



THE STATE  
of **ALASKA**  
GOVERNOR SEAN PARNELL

Departments of Natural Resources,  
Fish and Game, &  
Environmental Conservation

Alaska Department of Natural Resources  
550 W. 7<sup>th</sup> Avenue, Suite 1400  
Anchorage, AK 99501

Alaska Department of Fish and Game  
333 Raspberry Road  
Anchorage, AK 99518-1599

Alaska Department of Environmental Conservation  
410 Willoughby Avenue, Suite 303  
Juneau, AK 99811-1800

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Canadian Environmental Assessment Agency  
410-701 Georgia Street West  
Vancouver, British Columbia V7Y 1C6 Canada  
Submitted via email to [KSM.Project@ceaa-acee.gc.ca](mailto:KSM.Project@ceaa-acee.gc.ca)

Re: Kerr-Sulphurets-Mitchell (KSM) Project Comprehensive Study Report

This letter provides the State of Alaska's (State) comments on the Comprehensive Study Report (CSR) for the Kerr-Sulphurets-Mitchell (KSM) Project (reference number 49262) proposed by Seabridge Gold Inc. (Project Proponent). Please consider this cover letter and the enclosed technical comments in your decision. This letter also includes a request that the State continues to be provided information on the KSM Project and be afforded the opportunity to provide our input and comments as it moves through any future permitting and review processes. Finally, this letter includes the State's request that you carefully consider the numerous petitions you have received for a panel review and how the underlying public concerns might be best addressed, whether through such a review or other processes available in your jurisdiction.

The design, construction and operation of the proposed KSM Project are of significant interest to many Alaskans and the State because of the project's potential impacts on Alaska's waters and fisheries. The proposed KSM Project would include the development of mining facilities and discharge waste water in watersheds that either cross into Alaska (i.e., the Unuk watershed) or support Alaska fisheries (i.e., the Unuk, Bell-Irving, and Nass watersheds).

In 2011, the State assembled a team of staff members from our departments of Natural Resources (DNR), Fish and Game (ADF&G), and Environmental Conservation (DEC) who are experienced in hard rock mine regulation to review and comment on the available information relating to the proposed KSM Project. The State review team's understanding of the proposed KSM Project has benefited from a tour of the KSM project area; a public meeting organized by the Project Proponent in Ketchikan, Alaska; a number of working group meetings facilitated by the Canadian Environmental Assessment Agency (CEAA) and Environmental Assessment Office (EAO); and two meetings with representatives of the Project Proponent held in Juneau, Alaska.

The State has appreciated the opportunities it has had to engage with the CEAA and the EAO throughout the Environmental Assessment (EA) and Comprehensive Study processes for the KSM Project. Our participation has greatly helped in our understanding of these processes and many aspects of the proposed KSM Project.

The State has also appreciated the willingness of the CEAA and EAO to consider and incorporate the technical input from our review team into your work. Additional technical comments on the CSR are enclosed.

In providing the enclosed comments related to the CSR, we note our understanding that the future permitting process will include further review of key aspects of the proposed KSM Project, many of which will be of continued interest to the State and many of its citizens. By providing these comments today on the CSR, the State does not intend to waive any right or opportunity it might have or be afforded to comment on any proposed permit. It is our hope and request that the State continue to receive information on the proposed project as it moves through the review and permitting processes and that we continue to be afforded the opportunity to provide our input and comments.

The State plans to review the detailed designs for the tailings management facility, the water treatment and discharge systems, and the associated bonding to the extent that we are able. The State formally requests to be included in the development of authorizations for this project as well as an opportunity to participate in the development of binding mitigation measures, monitoring, and enforcement provisions for the KSM Project. The State also requests to be included in the development of monitoring plans associated with water quality, dam safety, and aquatic resources for the KSM Project and to work with appropriate provincial and Canadian regulatory agencies to develop protocols for sharing monitoring and inspection reports.

Recently, the State has received copies of requests from organizations and individuals asking that the Minister of Environment (Minister) conduct a panel review of the KSM Project. We have also received letters asking that the State join in the request for a panel review. Among the important and serious concerns stated in these requests are the potential long-term water quality and fish habitat effects in the Unuk, Bell-Irving, and Nass rivers from the proposed KSM Project; whether there will be adequate bonding for long-term care and maintenance activities; the possible reliance on unproven selenium treatment technologies; assumptions used to model or analyze potential impacts; undeveloped contingency plans; cumulative impacts; and dam safety.

The State understands that under the pre-2012 Canadian Environmental Assessment Act the Minister has discretionary authority to refer a project to a panel review at any time. We further understand that a panel review is an administrative process that may include public hearings, independent analyses, and additional opportunities for public engagement in the review of a project.

A panel review of the KSM Project may serve to address some of the continuing concerns held by Alaskans. If these concerns can be addressed through a panel review process, the State of Alaska requests the Minister refer the project for a panel review. Should the Minister determine that a panel review would not be the best mechanism for addressing these outstanding concerns, the State requests that the most appropriate mechanism(s) under Canadian law to address the concerns submitted by Alaskans about the KSM Project be identified and implemented.

Because Alaskans have a real and substantial interest in the continued health of the transboundary watersheds they depend on, the State believes that the CEAA has a responsibility to keep Alaskans informed and engaged as the project moves forward into permitting and construction. As a state, we would be happy to assist with coordination and outreach to Alaskan stakeholders.

In addition, the State of Alaska has important obligations to our citizens relating to the protection of fish, wildlife, waters, and lands that we hold in trust and, again, express our desire and commitment to continue to be engaged if and when permitting and development of this project moves forward. Recent events at Mt. Polley highlight the importance of permit conditions and a

rigorous and enforceable monitoring and oversight system. For that reason, we are requesting that CEAA work with us to identify the appropriate means by which the State can be involved in the permitting process and ongoing monitoring for the KSM project.

The State welcomes the opportunity to assist CEAA in its outreach to the Alaskan public for this and future large hard rock mining projects. Additionally, our subject matter experts that have engaged throughout the EA and Comprehensive Study processes for the KSM Project look forward to being involved in the permitting and monitoring processes for the KSM Project. Please coordinate these efforts with Kyle Moselle. He may be contacted at 907-465-6849 or [kyle.moselle@alaska.gov](mailto:kyle.moselle@alaska.gov).

Sincerely,



Joe Balash  
Commissioner, DNR



Cora Campbell  
Commissioner, ADF&G



Lawrence Hartig  
Commissioner, DEC

Enclosure: CSR comments

cc:

Ed Fogels, Deputy Commissioner, Alaska Department of Natural Resources  
Stefanie Moreland, Deputy Commissioner, Alaska Department of Fish and Game  
Kyle Moselle, Large Project Coordinator, Alaska Department of Natural Resources  
Randy Bates, Director, Alaska Department of Fish and Game  
Alan Nakanishi, Technical Engineer II, Alaska Department of Environmental Conservation  
Ben Mohr, Special Staff Assistant, Office of the Governor  
Jeffery Jones, Special Staff Assistant, Office of the Governor

A team of subject-matter experts with the Alaska Departments of Natural Resources (DNR), Fish and Game (ADF&G), and Environmental Conservation (DEC) has participated in technical working groups throughout the Environmental Assessment (EA) and Comprehensive Study processes for the Kerr-Sulphurets-Mitchell (KSM) Project. More recently, the State of Alaska's (State's) review team has reviewed the Comprehensive Study Report (CSR) for the KSM Project and offers the following comments for consideration by the Canadian Environmental Assessment Agency (CEAA) and the Minister of Environment (Minister).

#### Comments prior to release of the CSR

The State's review team focused its review of the KSM Project application and supporting studies on the following potential effects:

- Elimination of fish habitat in British Columbia watersheds that drain to Alaska;
- Downstream impacts on Alaska fisheries dependent on the Unuk River; and
- Impacts to water quality in the Alaska portion of the Unuk River.

On January 24, 2014, the State submitted technical comments to the British Columbia Environmental Assessment Office (EAO) regarding the KSM Project, which were also reviewed and considered by the CEAA for the CSR.

The State's earlier comments did not identify any significant concerns with the proposed project, but we requested the following:

- For the Project Proponent to quantify the net potential loss of fish habitat productivity as it relates to the overall Unuk River watershed;
- Additional information regarding provincial or federal requirements for a project proponent to replace or mitigate fish habitat loss;
- Additional information on the regulatory framework related to authorizing mixing zones and site-specific water quality conditions; and
- Additional information regarding financial assurance for the KSM Mine to ensure long-term operability of post-closure mine facilities, water treatment activities, and monitoring.

Seabridge Gold Inc. (Project Proponent) responded to the State's comments on March 6, 2014, and provided more detailed information regarding fish habitat use and the regulatory framework governing the KSM Project. The CSR (page 37) states "[f]ive stream crossings associated with the Coulter Creek Access Road will destroy or alter a small amount of in-stream fish habitat (0.04 ha) for Dolly Varden and Coho salmon below the Mine Site." ADF&G has reviewed the plans and sees the predicted habitat loss includes the surrounding wetlands and is not limited to areas below the ordinary high water mark of the stream, as it would be in Alaska under State law. Although ADF&G could not find a proposal for mitigating physical fish habitat impacts from the proposed access road<sup>1</sup>, ADF&G does not consider installation of culverts as loss of fish habitat, if fish passage is assured. ADF&G, therefore, concludes that the impact of the Coulter Creek access road on the quantity of fish habitat available in the watershed is *de minimis* and will not affect Alaska fisheries.

The State expects to build on our understanding of the provincial and Canadian regulatory frameworks related to mixing zones, site-specific water quality conditions, and financial assurances through on-going discussions with British Columbia and Canadian regulatory

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<sup>1</sup> It appears mitigation from the tailing management facility above Tiegen and Treaty Creeks and the Nass drainage is replaced at 2:1 after avoidance and minimization.

agencies and by participating in the permitting processes for the KSM Project (please also see “Permitting” section below).

### Comprehensive Study Report Comments

#### *Cumulative Effects*

Section 5.15 of the CSR discusses the cumulative environmental effects from the KSM Project and other proposed development projects in the Regional Study Area. Figure 5.15.1 lists a number of projects that are ongoing or are reasonably foreseeable. However, there is no discussion of cumulative effects on water quality in Section 5.15. Pollutant mass loading from multiple development projects could impair waters that drain into Alaska unless a wasteload allocation system is developed.

The Minister’s decision on the KSM Project may benefit from considering the cumulative water quality impact of multiple mining projects located in the Unuk watershed.

#### *Effluent Limits and Mixing Zones*

The CSR suggests that dilution may be used to meet British Columbia Water Quality Guidelines (BCWQG). The CSR (page 36) reads, in part, “the proponent must meet water quality guidelines (BCWQG or site specific guidelines) for the [Processing and Tailings Management Area (PTMA)] 100 meters downstream of the operational discharge,” which implies that the proponent may seek approval for a mixing zone.

The State expects that the provincial and/or Canadian permitting processes will ensure that any authorized mixing zones for the KSM Project will be properly designed and not impede the passage of aquatic life or result in significant adverse environmental effect in the Unuk or Nass rivers (please also see “Permitting” section below).

#### *Predicted Water Quality*

Appendix B of the CSR lists 40 chemical parameters that were modeled as part of the water quality assessment. However, the tables in Appendix B only include the modeling results for eight “key parameters.”

The Minister’s decision on the KSM Project may benefit from modeling results for all chemical parameters that are predicted to degrade baseline water quality.

#### *Selenium*

The treatment of selenium is critical to the success of the KSM Project. The Project Proponent has made a commitment to develop a selenium treatment plant with a throughput of 500 L/s by year five of operation. Ion exchange and co-precipitation is the selenium treatment option selected by the Project Proponent in the environmental assessment. The proponent is piloting this selenium treatment process on water from Mitchell Creek.

The KSM Project has the potential to cause significant adverse environmental effects unless adequate selenium mitigation measures are in place prior to the completion of the selenium treatment plant (i.e., prior to year 5 of operation.)

Sulfates present a major challenge to the success of the ion exchange process for selenium treatment. The efficiency of the ion exchange process is greatly reduced when sulfates are present. The Minister’s decision should consider how the pilot selenium treatment studies, which will use water from Mitchell Creek, will be extrapolated to mine contact water, which will be much higher in sulfates.

DEC recommends that the Minister require, as a condition of her decision, that the Project Proponent develop a successful selenium treatment system capable of meeting BCWQG or site specific guidelines.

#### *Whole Effluent Toxicity*

Whole effluent toxicity (WET) testing measures the net effect of all the pollutants in effluent on aquatic life. Although a single pollutant in effluent might be below water quality standards, the aggregate effect of multiple pollutants can be toxic.

The Minister's decision on the KSM Project may benefit from considering the results of WET testing based on the predicted quality of the effluent.

#### *Kerr Pit*

Table 2.2.1 summarizes the major Project activities and schedule. The closure of the Sulphurets and Mitchell Pits is explained in Table 2.2.1 and elsewhere in the CSR. However, the closure of the Kerr Pit is not presented in Table 2.2.1 and receives little attention in the remainder of the report.

The Minister's decision on the KSM Project may benefit from information regarding the closure of the Kerr Pit that is of similar detail as the information contained in the CSR for the Sulphurets and Mitchell Pits.

#### *Sulphurets Pit*

The proponent has planned for the installation of a geomembrane liner in the Sulphurets pit. While this is an admirable goal, the technical challenges involved in installing a liner in a large open pit will be considerable.

The Minister's decision on the KSM Project may benefit from considering the case where the Project Proponent is unable to line the Sulphurets Pit due to technical challenges or limitations of the geomembrane or Sulphurets Pit.

#### *Water Storage Facility Dam*

Failure of the Water Storage Facility (WSF) Dam would result in a release of mine contact water that would drain into Alaska waters via the Unuk River, which may result in significant adverse environmental effects.

The State expects that a rigorous monitoring, compliance, and contingency planning program will be established prior to authorizing construction of the WSF (please also see "Permitting" section below).

#### *Tailings Management Facility*

Section 5.13 discusses the Catastrophic Dam Break Analysis for the Tailings Management Facility (TMF). A breach of the TMF would likely result in significant adverse environmental effects in the Bell-Irving and Nass watersheds, which support Alaska commercial fisheries.

The State expects that a rigorous monitoring, compliance, and contingency planning program will be established prior to authorizing construction of the TMF (please also see "Permitting" section below).

#### Permitting

The State formally requests to be included in the development of authorizations promulgated under the Fisheries Act, International Rivers Improvement Act, and the Metal Mine Effluent

Regulations. The State plans to review the detailed designs for the tailings management facility, the water treatment and discharge systems, and the associated bonding to the extent that we are able. The State also requests an opportunity to participate in the development of binding mitigation measures, monitoring, and enforcement provisions for the KSM Project.

#### Monitoring

The State formally requests to be included in the development of monitoring plans associated with water quality, dam safety, and aquatic resources for the KSM Project. The State further requests to work with appropriate provincial and Canadian regulatory agencies to develop protocols for sharing monitoring and inspection reports and identifying appropriate State contacts in contingency plans for emergency notifications.

In closing, the State values its working relationships with the CEAA and the EAO. We appreciate the opportunity to review the CSR and to provide comments. If you have any questions or would like to discuss these comments in more detail, please contact me.

Sincerely,



Kyle Moselle

Large Project Coordinator  
Alaska Department of Natural Resources  
Office of Project Management and Permitting  
907-465-6849  
[Kyle.moselle@alaska.gov](mailto:Kyle.moselle@alaska.gov)