

SEABRIDGE GOLD

July 5, 2017

VIA EMAIL

Biological Station,
32125 Bio Station Ln,
Polson MT, 59860

Headwaters Montana
545 Holt Drive
Bigfork, MT 59911

Crown of the Continent
National Parks Conservation Association
321 E. Main St.
Suite 424
Bozeman, MT 59715

Attention: Erin Sexton
Aquatic Ecologist

Dave Hadden
Executive Director

Michael Jamison
Senior Program Manager

Re: Correction of the Record, “Montana’s Experience - A Guide to Protecting Alaska’s Transboundary Future”, June 29, 2017

Seabridge Gold takes the opportunity to highlight **significant errors** in the above referenced memo, which was addressed to the Alaskan Governor and Lieutenant Governor respectively, These factual errors impinge upon our reputation as a responsible developer and we respectfully request they be corrected immediately.

The memo states, *“Furthermore, the wastewater treatment technology that has failed on the Montana border in the Elk-Kootenai watershed is the very same technology that Seabridge Gold has recommended for lowering selenium levels from the KSM Mine in the B.C. headwaters of the Unuk River.”* This statement is factually **incorrect**. KSM is **not a mine** but a development property working towards becoming an operating mine, and the Se treatment technology proposed for the KSM Project is **not the same technology** that is currently experiencing technical challenges in the Elk-Kootenai watershed.

Furthermore, in October 2015, our Se technical experts reached out to members of your team, via email, and provided information about Seabridge's proposed Se treatment technology which highlighted the differences in technology between the two existing treatment systems. This makes your transmission of the incorrect information even more egregious.

The treatment system currently in use within the Elk-Kootenai watershed is an active biological treatment system with fluidized bed reactors. This technology uses organic compounds such as molasses or ethanol to convert selenium dissolved in water to nanoparticles of elemental selenium. The reaction is catalyzed by bacteria and the nanoparticles are entrained in waste biosolids that are landfilled at site. Fertilizer grade nutrients including ammonia and phosphate need to be added to ensure healthy biomass population in the system. Side reactions of the biological process include the reduction of nitrate and sulphate from mine water and transformation of a small portion of selenium into organo-selenium that is subject to rapid bioaccumulation in the receiving environmentⁱ. The by-products of the side reactions include nitrite and sulphide, which are both acutely toxic to fish even in very small concentrations necessitating the use of post-treatment to scrub residual by-products and organics and nutrients added to stimulate the bacteria, from the plant effluent prior to discharge into environment. In 2014, a fish mortality incident in the receiving environment of this biological treatment facility was caused by residual nitrite and low dissolved oxygen in the plant effluentⁱⁱ.

Recognizing the risks associated with biological treatment as realized in the Elk- Kootenai watershed, Seabridge adopted an alternative approach to selenium removal from mine contact water, consisting of a non biological treatment method. The non biological treatment method referred to as Selen-IX technology, was developed by our Se technical experts BQE Water, and was chosen for application at KSM because the physico-chemical, non-biological nature of Selen-IX precludes effluent toxicity as described in the previous paragraph. Selen-IX involves two key unit operations that work in tandem to remove selenium from water and fix it as a stable solid product. The first unit is ion exchange, which selectively removes selenium from impacted water, generating clean water for discharge and a concentrated selenium brine solution. The second unit is an electrochemical treatment system which treats the brine to precipitate selenium and allow re-use of the brine in the ion exchange circuit. Additional technical information of the treatment process is available upon request.

The KSM Project underwent a joint BC-Canada independent environmental assessment review as mandated by the BC Environmental Assessment Act and the Canadian Environmental Assessment Act (1992) respectively and during this review the potential impacts to environment arising from Se and other naturally occurring metals was thoroughly evaluated and assessed. The environmental assessment review process occurred over 70 months between March 2008 and December 2014 and concluded with receipt of the Federal Government's approval as signed by the Minister of Environment on December 19, 2014. The BC approval was granted on July 30, 2014 with signatures from the Minister of Energy and Mines and the Minister of Environment. Thus KSM was subject to two rigorous environment review processes, contrary to the assertion in your memo that the project was only assessed by the "non rigorous BC process".

The EA/EIS document for the KSM Project was one of the largest documents ever submitted in the Canada for assessment purposes, totaling more than 35,000 pages collated in 42 large binders. The Canadian environmental assessment review process was undertaken as a "comprehensive study" review following the completion of two rounds of public consultation requesting public

input on the type of assessment review that should be conducted (i.e. comprehensive study review or a panel review).

The Canadian Minister of the Environment, in her decision statement approving KSM, concluded *“The project is not likely to cause adverse environmental effects as defined in the former Act (referring to the Canadian Environmental Assessment Act), taking into account the implementation of mitigation measures described in the report”* and *“the mitigation measures and follow up programs described in the Report are appropriate for the project.”* This approval was granted following an independent review of the KSM’s environmental impact statement which described the potential residual effects associated with the project on all valued ecosystem components, including water quality (ie Se and other potential contaminants) and quantity. A regional cumulative effects assessment and alternative analyses were also completed, as required by CEAA. The Minister, in making her decision, relied upon an independent Canadian Environmental Assessment Agency scientific report which stated, *“the agency has concluded that no significant adverse impacts on water quality, water quantity, fish, or human health are expected on the Alaskan side of the Unuk River.”*

Alaskans were intimately involved with the KSM environmental assessment review including extensive discussions on water quality concerns especially those relating to Se, despite there being no US regulatory triggers, as Seabridge deemed it important for the Alaskans concerns to be identified. During the environmental assessment review process, Seabridge conducted more than 85 separate interactions with Alaskan State and US Federal regulators including the US EPA, Alaskan citizens and local Tribal representatives. This interaction was initiated in September 2008 and continues to this day, three years after conclusion of the environmental assessment review process. It is important to highlight that the concerns of the Alaskans associated with potential downstream risks and impacts were the same as those expressed by Canadian residents. The involvement of Alaskan regulators was documented in a 2014 *Juneau Empire* article which summarized the conclusions of these regulators, *“four of the same resource managers and specialists who reviewed Alaskan mines have examined KSM’s plan. They found no significant issues with the application.”*

With respect to Se, it is important to highlight that the BC Ministers of the Environment and Energy and Mines respectively, in making their decision to approve the KSM Project, attached a legally binding condition to the KSM Environmental Certificate which stated:

*Within one year of the issuance of an EAC, the EAC Holder must construct and operate a pilot water treatment plant (the “**Pilot Plant**”) to evaluate the feasibility of treating selenium to the concentrations assumed in the water quality predictions and effects assessment for the project. The Pilot Plant must be operated with local runoff from Mitchell Creek that has been modified to represent the range of expected water quality and conditions for seepage from the Mitchell/McTagg rock storage facility. The Pilot Plant must be operated at a sufficient flow rate to prove the feasibility of the treatment process.*

The EAC Holder must submit a report describing the results of the Pilot Plant and assessing its feasibility for the treatment requirements for the Project, to MOE, MEM and the Environmental Assessment Office (EAO) within 12 months of completion of the Pilot Plant work.

This work was completed throughout the fall of 2014 by our water treatment experts BQE Water and the results which proved the feasibility of the treatment method were submitted to the appropriate regulatory agencies including Alaskan authorities in the spring of 2015. Thus this legally binding condition has been fulfilled by Seabridge Gold.

Additionally, we wish to highlight that we have more than 10 years of baseline data on the Unuk River, data which is publicly available and has been shared with regulatory authorities, including Alaskan based agencies. From this data and other baseline work completed by Seabridge, it has been determined that the Mitchell and Sulphurets creeks are degraded naturally due to the natural erosion and leaching of the exposed KSM mineral deposits. These natural processes have resulted in elevated concentrations of Se within water, as well as other metals such as Cu and Fe effectively creating a chemical barrier to fish activity within these headwaters streams to the Unuk River. This natural degradation of water quality is also observed within the Unuk River and with the planned project mitigations, impacts to the Unuk River resulting from the development and operation of the KSM Project will not occur.

For Seabridge Gold, protection of the environment in both Canada and in the US, is a guiding principle behind the design of the KSM Project. The company has put the KSM project through extensive environmental and technical evaluations by independent experts to ensure its operation will not cause harm to the surrounding environment, including waterways and fish, and has worked closely with all stakeholders, including Alaskans, to ensure that their concerns were acknowledged and addressed throughout the environmental assessment review. We are confident in our design and the robustness of the environmental assessment review processes that were mandated by BC and Canada, respectively. Additionally, the proposed Se treatment method for KSM is now proven technology.

In closing, I would be happy to answer any questions you have about the KSM project, including our planned Se treatment, and the rigours of the independent British Columbia and the Canadian Environmental review processes. We reiterate our request for a public acknowledgement and retraction of the errors we have identified with your June 29, 2017 memo, and we strongly encourage you to fully educate yourselves with all KSM Project facts before engaging in further public dialogue regarding our project, so as to eliminate transmitting any further factual errors.

Sincerely,



R. Brent Murphy, M.Sc., P.Geo
Vice President, Environmental Affairs

RBM/....

cc. Honourable Bill Walker
Governor of the State of Alaska

Honourable Byron Mallot
Lieutenant Governor of the State of Alaska

Honourable Lisa Murkowski
Alaskan State Senator

Honourable Dan Sullivan
Alaskan State Senator

Honourable Don Young
Alaska US Congressman

Albert Kooesh
Office of the Lieutenant Governor

Kyle Moselle
Program Manager, Large Mine Permitting, State of Alaska

Heather Hardcastle
Salmon Beyond Borders

'Production and Release of Selenomethionine and Related Organic Selenium Species by Microorganisms in Natural and Industrial Waters, LeBlanc and Wallschläger, Environmental Science and Technology 2016, 50, 6164-6171.

http://www.teckelvalley.com/res/vpl/documents/_ces_portal_meta/_portal_pages/documents/news/LCO_Facility_Update_March%2031.pdf
