species diversity and population studies have not substantially changed since the original study was conducted and can therefore be employed for comparable studies today.¹⁵ Another reason given was that the exact sample sites cannot be located. Yet, several current monitoring sites under the APDES program are at the same locations as the 1981 study and furthermore studies of this nature rely on choosing random representative sub-plots, not specific pre-determined sample locations. Lastly, the excuse that the existence of the cannery had some effect on the species diversity and populations during the original study that would make a modern comparison uninformative is unfounded, as no evidence of this perceived effect has been given. In contrast, the Oceanus 2003 report found that “[t]he abundance of seafloor organisms both sub-tidally and intertidal were considered very high. Although cannery impacts were not explicitly analyzed, Holland et al (1981) concluded that species composition and abundance “are typical in species

¹² Available at: <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/gc2012hawk.pdf>

¹³ See Review of Essential Fish Habitat in Hawk Inlet Subsequent to Mining Operations (Oceanus 2003) at page 56, Attached Record at I.

¹⁴ Available at: <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/gc2015hawk.pdf>

¹⁵ See Procedures for Quantitative Ecological Assessments in Intertidal Environments, EPA Sept. 1978. Available at: <https://nepis.epa.gov/Exe/ZyPDF.cgi/9101MI8C.PDF?Dockey=9101MI8C.PDF>

composition and relative abundance to hard-bottom habitats of the region (Holland *et al* 1981)”¹⁶ Furthermore, researchers in the 1981 study found the area similar to other “pristine” and “unpolluted” marine areas of the Pacific Northwest coast. No effects of the cannery were noted. One may not simply attribute an effect with no evidence. There is no reason not to conduct a contemporary species population and diversity assessment in Hawk Inlet. To continue to permit expansion of the mine without repeating the baseline studies is irresponsible and falls short of the agency’s duty to protect the monument and all who depend on it. *See also* letter Archibald to Kanouse (Alaska Dept. of Fish and Game Habitat Division), February 4, 2014. Attached Record at J.

The 1981 study was conducted to assure that pre-project data would be available for comparison during project operation and reclamation.¹⁷ Such a reassessment is critical for the agency to reasonably determine whether continued mine operations are compatible, to the maximum feasible, with the protection of the [monument values]” and “utiliz[e] the best available technology for preventing or minimizing potential adverse impacts.” *See* 36 C.F.R. § 228.80(c)(1), (c)(2)(i). **We urge the Forest Service to repeat the 1981 Field Study to determine if and how the mine is impacting the monument.**

The new data from FOAI and the lack of rigorous use of pre-mining baseline data have left communities no choice but to avoid subsistence activities near Hawk Inlet out of precaution. NEPA requires the Forest Service to address in an EIS “responsible opposing viewpoints”.¹⁸ This applies to both the FOAI data but also the views of the affected communities. NEPA does not require that a final [EIS] prioritize the concern of scientific experts” because “practical concerns of individual landholders or hikers may be just as important—and just as trenchant—as the formal submissions of academic experts.”¹⁹ **We recommend the data submitted by FOAI and the testimony given by the communities be included in the SEIS.**

In addition, Executive Order 12898 on Environmental Justice directs federal agencies to address whether a disproportionately high and adverse human health or environmental impact on minority populations, low income populations, or Indian tribes is likely to result from the proposed action and any alternatives. **We recommend that the Forest Service work with DHSS to conduct a full Human Health Assessment of the subsistence foods utilized in Hawk Inlet and direct other state agencies to collect additional data necessary to accomplish and the fulfill the goal of EO 12898 and include this information in the analysis of all Alternatives studied under the SEIS. Furthermore, we recommend a study be conducted on the availability of various types of traditional food species and a comparison**

¹⁶ *See* Supra note 13 at page 15.

¹⁷ *Id.*

¹⁸ *State of Cal. v. Block*, 690 F.2d 753, 770 (9th Cir. 1982).

¹⁹ *Sierra Forest Legacy v. Sherman*, 646 F.3d 1161, 1183 (9th Cir. 2011).

with the pre-mining data recorded in the 1981 Field Program to discern if there has been a reduction in the availability of traditional foods in Hawk Inlet.

The Supplemental EIS Must Fully Analyze New Data and Adjusted Life-of-Mine

Scientific analyses and information from the communities are at the core of the National Environmental Policy Act's (NEPA) rational decision-making model for federal agencies and in the consideration of a project's likely environmental consequences. While the Council on Environmental Quality (CEQ) regulations provide that an environmental impact statement's alternatives section "is the heart" of the EIS,²⁰ "[a]ccurate scientific analysis, expert agency comments, and public scrutiny" are also essential to implementing NEPA.²¹ While NEPA does not require a particular substantive outcome, it does require agencies to take a 'hard look' at how the choices being considered affect the environment, and then to place the data and conclusions before the public.²²

Consideration of Information Quality Lacking in the Last Decision

NEPA requires (1) A statement describing any information that is incomplete or unavailable; (2) a statement of the relevance of the incomplete or unavailable information; (3) a summary of relevant "existing credible scientific evidence;" and (4) the agency's evaluation of impacts based on "theoretical approaches or research methods generally accepted in the scientific community."²³ The 2013 FEIS and ROD lack this analysis despite the significant information gaps identified and the lack of clarity of how various laws and regulations are applied. Given the new data collected since 2013 by both FOAI and ADF&G and the many unfulfilled recommendations noted earlier, it is essential that the SEIS for this expansion fully address missing information. One of NEPA's primary purposes is to ensure that agencies, to the greatest extent possible, have access to and include in environmental analyses, all available information necessary to assess impacts and make a reasoned choice between alternatives.²⁴ This includes information on incomplete or unavailable information (such as data variable, high degree of uncertainty or subject to error) and the effect of the differing missions of participating agencies.

NEPA requires, when there is incomplete or unavailable information, the USFS to make it clear that such information is lacking. This includes a hard look at all the assumptions, variables in modelling, conflicting jurisdictional missions and the operator's compliance history. **We**

²⁰ *Ilio'ulaokalani Coal. v. Rumsfeld*, 464 F.3d 1083, 1095 (9th Cir. 2006).

²¹ *WildEarth Guardians v. Provencio*, 923 F.3d 655, 668 (9th Cir. 2019).

²² *W. Watersheds Project v. Abbey*, 719 F.3d 1035, 1047 (9th Cir. 2013); *see also Sierra Club v. Marita*, 46 F.3d 606, 616 (7th Cir. 1995) (citing *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989)).

²³ *Native Vill. of Point Hope v. Jewell*, 740 F.3d 489, 496 (9th Cir. 2014).

²⁴ *Conner v. Burford*, 848 F.2d 1441, 1451 (9th Cir. 1988).

strongly recommend the Forest Service begin the many assessments necessary to fully inform the decision prior to conducting a supplemental EIS.

Nature and Content of Waste Material Stored on Public Lands Must Be Disclosed.

The SEIS must disclose to the public the actual amount of tailings and waste rock stored on public lands. Estimates produced by SEACC indicate that 18,250,000 tons of tailings and waste rock are currently dumped on public lands. If this third expansion is authorized, it would allow an additional 9,936,000 tons, for a total of 28,186,000 tons when the lease reverts to the public if no further expansions are authorized. The SEIS must consider the foreseeable effects of this amount of waste material permanently left on public land under differing scenarios of cover and water treatment performance over the span of hundreds of years.

The Forest Service also must disclose the chemical nature of this material. Information presented in the Annual reports and in the 2013 FIS indicated that the tailings are actively escaping containment and spreading throughout the monument and surrounding wetlands via fugitive dust. This loss of containment is likely to increase if the tailings pile is expanded to the north and upward and will continue until the final reclamation and engineered cap is in place. The information on the chemical nature of this material is relevant to assure compliance with the ANILCA Section 503(i)(1) standard that the leased land for additional storage of tailings will not cause irreparable harm to the Admiralty Island National Monument. **We recommend the USFS include in the SEIS complete information about the volume, chemical nature, and the extent it has spread into the monument for this waste and carry it forward in the analysis under each proposed alternative.**

Also relevant to the analysis of any alternative is the disclosure of all compliance histories, exceedances and violations of the requirements in place under all state and federal permits as well as any gaps in the data. This performance record must be incorporated into any risk analysis for future actions. **We request the USFS disclose all non-compliance histories and steps taken to remedy the compliance issues in the SEIS.**

USFS Must Reconcile the Qualified Right to Lease Public Lands for the Purposes of Mining and the Standards to Protect Monument Values Under ANILCA

In 2013, after HGCMC proposed to expand its existing tailing dump on lands within the Admiralty Island National Monument, the Responsible Official adopted a “[relatively short-term solution] to ensure that operations can continue until the necessary additional information can be gathered, analyzed, and reviewed by all stakeholders . . .” *See* 2013 Record of Decision (2013

ROD) at page 14. Accordingly, the Responsible Official provided that “the Tongass National Forest will work with other appropriate parties . . . to clarify how to apply the complex set of legal requirements . . . specific to Admiralty Island National Monument” and obtain from HGCMC “feasibility analyses regarding the construction and use of alternative tailings disposal facilities.” *Id.* 14-15.

Although the Forest Service proposed a regional supplement to Forest Service Manual 2800 in 2014 for this purpose, the Alaska Regional Forester subsequently concluded that additional policy direction was unnecessary. *See* Letter from Regional Forester Pendleton to Lindekugel, SEACC (Dec. 15, 2014), *see* Attached Record at K. Since then, SEACC has heard nothing from the Tongass National Forest about any new information or analyses. The SEIS must clearly explain how its view of applicable legal requirements has changed, or if not, why the agency is proceeding now without having resolved the issues identified in the 2013 ROD. In the language of one early NEPA case, the agency must ensure in its EIS that stubborn problems are not “swept . . . under the rug”²⁵ SEACC seeks information on the status of any guidance developed on navigating the “complex set of legal requirements” identified. The Forest Service must explain how it will apply the legal framework in its analysis of alternatives. **We request the USFS provide an analysis of the legal standards that govern this decision in the SEIS.**

Information on Alternatives Considered but found to be Infeasible or Dropped from Further Analysis

HGCMC states that the current proposed action was advanced after analysis of other alternatives were considered but dropped. “Greens Creek General Manager Brian Erickson said Hecla leaders believe the plan maximizes the area available for tailings storage while minimizing newly disturbed areas in a formal statement. “This amendment *culminates years of careful planning* to develop a plan that minimizes impacts on Admiralty Island National Monument and the fish-bearing sections of (nearby) Tributary Creek, Erickson said.”²⁶ Emphasis added.

The SEIS must include, as required by agency regulations, the short- and long-term costs to HGCMC for implementing any of the action alternatives and proposed mitigation measures. It also must include an evaluation of the effect of these costs on the economic viability of the mining operations as required by agency regulations. *See* 36 C.F.R. § 228.80(c)(2)(ii).

The cost of the omitted plans or dropped alternatives is critical information for the public to make informed comments, since the agency’s regulations identify economic feasibility as a

²⁵ *County of Suffolk v. Sec’y of Interior*, 562 F.2d 1368, 1384-85 (2d Cir. 1977).

²⁶ Available at: <https://www.alaskajournal.com/2020-10-14/greens-creek-owner-files-request-reroute-road-tailings-expansion>.

factor in the decision. *See* 36 CFR 228.80(c)(2)(ii). The Greens Creek mine is one of the largest and lowest-cost silver mines in the world, “and is the cash generating engine of the Company [Hecla].”²⁷ The model relating to how economic feasibility is determined also must be included in the SEIS for the public to be able to make informed decisions. **We request the SEIS include information on all planning documents and feasibility analyses related to alternative tailings disposal and the cost to HGCMC to implement each alternative since issuance of the 2013 ROD.**

Scoping Must Include Analysis of Reasonably Foreseeable Future Actions Including an Extended Life-of-Mine Beyond This Authorization and Related Cumulative Impacts.

The Forest Service has a duty under NEPA to analyze relevant reasonably foreseeable future actions related to and stemming from the current action.²⁸ Specifically, NEPA requires agencies to consider both cumulative effects and cumulative actions. Cumulative effects are those “which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions.”²⁹ Cumulative actions are those “which when viewed with other proposed actions have cumulatively significant impacts.”³⁰

In 2010, the Forest Service filed a Notice of Intent to prepare an EIS upon request from HGCMC to expand the tailings pile by an additional 20 million tons of tailings and waste rock material. *See* F.R. /Vol. 75, No. 192 /October 5, 2010 /Notices at 61415. The stated Purpose and Need cited at the time:

“HGCMC is proposing a tailings expansion which will accommodate an estimated additional 20 million tons of tailings and waste rock material. This volume would allow capacity for ongoing operation and project reserves, plus provide volume for waste rock co-disposal and an expanded resource base as identified needs are proven with on-site exploration activities.”

The volume requested was to accommodate 30-50 years of continuous mining. This 30-50-year life-of-mine was the basis for all Alternatives analyzed in the 2013 EIS.

²⁷ *See* Hecla webpage at: <https://www.hecla-mining.com/greens-creek/>.

²⁸ *See* 40 C.F.R. § 1508.1(g) (defining “effects” and “impacts”); *id.* § 1502.1 (stating the primary purpose of an EIS is to ensure agencies consider the environmental impacts of their decisions).

²⁹ *Ctr. for Env'tl. Law & Policy v. U.S. Bureau of Reclamation*, 655 F.3d 1000, 1007 (9th Cir. 2011) (alterations and quotation marks omitted).

³⁰ *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 999 (9th Cir. 2004).

However, in the 2013 Record of Decision the Forest Supervisor declined to authorize HGCMC's preferred Alternative and instead authorized a short-term, 10-year life-of-mine to allow time to gather information described elsewhere in this letter. In the intervening 10 years HGCMC has continued to explore and expand known reserves every year. Given that HGCMC identified the need to accommodate 30-50 additional years of mining in 2011, the SEIS must analyze impacts of mining extending well beyond the 10-15-year life-of-mine described in the current application.

Another reason the SEIS should analyze the impacts of foreseeable future mining well beyond the next 10-15 years is the Congressionally-ratified Greens Creek Land Exchange Agreement negotiated between HGCMC's predecessor-in-interest, Kennecott Greens Creek Mining Company, and the Forest Service. Under the terms of that agreement, the duration of the land exchange is 99 years. There is no evidence in HGCMC's or their predecessor's history that indicates they intend or expect to close the mine before the agreement ends.

Indeed, the Purpose and Need for the current application cites the pre-existing rights including the 99-year lease agreement: "The project is needed to allow planned mineral production at the mine site to continue pursuant to applicable law and pre-existing rights beyond the year 2031, when current disposal capacity is expected to be exhausted." *See* Notice of Intent to Prepare a Supplemental Environmental Impact Statement filed: 10/8/2020 (emphasis added). HGCMC acknowledges in its 2020 Amendment to the General Plan of Operations North Extension Project that its operational needs for tailings disposal may extend beyond the remaining capacity in the existing TDF, even with the proposed expansion. Under these vague circumstances, the Forest Service must prepare an SEIS for the entire length of the 99-year lease as the only real limit to how long the mine can operate.³¹

In 2013, the Forest Supervisor was clear the about type of information necessary for the next decision. At the time the Forest Supervisor noted that "a short-term solution that avoids affecting the fish-bearing sections of Tributary Creek and also avoids a second tailings facility [wa]s unlikely to be available" for future expansions. He was aware at the time that enough reserves had been identified to allow mining another 30-50 years, and that a longer-term analysis was necessary:

"Because I am adopting an alternative that provides only a relatively short-term solution to the issues related to tailings disposal and protection of Admiralty Island National Monument, it is important to consider how best to prepare for the next decision that is

³¹ *See Cady v. Morton*, 527 F.2d 786, 795 (9th Cir. 1975).

likely to be needed several years from now. . . Therefore, it is essential that the Responsible not be in the position I am in today.” 2013 ROD at 15.

The Forest Supervisor intended the agency to spend the intervening time evaluating the complex set of legal requirements that are specific to Admiralty Island National Monument and Misty Fjords National Monument and working with other stakeholders to identify the information that must be incorporated into the feasibility analyses, in a timeframe that would enable the information to be included in any subsequent NEPA analysis.

NEPA requires the Forest Service to take a comprehensive look at how the proposed project will impact the local environment, water levels and quality, wildlife and their habitat, and the well-being of the surrounding community. The cumulative effect of the reasonably foreseeable 99-year mine life was not addressed in the 2013 EIS or ROD. This SEIS should evaluate the entire probable life of the mine, not just a piece at a time.

The Forest Service cannot continue to rely on short-term decisions as being an effective land management strategy. “Natural resource management is ultimately about making tough decisions in the face of uncertainty, complexity, and potential conflict. Often the outcomes extend beyond the lifetime of the decision process participants, requiring a long-term perspective when making these decisions.”³² The Forest Service may not continue to put off these “tough decisions.”

The Forest Service must analyze a life-of-mine based on the length of the lease agreement as a reasonably foreseeable event, and consider whether this life-of-mine is compatible with the protection of the values protected in the Monument.

Fugitive Dust Impact to Monument Lands Must Be Fully Considered and Measured

As part of this SEIS scoping process, we request the Forest Service report on all investigations regarding the source and extent of fugitive dust-related metals contaminants, an evaluation of the data including gaps, as well as the best available technology for preventing or minimizing and monitoring impacts from fugitive dust emissions. *See* 2013 ROD, Table 2, Required Mitigation Measures by Resource, at 25. Please update us on all steps taken in response to these investigations, as well as the effectiveness of the measures used to collect this critical information. In light of the lack of any current information as to the extent of the fugitive dust

³² The Science of Decision-making: Applications for Sustainable Forest and Grassland Management in the National Forest System. Forest Service General Technical Report WO-88, July 2013 at page 5. Available at: https://www.fs.fed.us/rm/pubs_other/rmrs_2013_thompson_m004.pdf.

spreading into the monument and uptake of lead and other contaminants into the food chain, We request this analysis be conducted and disclosed as part of this scoping process.³³

We further request the Forest Service evaluate and disclose the precision and accuracy of HGCMC's dust monitoring equipment. Since 2011, HGCMC has been monitoring fugitive dust emissions from the Tailings Disposal Facility (TDF) using 10-liter Atmospheric Depositional Pails (ADP's) mounted off the ground. *See* 2019 Active Tailings and Production Rock Report 4.2.7 at page 11. This program is based on a requirement from the Forest Service to sample for fugitive dust that utilizes federal reference methods for dust monitoring devices. *See* 2013 ROD at 3-12.

Despite the requirement to use reference methods and equipment of known precision and accuracy, HGCMC built their own monitoring equipment. This equipment is described in the Integrated Management Plan (IMP); "[t]hrough crude and non-specific this methodology is useful in the study of long-term trends." *See* IMP at Section 5-1.³⁴ There is no further information in the HGCMC's Quality Assurance Protocol Plan about dust monitoring or data quality objectives to be achieved by monitoring. There is no information regarding how the current equipment was "adapted" from the required standard ASTM D1739 equipment. Method D1739 does allow for adaptations, but precision and accuracy must be established by comparison to standard equipment. There is no evidence that such a comparison was ever conducted. Absent the information gained by direct comparison to standard equipment, the Forest Service and public have no information as to the precision and accuracy of fugitive dust quantities or the impacts to public land within and outside of the monument. Additionally, the monitoring program provides no information as to the range across which dust is spreading onto monument lands and waters. As with the Hawk Inlet monitoring, to date the Forest Service has inexplicably deferred to the State of Alaska without reviewing or evaluating requirements for dust monitoring in the state's Waste Management Permit.

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 Section 13.10. Note that unlike Greens Creek, the Red Dog Mine is not located on land subject to ANILCA's increased protections. Please provide the public with the information about exactly what equipment is being used and/or a comparison with commercially available equipment and a determination of precision and accuracy during the scoping process.

As discussed elsewhere in this comment letter, the Forest Service has a duty to evaluate monitoring programs required by other jurisdictions such as ADEC's Waste Management Permit

³³ The 2013 Record of Decision further directed Hecla to "[d]ocument history of customary, traditional, and contemporary uses of . . . Hawk Inlet." *Id.* at 28. This analysis should also be disclosed as part of the scoping process.

³⁴ IMP is Appendix 1 of the 2020 General Plan of Operation available at: <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/HGCMC-GPO-June-2020.pdf>

and require changes as necessary to fulfill the Congressional requirements for mining in the monument described in ANILCA. **We recommend that the Forest Service evaluate the current dust monitoring equipment employed by HGCMC for precision and accuracy by direct comparison with commercially available standard ASTM-certified equipment and apply that analysis in all areas of the SEIS.**

Dust Monitoring Program Must Be able to Measure Impacts to the Monument and Submerged Lands.

Table 4.2 at page 12 of the 2019 Active Tailings and Production Rock Report³⁵ shows that most of the dust events spread toward south and southeast of the tailings pile and toward the monument and Greens Creek delta including sample sites S-1 (the designated natural background site) and S-2. This is not a small amount of dust. Adding the total dust collected in the south and southeast ADPs together produces 151,000mg/meter²/year. This equates to 0.3 lbs. of dust falling on every square meter of public land per year at these monitoring sites.

The dust plume has been detected but not quantified a great distance further from the tailings pile beyond the range of the ADPs. “Fugitive dusts have a potential to be released over a greater surface area, with a possibility of reaching the Kootznoowoo Wilderness and beyond.” *See*, 2013 ROD at 1-5. Snowpack analysis showed observable amounts of lead loading “up to 1,695 feet from the TDF”. *Id.* Elevated lead levels have been recorded at monitoring station Site 9 on Tributary Creek approximately 2750 feet (one-half mile) south of the TDF. Fugitive dust is the suspected cause. *See* 2019 Fresh Water Monitoring Program Annual Report at 231.³⁶

The Hawk Inlet Annual Reports note increasing levels of lead in sediment and mussel tissue in the marine environment since the mine went into production. The report assumes it is from natural weathering of local minerals since the same trend is observed at Pile Driver Cove identified as a background or natural station. However, that assumption is unwarranted. It must be further noted that the repeated use of assumptions in these reports demonstrates that the data being collected has no predicative power at all. It is questionable how the Forest Service can use the monitoring to predict the effects of any proposed alternative without first conducting actual quantitative and qualitative studies.

Pile Driver Cove is south to south west of the TDF in the primary direction for deposition of fugitive dust. It is noted that lead and other contaminants are increasing at this site as well as the monitoring location at S-2. This is used as the basis for the assumption that the source of lead is natural rather than from mine activities. Yet data from the Fresh Water Monitoring program on

³⁵ Available at: <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/2019-Active-Tailings-and-Production-Rock-Site-Report.pdf>

³⁶ Available at: <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/2019-Fresh-Water-Monitoring-Program-Report.pdf>

surface waters within the project area do not detect any natural source of lead loading being transported in the fresh waters draining the surrounding uplands.³⁷ The fresh water data at all monitoring sites on Greens and Zinc Creeks are well below the threshold levels for lead except, as noted above, Site 9 where fugitive dust influence is suspected. Greens Creek is the major tributary to Hawk Inlet. If the observed lead loading in Hawk Inlet is from natural weathering, it is coming from somewhere else than the surrounding uplands. Attributing the increasing lead levels observed in the marine environment to natural causes is unsupported speculation. The observed increase in lead levels on the land and waters is likely the result of the loss and deposition of fugitive dust from the tailings dump.

It is inconceivable to assume that fugitive dust is not impacting Hawk Inlet which is located much closer to the tailings pile than Site 9 on Tributary Creek. It is also unsupported and inconsistent to conclude that dust is the cause for the rise in contamination in monitoring wells and in Tributary Creek on land, but that a similar rise in the adjacent Hawk Inlet is unrelated to mine activity and, therefore ‘natural’. As noted above, the Forest Service has failed in its duty to review, comment on or correct any of the monitoring reports supplied by HGCMC or the conclusions offered.

As noted above, the conclusion reached in the Hawk Inlet monitoring report that the increase in lead was natural because levels were increasing at all three marine sample locations is unsupported. One of the 3 sites used for monitoring, Site 3, is listed by the State of Alaska as impaired possibly due to fugitive dust and the other two sites are well within the possible influence of dust blowing from the tailings pile as noted above. The lack of dust monitoring outside the footprint of the tailings dump further undercuts the unsupported claim of natural causes. The 2019 Fresh Water Monitoring Report lists fugitive dust as a “potential source” of increased lead at multiple monitoring sites. The Report “hypothesizes” that fugitive dust is the cause at two other sites and that dust “maybe collated” with observed trends at another monitoring site. There is no scientific reason to assume two separate causative models, one for the uplands and one for Hawk Inlet, where one model would work for both.

An EIS must identify methodologies used, along with the scientific and other sources relied on for conclusions.³⁸ Agencies must “insure the professional integrity, including scientific integrity, of the discussions and analyses” in an EIS.³⁹ **We request the Forest Service review all annual monitoring and make those reviews available to the public as part of this scoping process.**

³⁷ Available at: <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/2019-Fresh-Water-Monitoring-Program-Report.pdf>

³⁸ *Native Ecosystems Council*, 418 F.3d at 964.

³⁹ *WildWest Inst. v. Bull*, 547 F.3d 1162, 1171 (9th Cir. 2008).

The SRK audit in 2009 recommended all mine regulators consider creating a formal Agency Joint Regulatory Group, but we are unaware of any action taken in response to this recommendation by either the State of Alaska or the Forest Service. *See* Attached Record at B, page 91. Given the serious questions raised by the FOAI Assessment, and the existence of extensive pre-mine baseline data never revisited, now is the time for all the regulatory agencies to work together to assess the effectiveness of the monitoring programs, identify gaps and replicate the existing baseline assessment. This is particularly important here, where “unforeseen [environmental impacts] may result in the incompatibility of the operations with the protection of [monument] values” *See* 36 C.F.R. §228.80(d)(1).

We request that the Forest Service, Department of Environmental Conservation, Department of Natural Resources and the Alaska Department of Fish and Game consider creating a formal Agency Joint Regulatory Group to review the monitoring reports, methods and field procedures and determine the gaps in knowledge and associated risks for all alternatives. We request the Forest Service include the results of this review in the SEIS.

We recommend that ASTM compliant dust monitoring equipment be placed further into the National Monument, Kootsnoowoo Wilderness Areas and on the Greens Creek Delta so that data can be collected as to the extent fugitive dust impacting the public lands. Dust monitoring must occur at the intersection of the land and waters near each existing monitoring location to test the assumption of ‘natural weathering’.

We also recommend that biological uptake studies be conducted on area flora and fauna to measure the impacts of the fugitive dust and bioconcentration and accumulation of metals throughout the food chain to assure the wildlife and subsistence values of the monument are protected. This data needs to be collected prior to an SEIS so that the results can be applied to the individual Alternative analysis, so that decision-makers and the public can make reasoned determinations as to the impacts on public lands from the alternatives analyzed.

HGCMC and the State of Alaska have used the implementation of the relatively new dry stack tailings storage technology employed at the Greens Creek Mine as a model of environmentally sound best practices for mining in difficult environments and under the extra protection of a National Monument. If the proper data collected from the application of this new technology is not collected or properly assessed, then those claims are unsupported. One of the monument values described in the Declaration is its significance as a living laboratory; the Forest Service should take the opportunity to learn from this example of dry stack technology and apply those lessons on other National Forest lands.

The Forest Service's overreliance on existing information to determine the potential environmental effects of this proposed action is not sufficient under NEPA because here, additional information is necessary to make a reasoned choice among alternatives.⁴⁰ **We recommend that the Forest Service take a hard look at all data sets and conclusions derived from those data sets.**

The Effects of Moving the Wastewater Outfall into Hawk Inlet Must Be Disclosed

The Department of Interior US Bureau of Mines (DOI Report)⁴¹ describes that upon restarting operations after the shutdown in 1989, the Plan of Operation that had been approved in 1984 was still in force, but was also subject to review. Four basic modifications including increasing production were requested and approved. Re-locating the discharge from Chatham Strait to the current location in Hawk Inlet was not among the listed modifications. *See* Attached Record at L, page 31.

The 1983 ROD for the Greens Creek Mining Project selected Chatham Strait as the effluent discharge site after examining other alternatives including the Hawk Inlet sill site. It did so because of “the lack of definitive data regarding potential biological effects within Hawk Inlet and the absence of discharge standards from ADEC at the time of this decision.” *See* Record of Decision, Greens Creek Mining Project, Final Environmental Impact Statement (Jan. 21, 1983). The decision further indicated the Forest Service would not oppose discharge at the Hawk Inlet sill site “[i]f, at a future date, the permitting agencies are satisfied that potential biological effects have been identified and/or that no significant deterioration of the biological community will occur.” *See* 1983 ROD at 1. The Chatham Straits discharge site could be changed to the Hawk Inlet Sill and that alternative was described in the EIS, but it would require additional study and EPA/ADEC approval. *See supra* at 39, page 28. This report states that during the shutdown due to low metal prices “several studies were undertaken to clarify options for water discharge location in Hawk Inlet” Attached Record L at 30.

The DOI Report describes the efforts of the various agencies at the time:

“Coordination with agencies was an ongoing effort, but it was quickly identified that the agencies had no criteria for evaluation or development of baseline or

⁴⁰ *See, e.g., Pub. Emps. for Env'tl. Responsibility v. Hopper*, 827 F.3d 1077, 1083 (D.C. Cir. 2016) (remanding EIS to the agency for preparation of geological surveys because it may be appropriate for the agency to conduct additional monitoring to gather more data going forward, but it “does not excuse the [agency] from its NEPA obligation to gather data about the [environmental consequences of its action]”)

⁴¹ Regulatory Processes Associated with Metal-Mine Development in Alaska; A Case Study of the Greens Creek Mine Final Report Prepared for U.S. Bureau of Mines. August 1993 At 17. Attached Record at N

subsequent monitoring programs. Instead of coordinating the development of monitoring criteria, agencies waited for the Company to develop monitoring proposals. The Company sometimes received agency responses or opinions. Due to the lack of set guidelines, some agency personnel that responded accepted the proposals, others required additional monitoring sites and parameters, while still others questioned the need for the proposed monitoring at all. In general, without some type of coordination mechanism, agency conclusions were inconsistent and, in most cases, fell short of formal approval of the monitoring program.”⁴²

Although Hecla presently discharges its mine effluent at the Hawk Inlet sill site, we could find no information in the planning record or reasoned explanation to support shifting the discharge site from Chatham Strait to the Hawk Inlet sill site. Despite years of monitoring data collected by HGCMC (and its predecessors) in Hawk Inlet, the monitoring program does not ensure the maintenance and protection of abundant, diverse, and productive aquatic life in Hawk Inlet. According to the first of only 2 third-party audits ever conducted of operations at the Green Creek Mine, “[t]here have been no documented comments or interpretation of the [monitoring] results . . . regarding data presented in the [Hecla Greens Creek Mining Company] annual reports.”⁴³ Without evaluating whether the existing monitoring program is sufficient to determine whether or not observed changes indicate statistically significant adverse effects, the Forest Service, EPA and ADEC lack a credible basis for concluding that pollutant discharges at the Hawk Inlet sill site have not caused any impact in the abundance and diversity of marine life in Hawk Inlet. **We recommend the Forest Service disclose during the scoping process for this action all studies or analyses justifying the change of discharge location, and that the agency include as an alternative in this SEIS moving the discharge back to the original location.** If no such studies or analyses exist, then the population and diversity study must be repeated in order to measure the effects on the biological community according to the Forest Service’s 1983 ROD.

The Monument Values Must Be Defined

Since the initial authorization up to the current day, the Forest Service has not defined the phrase “monument values” in ANILCA in quantitative terms. However, all sections of this scoping document and ultimately the decisions based on this analysis must assess the project’s potential impacts on monument values. Since the term is still not well-defined, the Forest Service has a duty to employ extra caution when authorizing actions that could affect these values or when relying on the actions of other agencies to protect those values. This has not been the case in

⁴² Id. at 17. Attached Record at L.

⁴³ See SRK Consulting, Environmental Audit of the Greens Creek Mine at 55 (Mar. 2009)(available at <http://dnr.alaska.gov/mlw/mining/largemine/greencreek/pdf/gcaudit2009ex.pdf>).

past actions, including the decision on moving the discharge from what was required under the 1983 Greens Creek EIS and in the documents supporting the Finding of No Significant Impact in the 1988 EA absent of any analysis by EPA/ADEC about the impacts of moving the discharge location into Hawk Inlet.

It took nearly 20 years after the approval of this mine's first Plan of Operations for the Forest Service to acknowledge the significant acid-generating potential of the Green Creek Mine's tailings, waste rock, and even some of the construction rock. At this point in time, "Greens Creek will be responsible for collection and treatment of water from the tailings [dump] for at least a hundred years, perhaps in perpetuity." *See* 2013 ROD at 5. At a recent community meeting in Angoon, tribal citizens expressed fear about impacts from Hecla's mine discharges into Hawk Inlet and alarm that the harm could extend far beyond Hawk Inlet and threaten their customary and traditional uses of marine waters and intertidal resources up and down the western shore of Admiralty Island National Monument. The Angoon Community Association, a federally recognized Tribe is submitting a resolution and letter as part of this comment period.

We again request the Forest Service take a hard look at our previous recommendation of using flow augmentation technology to dilute mine effluent prior to discharge during the upcoming NEPA process. *See below*, Alternatives. We first proposed this alternative, with supporting materials, five months before release of the draft environmental impact statement (DEIS) for the Greens Creek Mine Tailings Dump Expansion in April 2012. Neither the DEIS nor the FEIS evaluated the "flow augmentation" alternative or the potential for this treatment approach to mitigate adverse environmental consequences from continued discharge and loading of hazardous pollutants into Hawk Inlet. SEACC and the Angoon Community Association objected to the agency's failure in our appeal of the 2013 ROD. In response, the Forest Service noted that the Environmental Protection Agency and Alaska Department of Environmental Conservation regulates the discharge of pollutants "and the Forest Service cannot compel these agencies to require particular treatment technologies or dilution methods [citation omitted]." *See* Appeal Reviewing Officer's Recommendations at 7 (Dec. 12, 2013). As pointed out above, EPA and ADEC do not consider the protections required under ANILCA and they are not reflected in permits or in the required monitoring issued by them. This is the duty of the Forest Service.

The 2013 ROD also tried to insulate the Forest Service by "accept[ing] the APDES permit [issued by ADEC] as compliance with [Clean Water Act] requirements." 2013 ROD at page 31. The Forest Service's deference is misplaced. The regulation the ROD cites in support of its ability to rely on the APDES permit (36 C.F.R. 228.8(h)) is in subpart A of Part 228 relating to regulation of hardrock mining on National Forest lands, not subpart D, which deals specifically with mining operations within Misty Fiord and Admiralty Island National Monuments. That regulation allows the Forest Service to accept permit approvals issued by State agencies, but only if those approvals are "similar or parallel" to the requirements of Part 228. The process for assuring that an APDES permit complies "with applicable . . . State water quality standards"

differs substantively and qualitatively from ANILCA’s requirement that a plan of operations on monument lands be “compatible, to the maximum extent feasible, with the protection of [monument] values.” *See* 36 C.F.R. §228.80(c). As noted in *SEACC v. Watson*, ANILCA’s standard “is a strict one and demands strict compliance with environmental protection provisions set forth in ANILCA and in other applicable environmental statutes.”⁴⁴

Subpart D makes no mention of the other substantive limitation imposed by Congress on mining activities within the monuments. In addition to ensuring that that all mining operations are “compatible, to the maximum extent feasible” with protection of monument values, the Forest Service must prevent “irreparable harm” to the monument from the use of leased lands for mining or milling purposes. *See* Section 503(i)(1)(B). Forest Supervisor Cole interpreted this provision as “apply[ing] on any National Forest System land, including land within the monument and land outside its boundary.” 2013 ROD at page 12.

ANILCA does not require the Forest Service to substitute its judgment for those of other agencies within their area of expertise, or permit it to ignore valid authorizations issued by other agencies for activities taking place on monument lands. However, it does require the Forest Service to assure that those authorizations satisfy the heightened standards for resource protection imposed by Congress on any mining activities conducted on monument lands. The Forest Service lacks the discretion to defer to other agencies, state or federal, when satisfying the stringent duties Congress imposed on it under ANILCA to prevent harm and protect monument values.

NEPA requires that impacts be evaluated for the project and surrounding areas.

Decisions relating to project components outside the federal agency boundaries are still subject to analysis in the SEIS and must be considered for cumulative impact analyses. The information in the SEIS must be complete enough that it can be used by appropriate agencies to fulfill environmental analysis needs and to provide information for later permitting.

The Tongass Forest Plan also mandates the Forest Service “coordinate . . . minerals administration with state and other federal agencies,” “assess the effects on populations of [anadromous fish and other foodfish],” and “[m]aintain [those] habitats, to the maximum extent feasible.” *See* 2016 Tongass Forest Plan Amendment, MG1.IV.A and MG2.III.B.1 at p. 4-36, 37. This Tongass Plan direction augments the requirements in 36 C.F.R. 228.8(c) that “[a]ll . . . waste produced by operations . . . minimize adverse impact upon the environment and forest surface resources” and the mine “operator shall take all practicable measures to maintain and protect fisheries and wildlife habitat which may be affected by the operations.” The SEIS and Forest Service decision must take these requirements into account.

⁴⁴ *SEACC v. Watson*, 697 F.2d, 1305, 1310 (9th Cir. 1983) (citations omitted).

The Forest Service should also analyze the other overlapping jurisdiction of the private inholding around the Cannery (site of the contaminated area) and possible overlap or omission in implementation mitigations between state and federal agencies. Private land is subject to different allowable uses that may or not be compatible with overall monument protection. The division of jurisdiction within the waterbody of Hawk Inlet requires that the state, federal agencies, and private land owner all act together.

Information on the need and Long-term Implications of Pumping Contact Water

The proposed revised plan of operation is silent on the need to pump contact water from the new expansion area north of the drainage divide that separates the Cannery Creek area from the water treatment facilities on the south side of the divide. “The TDF occupies a gently sloping terrace that straddles the drainage divide between the Tributary Creek drainage basin, the Cannery Creek drainage basin, and the Hawk Inlet drainage area.” *See* April 2012 DEIS 3.5.2 at page 3-39. The Plan of Operation submitted by HGCMC maintains the water treatment infrastructure without building a separate water treatment facility to the north. “HGCMC will maintain the existing Ponds 7 and 10, collectively known as “Ponds 7/10”, located at the southwest corner of the existing TDF, and the existing adjacent water treatment plant.” *See* Plan of Operation 3.4.1 at page 3-15.

The 2013 FEIS and ROD found that additional pumping of contact water required under several proposed alternatives posed an unacceptable risk of failure. “Based on my review of the record, I believe that long-term reliance under Alternatives C and D on a greater number of generators, pipes, and pumps, most of which would be out of sight of the treatment plant, poses a higher risk of substantial spills of untreated contact water than the simpler pumping system required under Alternatives B and B Mitigated. For all these reasons, even though Alternatives C and D would cause less harm to the monument, current information suggests that Alternatives C and D may have more total adverse environmental effects than would Alternatives B and B Modified.” *See* 2013 ROD at page 11. Alternative B and B Modified required no additional pumping. The Forest Service must assure that additional pumping will not be required for the duration of active water treatment, a span of hundreds of years or into perpetuity. If it is found that pumping of contact water is required, then a full risk analysis must follow.

Alternatives

While NEPA’s action-forcing function does not mandate particular results, the substantive standards contained in Sections 503, 504, and 505 of ANILCA, as supplemented by the 1996

Greens Creek Land Exchange Agreement, do. Several statements in the Exchange Agreement between HGCMC's predecessor, Kennecott, and the Forest Service, indicate that the parties intended future contemplated mine development to "occur without significant impact to monument resources and its purposes" and "in an environmentally sound manner." The parties' intent provides a strong basis for taking a more extensive look at treatment alternatives such as pyrite removal or flow augmentation technology, shipping wastes off-site, or alternatives that maintain the present and continued productivity of all salmon habitats in the project area, including on National Forest lands within and outside the monument.

Flow Augmentation

In December of 2011, SEACC notified the Forest Service that direct discharge of toxic pollutants into a mixing zone in Hawk Inlet was no longer necessary and supplemented our earlier scoping comments with information regarding flow augmentation as a potential mitigation measure. *See* Dec. 9, 2011 Letter from SEACC to Monument Ranger VanOrmer (Attached Record at M).

With this letter we attached a PDF Portfolio that included SEACC's Informal Request for Review of APDES AK0043206; Director Bonnet's response, which stayed the permit's effective date and extended the EPA- issued permit AK00432006 (2005); our follow up letter to Morgan, head of ADEC's Waste Water Discharge Program; and, a letter from Dr. David M. Chambers of the Center for Science in Public Participation that identified demonstrated treatment technology, approved by ADEC and EPA, that would eliminate the necessity for mixing zones containing toxic levels of pollutants in Hawk Inlet.

The previous DEIS did not identify or evaluate this "flow augmentation" alternative to direct discharges from the tailings dump, with associated mixing zone, into Hawk Inlet, or the potential for this alternative treatment approach to mitigate adverse environmental consequences from the continuous discharge and loading of pollutants into Hawk Inlet. This alternative should be addressed in the SEIS.

No Action Alternative and Climate Change

A no-action alternative, which represents no changes to the approved 2013 General Plan of Operations serves as the baseline for the comparison among the action alternatives and must be analyzed in addition to the proposed action.

Over the past several years, the evidence for anthropogenic climate change has mounted, and the impacts are being felt across more and more of the country in the form of extreme weather, severe storms, and the upsetting of water balance models for mines and tailings piles. It is clear that climate change exposes both projects (roads, infrastructure, etc.) and the environment to direct, indirect, and cumulative risks that may render a previously practicable project infeasible or imprudent, due to either impacts to the project, impacts to the environment, or in some cases both.

Climate change complicates any long-term effects analysis and risk assessment. The performance and risk assessment of any Alternative including the ‘No-Action’ alternative must be based on the ability of the Forest Service to accurately predict the effects of climate change. Given the uncertainties associated with predicting climate change impacts, this evaluation will necessarily be imprecise and uncertain. This level of imprecision and uncertainty must be acknowledged and address in the analysis of all effects under all alternatives. The probability of predicting the success of any Alternative is limited by the low precision in estimating the effects of climate change. Therefore, climate change becomes the measuring stick, or the minimum detection limit, against which the agency should base the risk analysis for all alternatives including the no-action alternative. The Forest Service cannot calculate the future performance of any alternative, including the No-Action alternative more precisely than it can predict the effects of climate change. The Forest Service must incorporate this uncertainty into all of its alternatives analyses.

Climate change poses threats to numerous ecosystem services including increasing pressure on subsistence resources. Key threats include increased storm intensities, ocean acidification, warming ocean and stream temperatures, changing precipitation amounts and patterns, changes to evapotranspiration rates, changing distributions of species, changing outbreaks of insects and changes to ecosystem productivity. Mitigation of some impacts may be possible with strategic planning, but many impacts cannot be mitigated, and these effects will need to be accounted for and addressed in this SEIS. A general summary of predicted climate changes the SEIS must address include the following: temperature increases, with winter temperatures increasing at a higher rate than summer temperatures; increase in length of growing seasons and the number of frost-free days; shifts in temperatures in seasonal transition months from below freezing to above freezing; increase in precipitation; more rain instead of snow; increase in evapotranspiration rates; a decrease in precipitation versus potential evapotranspiration ratios in the summer causing dryer summer conditions at the mine site and an increase in storm intensities. Increased storm intensities may cause several potential impacts to the area from increased wind throw, changes to stream morphology or the fate and transport of fugitive dust. Projections of future changes anticipate even more dramatic effects and these have been shown to err on the conservative side. The Forest Service must consider these effects on all alternatives and the final closure plan. If the probability of success of any alternative becomes too small based on climate change or any other factor, another alternative must be selected.

Pyrite Reduction

The only sure way to avoid or reduce the need for long-term water treatment is to reduce the amount of pyrite in the tailings pile. The proposed engineered cover is not and cannot be considered a proven technology since the design has never been finalized and there are no long-term examples of any such design being effective. The acknowledgment that active water treatment may be necessary forever is evidence that any type of final cover design and its

implementation is unlikely to reduce seepage concentrations to a degree that would permit discharge of the seepage without prior treatment.

A similar sized mine that has been compared to Greens Creek is proposed north of Haines, Alaska exploiting a similar massive sulfide deposit. The mine plan contained in the Preliminary Economic Assessment (PEA) calls for pyrite removal and placing the pyrite as underground backfill. *See* NI 43-101 Technical Report for the Palmer Project, effective as of June 3rd, 2019 at page 1-29.⁴⁵ The PEA notes that pyrite “is a saleable commodity...and could be a significant opportunity.” *Id.* at page 1-41. According to the estimate, eliminating the pyrite from the tailings bestows such advantages that “it may even be beneficial to the Project to sell the pyrite at a loss.” *Id.*

Removal of pyrite would be drive the acid potential neutralization ratio to a level that would favor neutralization within the tailings. This alternative would require modifying a flotation circuit to concentrate pyrite thereby lowering the pyrite concentration within the existing lead zinc tailings prior to disposal at the tailings facility. A substantial reduction in pyrite concentrations could potentially reduce the risk of acid rock drainage chemistry developing in the tailings and reduce the requirement for active water treatment expected to be necessary for hundreds of years if not in perpetuity.

The pyrite removal alternative was identified, screened, and evaluated in the 2003 EIS and 2013 EIS’s and rejected due to space requirements near the mill and risks associated with the storage of hazardous wastes. These limitations and concerns pale in comparison to the risks associated with active water treatment forever. **We urge the Forest Service to analyze pyrite removal, not just as a stand-alone technology, but as applied to every alternative under consideration.**

Mitigation and Reclamation

An EIS must discuss mitigation steps that can be taken to reduce or avoid environmental harm.⁴⁶ Under NEPA, “mitigation” includes “[c]ompensating for the impact by replacing or providing substitute resources or environments.”⁴⁷ Consequently, the Forest Service should consult with the federally recognized Tribal governments in Angoon and Hoonah about appropriate compensation packages for the impacts to their customary and traditional uses of Hawk Inlet and the surrounding lands from past, present, and reasonably foreseeable future development of the Greens Creek Mine. The Angoon Community Association has made it clear the past and current

⁴⁵ Available at:

https://constantinemetals.com/site/assets/files/3715/constantine_palmer_pea_report_18july2019_final.pdf

⁴⁶ *Japanese Vill., LLC v. Fed. Transit Admin.*, 843 F.3d 445, 455 (9th Cir. 2016).

⁴⁷ *Id.* at 457.

operation of the mine has affected the Tribal citizens' ability to collect traditional foods from a large area of the coast along the north west portion of Admiralty Island including Hawk Inlet. It is not the role of the Forest Service to convince the community of Angoon otherwise, but to prevent further harm and make an attempt to compensate for the loss.

“The Government’s trust responsibilities and treaty obligations make it essential that the Forest Service engages with Indian tribes in timely and meaningful consultation on policies that may affect one or more Indian tribes. Consultation alone is not sufficient. In addition to consultation, coordination and collaboration together lead to information exchange, mutual understanding, informed decision-making, and mutual benefit.” *See* FSM 1500 - External Relations Chapter 1560 - State, Tribal, County, And Local Agencies; Public and Private Organizations at page 1563.

Meaningful consultation is defined under Executive Order 13175 as information and dialogue exchanged that actually has the potential to affect a decision for which the Agency has discretion. If a Tribe is part of a consultation and their views have no real potential to be used in the related decision, the consultation is not meaningful. This definition makes it clear that the Forest Service must engage the Tribes on their terms. If, as in the case of Hawk Inlet, the Tribe feels the need to warn their citizens to avoid collecting subsistence foods in a particular area based on concern about possible contamination, it is not the Forest Service’s place to dispute or discount that warning.

The Angoon Community Association issued such a warning effectively removing from community subsistence use more than 35 miles of coastline including Hawk Inlet on the northwestern shore of Admiralty Island. The removal of this area from subsistence (including the cultural aspects of gathering foods) represents a loss for the Tribe and its citizens. *See* 25 U.S.C. 3113; 25 CFR 242.4. This loss should be mitigated through compensation.

Appropriate compensation could include HGCMC funding completion of the Thayer Creek hydro project for Angoon, funding the connection of Hoonah to the intertie that was extended to the Greens Creek Mine several years ago, and additional cleanup of the 1989 concentrate spill at the ore loading facility. As noted in the 2013 DEIS (at page iv), the Forest Service has the authority to add stipulations or require additional mitigation measures in deciding whether and how to make a decision on HGCMC’s proposal to modify its General Operating Plan. We urge the Forest Service to use its authority to address the significant losses suffered by tribal residents of Angoon and Hoonah from the development and operation of the Greens Creek Mine.

Training for Closure

The community Angoon has existed on the island for centuries therefore it has a better chance of existing for centuries into the future than entities such as HGCMC (less than 30 years) or the U.S. Forest Service (in existence for 115 years.) Given that the current tailings dump, regardless of continued expansion, will require active maintenance for centuries it makes sense that the

community of Angoon be involved in the care and maintenance portion of closure. We request that residents of Angoon be provided the training necessary to fulfill that role.

Off Site Mitigation

To compensate for the loss of wetlands under this application or under the consideration of a longer life-of-mine, SEACC requests the Forest Service require HGCMC fund a feasibility analysis for cleaning up the Chichagof Mine site in Klag Bay. The cleanup of this site would allow transfer of the land back to the National Forest.

Methods for Further Analysis

Repeat of 1981 Baseline.

Several provisions of ANILCA afford protections to subsistence resources, subsistence harvesters and the “Health of fish and game.” Section 506(2) states: “Nothing shall effect the continuation of the opportunity for subsistence uses by residents of Admiralty Island consistent with title VIII of the Act.” SEACC’s request for replications of the 1981 baseline study of species diversity and populations, many species being important subsistence foods, is in keeping with that section, as well as ANILCA Section 812. Section 812, entitled “Research,” states: “The Secretary, in cooperation with Federal agencies, shall undertake research on fish and wildlife and subsistence uses on the public lands; seek data from, consult with and make use of, the special knowledge of local residents engaged in subsistence uses; and make the results of such research available to the State, the local and regional councils established by the Secretary of State pursuant to section 805 and other important persons and organizations.” The State of Alaska’s monitoring under the Alaska Pollution Discharge Elimination System (APDES) does not—and cannot—fulfill this duty.

As noted above, there is no reason the 1981 baseline study cannot be repeated.

Expanded Socioeconomic Analysis.

Compounding the problems noted above is the Juneau-centric focus of the so-called socioeconomic analysis done in the lead up to the 2013 FEIS. This constricted analysis does not enable the Forest Service to fulfill its obligation to identify and address the social, health, and environmental effects of this proposal borne disproportionately by both the Angoon and Hoonah communities. To determine these effects, the Forest Service must undertake direct consultation with the tribes and direct the State to conduct a Human Health Assessment for both communities.

Executive Order 12898 directs federal agencies to: identify and address the disproportionately high and adverse human health or environmental effects of their actions on minority and low-income populations, to the greatest extent practicable and permitted by law and to develop a

strategy for implementing environmental justice.⁴⁸ The Forest Service must conduct a socioeconomic analysis of the effects of the mine in Angoon as well as Juneau with the understanding that economic gain for Juneau can never justify social or economic loss for Angoon.

Changes to the APDES Monitoring Requirements Must Be Considered.

If the Forest Service's current reliance on ADEC to protect the submerged lands within the monument continues, we request the Forest Service create monitoring requirements based on the express duty to protect monument values rather than relying on methods from state agencies that carry no such duty. We endorse the recommendations of the United States Department of the Interior Office of Environmental Policy and Compliance letter dated May 30, 2012. *See Attached Record at O.* These recommendations include that monitoring samples be taken near the edge of the mixing zone rather than far from the mixing zone. It also recommends that the CORMIX model used to evaluate the mixing account for tidal action that is likely to repeatedly expose biota to toxins. In addition, monitoring samples will need to be taken during tidal periods that put the outfall plume upstream of the sampling sites rather than the reverse. This detailed information on monitoring needs to be included in the SEIS.

We further recommend that the discharge and diffuser associated with Outfall 002 be relocated to its original site in Chatham Strait as described in the original 1984 EIS. The Forest Service, absent of any publicly disclosed analysis or data, allowed the outfall to be relocated inside Hawk Inlet. The Forest Service must either produce the studies that supported this change, undertake new studies on the status of the subsistence resources in Hawk Inlet or cease allowing the discharge of pollutants into those resources.

Moving the Outfall would reduce the extent of disturbance within the monument boundary, reduce the duration of effects within the monument and on subsistence resources, and help assure that operations do not cause irreparable harm.

Thank you for your expeditious attention to this request for information and a timely reassessment of the Hawk Inlet baseline. We think now is an opportune time to begin this reassessment and that doing so is essential for informed agency decision making and the agency's compliance with the high standards set by Congress in ANILCA for development of the Greens Creek Mine. This is not SEACC's opinion alone. More than 611 people have signed our petition to the Forest Service requesting a repeat of the 1979-81 baseline studies and utilize the unique opportunity to use Hawk Inlet as a living laboratory. Please incorporate this letter and accompanying data into the planning record for the anticipated expansion of the Greens Creek Mine tailings dump. We look forward to hearing from you soon.

⁴⁸ Federal Register Presidential Documents Vol. 59, No. 32 Wednesday, February 16, 1994





















Sincerely,



Guy Archibald
Staff Scientist

Cc: Mathew Reese
Basia Trout

Contents of Attached File.

-  0. GC Scoping Attached Record
-  A-1 Legacy Cove Note 5 Sediment vAug1...
-  A-2 WildFoods_LegacyCoveNote3_FOA_...
-  A-3 SEAL LegacyCoveNote3 FINAL DEC15
-  B SRK gcaudit2009
-  C 1981 M.4
-  D Final_Results_1981_Field_Program
-  E Baseline GC Biological Investigations
-  F Angoon to State about avoiding Hawk I...
-  G DHSS_DEC_2016-02-29_Angoon Respo...
-  H Summary memo of clam survey near ...
-  I OCEANUS on EFH in Hawk Inlet
-  J Archibald Letter to Fish and Game bioas...
-  K Pendleton to Lindekugel 12_15_14_NO_...
-  L DOI Case Study of Greens Creek Mine
-  M SEACC to VanOrmer -- new alternative...
-  N ER12_261_HeclaGreensCreek_DEIScom...
-  O NMFS letter on Hawk Inlet 8.14.03
-  P-1 HEALING HAWK INLET PETITION - 20...
-  P-2 Healing Hawk Inlet Petition Signees -...