

SEABRIDGE GOLD

KSM PROJECT : Responsible Engagement

*Alaska Forum on the Environment,
Anchorage, Alaska. February 9, 2017*

R. Brent Murphy, Vice President, Environmental Affairs

KSM Project: British Columbia, Canada

- Located 65 km northwest of Stewart, BC; 30 km upstream of Alaska/BC border
- Corporate Headquarters- Toronto, Ont.; Community Office- Smithers, BC
- Property acquired in 2000
- Exploration initiated in 2006
 - Mitchel Deposit: 2006
 - Iron Cap Deposit: 2010
 - Deep Kerr/Lower Iron Cap: 2013
- Business strategy: to partner with a major mining company to develop the project; Seabridge will not construct the project





Environmental Assessments

KSM was evaluated by both the British Columbia Environmental Review and the Canadian Environmental Review Processes

The BC process began in March 2008

**The Canadian process began in July 2009
CEAA (1992)**

- **Almost seven years to complete**
- **More than 35,000 pages**
- **20 world-class consulting firms**
- **Hundreds of people involved in PFS and EA preparation**



Outreach and Engagement Activities

- During the environmental review process Seabridge Gold representatives conducted 130 meetings/interactions with Alaskan community members, regulators and Tribes.
- In Canada we conducted 182 meetings with community members, regulators, Treaty and First Nations.
- As a result of these meetings and feedback from all stakeholders Seabridge Gold made \$700 million dollars in design changes to the project.
 - Water management strategy for mine side, lined center pond in TMF, re-orientated discharge location of TMF and changed road access.



Alaskan Engagement

2008 - 2014: Social License – Engagement in Alaska

- Held 85 meetings with Alaskan State agencies and US Federal agencies.
- Exchanged 24 correspondences with Alaskan State agencies and US Federal agencies.
- Meetings and correspondence conducted with Alaskan State agencies and US Federal agencies including Alaska Department of Natural Resources, US Environmental Protection Agency and US Department of the Interior.
- Formed Alaska Working Group.
- Organized several site tours for working groups between 2009 and 2014.
- Invited Alaskan Tribes to the first Open House in 2011.
- Attended and presented at the Organized Village of Craig 2014 Mining Symposium on Transboundary BC Mining Projects.
- Presented at a Forum for Ketchikan Business Leaders in Prince Rupert, BC in 2013.
- Presented at Alaska Miners Association in Anchorage and Juneau in 2014.
- Met with Alaskan ENGOs including Tlingit-Haida Central Leadership Council, the Organized Village of Kasaan, the Southeast Alaska Conservation Council and Rivers Without Borders in 2013.
- Refuted the Price report with a report from Dr. Kennedy in 2011.
- Interviewed with Alaskan media, Ketchikan News, in 2014.
- Provided site tour and interviewed with Coast Alaska reporter, Ed Schoenfeld, in 2014.
- Corrected the public record in the Juneau Empire in 2013.



Alaskan/US regulators involved in reviewing the KSM Project:



Southeast Alaska Conservation Council



Alaskan Engagement – EA Involvement

- **Canadian Federal Environmental Assessment- CEAA 1992**

- Received and addressed over 400 comments related to BC-Alaska transboundary concerns during the public comment opportunity on the Environmental Impact Statement Summary portion of the EA.
- Residents of the United States, including tribal groups, raised concerns over the Project's potential transboundary impacts on fish, recreational and commercial fisheries, and human health from degraded water quality and changes in water quantity in the Unuk River.
- Key issues that were raised included potential impacts on fish and fisheries (recreational and commercial), and human health from degraded water quality and changes in water quantity in the Unuk River.

The CEA Agency, in collaboration with federal departments, identified and assessed the potential adverse environmental impacts of the Project on the basis of: [...] **comments from United States federal and Alaska state-agencies and proponent responses to the comments**

- **British Columbia Environmental Assessment – BC EAA**

- Late in the Application review stage, concerns were raised by Alaskan commercial and sport fishing groups, businesses, communities, tribes, conservation groups and individuals. Concerns were centered on potential effects to salmon and the significant commercial, sport and customary and traditional fisheries the Unuk River supports, as well as potential impacts to Alaskan seafood and tourism marketing efforts....
- The State of Alaska was concerned about the potential elimination of fish habitat in BC watersheds that drain to Alaska, and the impact downstream to Alaskan fishery resources and water quality.

Alaskan Engagement: Results

CEAA Comprehensive Study Report:

“The agency is satisfied that identified mitigation measures for the project would address potential impacts in Alaska on fish; recreational and commercial fisheries and human health from changes to water quality and quantity in the Unuk River.”

Moreover, the CEAA Report states:

“The participating US federal and state agencies did not identify any outstanding transboundary concerns with the EA.”



Representative from Alaska Department of Natural Resources:

“Four of the same resource managers and specialists who review Alaskan mines have examined KSM’s plan. They found no significant issues with the application.” – Juneau Empire, April 11th, 2014

Treaty and First Nations Support

July 2013: Gitxsan First Nation submitted a letter of support:

“...we have found them (Seabridge Gold) to be open, honest and transparent. It is clear to us Seabridge is committed to the community, to First Nations and to Gitxsan people.”



Treaty and First Nations Support

July 2013: Entered into a Benefits Agreement with the **Nisga'a Nation** including their support of the Project

June 2014: Signed agreement with **Gitanyow Nation**



*NISGA'A NATION AND SEABRIDGE GOLD CONFIRM
AGREEMENT IN PRINCIPLE ON KEY ELEMENTS OF KSM
BENEFITS AGREEMENT
August 2013*

"Seabridge has demonstrated a real willingness to assist the Nisga'a Nation in creating genuine economic opportunities for, and building the capacity of, Nisga'a citizens, [and] we look forward to continuing our participation in the environmental assessment process for the KSM Project."

- Mitchell Stevens, President of the Nisga'a Nation

KSM Community Support



PO Box 875, 1027 Aldous Street, Smithers, BC V0J 2N0
Telephone (250) 847-1600 - Fax (250) 847-1601 - www.smithers.ca

RECEIVED

SEP 19 2013

CEAA - PYR

September 11, 2013

FILE: 5280-18

Mr. Chris Hamilton
Executive Project Assessment Director
Environmental Assessment Office
PO Box 9426 Stn Prov Govt
Victoria, BC V8W 9V1

Mr. Garrett Cooper
Project Manager
Canadian Environmental Assessment Agency
410-710 West Georgia Street
Vancouver, BC V7Y 1C6

Dear Mr. Hamilton and Mr. Cooper:

RE: Environmental Assessment Review - Seabridge Gold KSM Project

At its Regular Meeting held September 10, 2013, Council received a letter from Seabridge Gold, informing them that the KSM Project has been formally accepted into the British Columbia Environmental Assessment Review Process.

At this time, Council provides this letter of support for the Seabridge Gold - KSM Project; provided that the following conditions are met: a) the project receives a clean bill of health during the environmental assessment review process; and 2) the project develops a satisfactory relationship with First Nations in the region.

Council believes the KSM Project will provide economic benefits to all of the northwest and First Nations communities, who will be positively impacted and stand to benefit in both the short and long term from the implementation of this project.

Yours truly,

Susan Bassett
Director of Corporate Services

SB/plg

c. R.B. Murphy, Seabridge Gold

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OFFICE OF THE MAYOR

October 31, 2013

Chris Hamilton
Project Assessment Office
Environmental Assessment Office
PO Box 9426
Stn Prov Govt
Victoria, BC V8W 9V1

Dear Mr. Hamilton:

On behalf of Council I would like to offer our support to Seabridge Gold Inc. for the Kerr-Sulphurets-Mitchell (KSM) Project.

The abundance of natural resources in the Northwest fueled our local economy for many years and made a substantial contribution to the wealth of the Province. We are always looking for opportunities to diversify our economy and promote resource industries in the Northwest. This project would provide the people of the Northwest with employment opportunities through the development of the mine, its operation, and indirect jobs through the supply chain. We would like to commend Seabridge Gold Inc. for its assurance that local and regional suppliers will have an opportunity to work with them on this exciting project and their work to engage First Nations and local communities during the environment assessment process.

Sincerely,

Dave Pemarowski
Mayor

cc: R. Brent Murphy, Seabridge Gold Inc.

3215 EBY STREET, TERRACE, B.C.
CANADA V8G 2X8
250-635-6311
FAX 250-638-4777

KERMODEI BEAR

SPIRIT BEAR

MOKSGM'OL

KERMODE BEAR

RF
03-1316
03-1321
P04-1303

Environmental Assessments

CEAA Comprehensive Study Report:

“The Agency concludes that the project is not likely to cause significant adverse environmental effects, taking into account the implementation of mitigation measures described in this comprehensive study report.”

BC Government Press Release:

“The ministers have issued the certificate with legally-enforceable conditions that have given them the confidence to conclude that the project will be constructed, operated and decommissioned in a way that ensures that no significant adverse effects are likely to occur.”

In the matter of the
ENVIRONMENTAL ASSESSMENT ACT
S.B.C. 2002, c. 43
(Act)

and

in the matter of an
Application
for an
Environmental Assessment Certificate
(Application)

by
SEABRIDGE GOLD INC.
(Proponent)

for the
KSM PROJECT

ENVIRONMENTAL ASSESSMENT CERTIFICATE # 14-01

Whereas:

A. The Proponent proposes to develop a combined open pit and underground, copper, silver and molybdenum mine described in Schedule A to this certificate (the "Project");

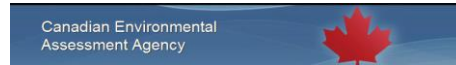
B. On April 25, 2008, a Project Lead of the Environmental Assessment Office (EAO) issued an Order under section 10(1)(c) of the Act stating that an environmental assessment certificate was required for the Project and that the Proponent could not proceed with the Project in the absence of an assessment;

C. The assessment of the Application was conducted from August 12, 2013 to June 20, 2014, and included consultations with First Nations and the public respecting the Application;

D. Compliance with this Certificate, including its conditions, will be monitored by the staff of EAO, partner agencies and others who have been authorized to inspect under the Act;

E. On June 20, 2014, pursuant to section 17 of the Act the Executive Director referred the Application, the assessment report and his recommendations to the undersigned; and

F. The undersigned have considered the Application, the assessment report and the recommendations of the Executive Director.



Environmental Assessment Decision Statement

KSM (Kerr-Sulphurets-Mitchell) Project, British Columbia

The Honourable Leona Lukko, Minister of the Environment, has reviewed the federal environmental assessment of the Kerr-Sulphurets-Mitchell Project (the Project) proposed by Seabridge Gold Inc. Pursuant to section 125 of the *Canadian Environmental Assessment Act, 2012*, the environmental assessment of this project was completed under the *Canadian Environmental Assessment Act* (the former Act). The environmental assessment was conducted in a manner that also met the environmental assessment requirements of the *Nisga'a Final Agreement*.

Taking into consideration the Comprehensive Study Report (the Report) and public comments filed pursuant to subsection 22(2) of the former Act, the Minister is of the opinion that:

- the Project is not likely to cause significant adverse environmental effects as defined in the former Act, taking into account the implementation of the mitigation measures described in the Report;
- the Project can reasonably be expected to have adverse environmental effects on residents of Nisga'a Lands, Nisga'a Lands or Nisga'a interests, but the effects are not likely to be significant with the implementation of the identified mitigation measures;
- the Project may result in both adverse and positive effects on the existing and future economic, social and cultural well-being of Nisga'a citizens; and
- the mitigation measures and follow-up program described in the Report are appropriate for the Project.

The Minister has referred the Project back to the responsible authorities, Fisheries and Oceans Canada, Natural Resources Canada and Environment Canada for appropriate action under section 37 of the former Act.

The Minister requests that the responsible authorities ensure the implementation of the mitigation measures described in the Report. The Minister also requests that the responsible authorities ensure the implementation of the follow-up program described in the Report, in order to determine the effectiveness of the measures taken to mitigate any adverse environmental effects and to verify the accuracy of the environmental assessment of the Project.

Date modified:
2014-12-19

Permitting Approvals: Concurrent with EA

2 permits	<i>Mineral Tenure Act</i>	Mining Lease 1031440 Mine Site West (6085.0 ha) and 1031441 Mine Site East (5162.0 ha)
2 permits	<i>Mines Act</i>	Mines Act Permit MX-1-571 (Mine Site) and Permit MX-1-763 (PTMA)
2 permits	<i>Forest Practices of BC Act – Road Construction</i>	Coulter Creek Access Road (CCAR) Special Use Permit S25750 and Treaty Road (TCAR) Permit S25751 for Road Construction
4 permits	<i>Forest Act – Timber Cutting</i>	CCAR Occupant Licence to Cut (OLTC) L49608, Treaty Road OLTC L49612, KSM Mine Site OLTC L49546, Processing and Tailing Management Area OLTC L49658.
1 permits	<i>Land Act – Roadway</i>	Mitchell Treaty Tunnels (MTTs) Licence of Occupation SK904033
1 permit	<i>Land Act - Transmission Line Corridor</i>	Treaty Transmission Line Licence of Occupation SK908555
3 permits	<i>Land Act - Area for Camp</i>	Eskay Camp Licence of Occupation SK908558, Unuk 7-8 Camp SK908557, Mitchell Operations Camp SK908556
2 permits	<i>Water Act and Water Protection Act</i>	Water Licence: C131291 for Camp 4: Mitchell North and C131292 for Camp 6: Treaty Saddle
1 permit	<i>Environmental Management Act</i>	EMA Effluent Discharge Permit 106814 - Mitchell Portals TWTP#6
2 permits	<i>Environmental Management Act</i>	EMA Solid Waste Discharge Permit -106834 Mine Site Landfill/Landfarm and 106835 PTMA Landfill/Landfarm
1 permit	<i>EMA, Waste Discharge Regulations</i>	EMA Air Emissions Permit: 106826 (5 large camps)
5 permits	<i>EMA, Municipal Wastewater Regulations</i>	EMA MWR Registration Letter 106841 Camp 4: Mitchell North, 106839 Camp 5: Treaty Plant, 106836 Camp 9/10: Mitchell Initial & Secondary, 106837 Camp 6: Treaty Saddle and 106809 Mitchell Operating Camp.
10 permits	<i>Drinking Water Protection Act and Regulations</i>	Water Supply Systems Construction Permit 16W-337 Ted Morris, 16W-338 Eskay Staging, 16W-339 Mitchell North, 16W-340 Treaty Plant, 16W-345 Mitchell Secondary, 16W-347, Mitchell Operations, 16W-341 Treaty Saddle, 16W-342 Unuk North, 16W-343 Unuk South, 16W-346 Treaty Marshalling Yard.

March 2015

36 provincial permits

Baseline Data Collection

60 valued components under 15 headings

1. Water quality/ quantity
2. Fish and aquatic habitat
3. Wetlands
4. Wildlife
5. Human health
6. Heritage
7. Social
8. Terrain and soils
9. Vegetation
10. Air quality and climate change
11. Visual and aesthetic resources
12. Noise
13. Land use
14. Cumulative Effects
15. Traditional Knowledge and Land Use



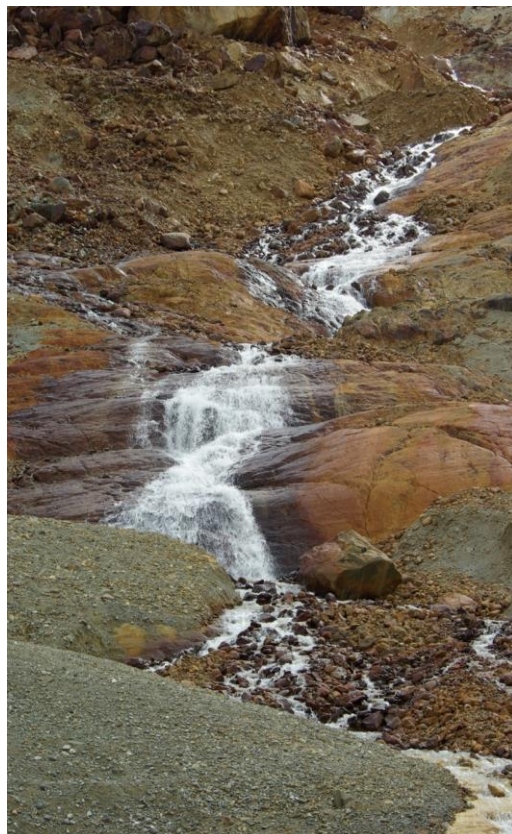
Baseline data is publicly available

EA would not have been approved without baseline

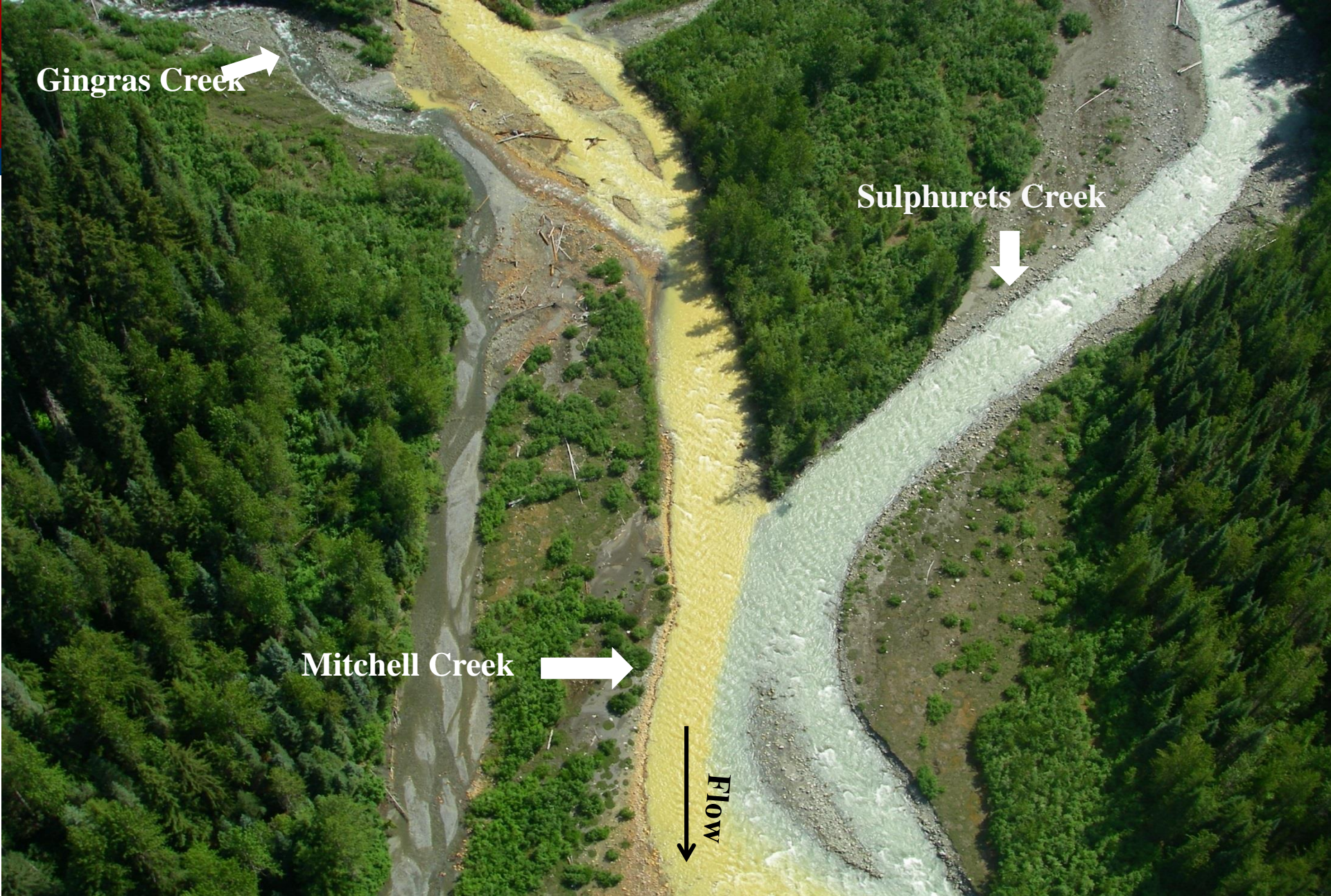
Baseline Water Quality: Unuk River

Alaskan water is naturally elevated in metals due to erosion and weathering of numerous mineralized zones

Elevated in Cu, Zn, Fe, Se, Pb







Gingras Creek

Sulphurets Creek

Mitchell Creek

FLOW



Unuk
River

Flow

Sulphurets
Creek

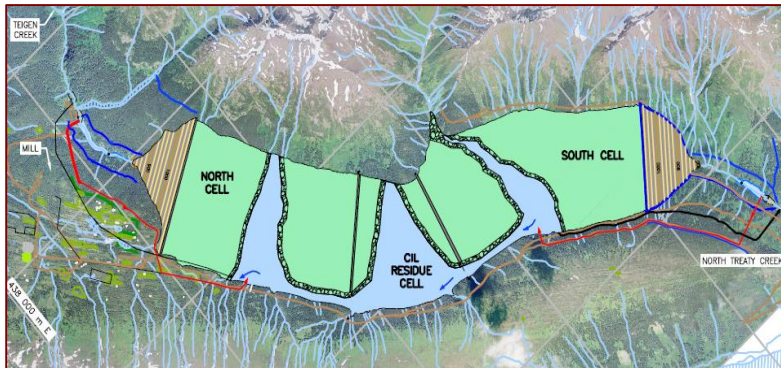
KSM Tailing Management: EA Approved Design

EA Approved Design focused on:

- Physical Stability
- Geochemical Stability

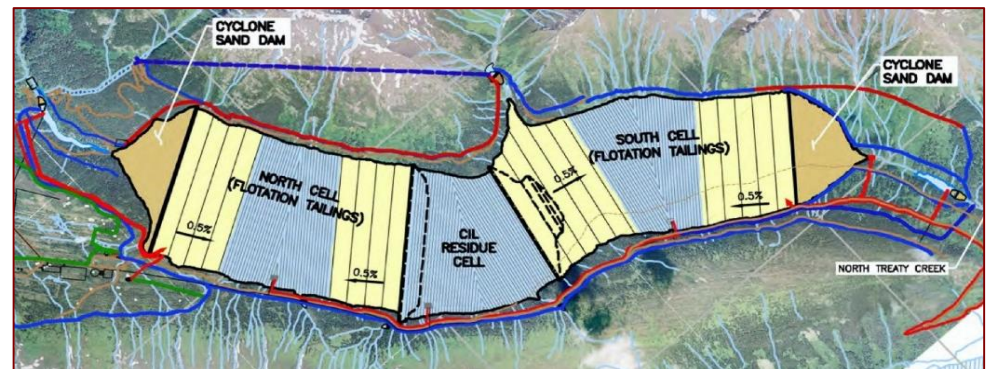
PHYSICAL STABILITY

- Good management of water to maintain beach lengths and keep ponds at a minimum
- Management of erodible slopes
- CIL Residue pond adjacent to embankment during Stage 1



GEOCHEMICAL STABILITY

- Good management of water to keep CIL Residue saturated



CLOSURE

- Water management trade-off between maintaining a small closure pond to achieve environmental objectives (e.g. geochemical stability of the CIL residue), and decreasing the closure pond volume to further minimize risk
- Management of erodible slopes with rockfill cover

KSM Tailing Management : What is the IGRB?

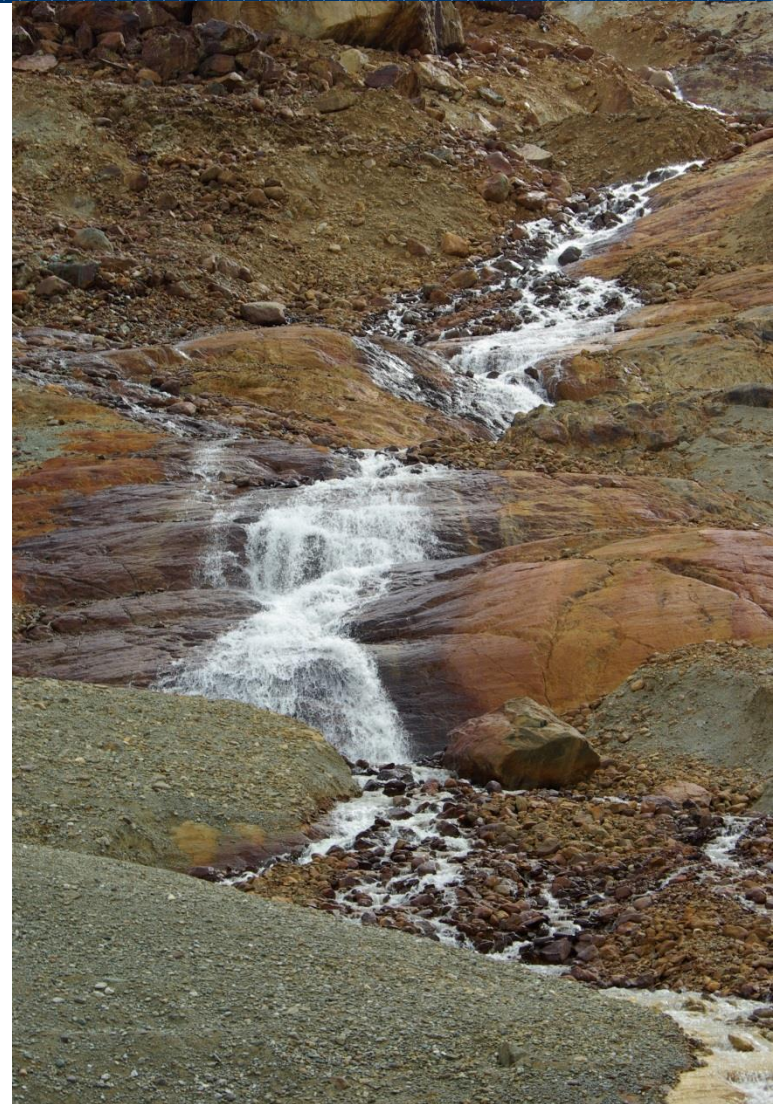
Independent Geotechnical Review Board

- Formally established in January 2015
 - Recognized social perceptions changed after Mount Polley
- **Scope:** to provide independent, expert oversight, opinion and advice to Seabridge on the design, construction, operational management and ultimate closure of the TMF and WSD



KSM Tailing Management: IGRB Meetings

- First meeting held May 2015
- First report released to stakeholders April 2016
- Second meeting held at KSM site June 2016
- Second report still in preparation
- Reports are publicly available and posted to www.ksmproject.com



KSM Tailing Management: IGRB Rpt. 1 Findings

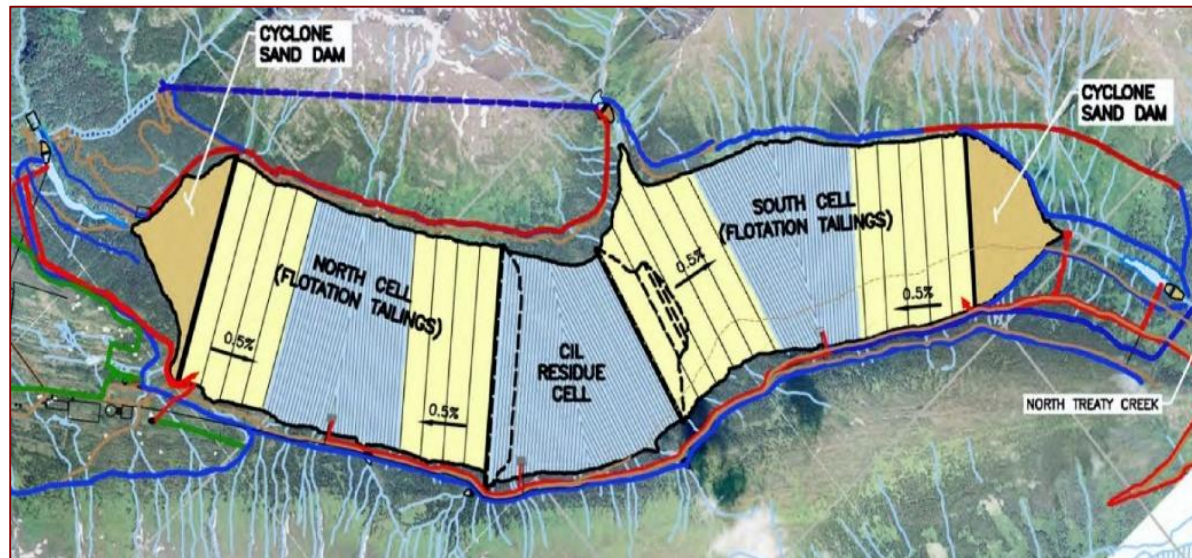
- ✓ Are the dams and major structures appropriately located?
- ✓ Are dam sections, materials, construction methods and sequencing appropriate for the site and purpose?
- ✓ What, in the opinion of the Board, are the greatest design, construction and operating risks?
- ✓ Are the facilities designed to operate effectively?
- ✓ Are the facilities designed to be safe?

KSM Tailing Management: BAT Study

- Seabridge voluntarily initiated this study in advance of the mine code review to assess tailings management strategy and keep the public trust
 - Study initiated in 2015; concluded in 2016
 - Used to find the best tailing make-up, location and style
- Best Available Technology (BAT) study:
 - Update to the 2013 Alternatives Study (part of EA)
 - Technologies, locations and management strategies
 - Minimize physical and geochemical risks over the life of the facility
 - Review the TMF in light of the Mount Polley Independent Expert Panel's BAT and BAP recommendations

KSM Tailing Management: Key BAT Study Conclusions

- Conclusion 1. Preferred TMF Site: Teigen-Treaty Site
- Conclusion 2. Filtered Tailings not Practical for the KSM Project
- Conclusion 3. Preferred Tailings Management Strategy: Teigen-Treaty Cyclone Sand TMF



KSM Tailing Management: BAP

Corporate TSF Design Responsibility

- Design for facility life (not ad hoc) and entire EA approved production plan
- Operate to honor the design
- Design takes into account site conditions
- Design basis includes items that will become Quantitative Performance Objectives (QPOs)
 - Beach length, rate of rise, water balance
- Operational responsibility – qualified person/company

Independent Tailings Review Board

- Established January 2015
- Meet at least once a year

Professional Practice and CDA Guidelines

- Extensive geological, seismic, hydrogeological and geomorphological site investigations and studies have been conducted to understand the dam foundation conditions
- Seismic and stability assessments based on the results of foundation site investigations

Closure move to Low Risk Landform

- TMF closure plan was developed based on engagement with the Working Group, which includes Aboriginal groups, municipal officials, and regulatory authorities, during the EA review

KSM Tailing Management: Dr. Dirk van Zyl's Independent Review of BAT Study

- Evaluation approach was well designed and executed.
- EA (BC process) approved shortly before Mount Polley failure, appropriate to do this BAT evaluation that provides an updated review using the new requirements of the EA Office.
- Evaluation shows using filtered tailings at KSM **is not a feasible option.**
- Confirm the Teigen-Treaty site is the **preferred option** using a much more detailed evaluation.
- Teigen-Treaty cyclone sand TMF **conforms to BAT.**
- Supports the outcome of the KCB report.

Conclusions

- **KSM underwent Canadian Federal and Provincial Environmental Assessments**
 - KSM has the support of the Canadian public and Aboriginal groups
 - Alaskans State and Federal regulators and public involved in the assessment process
 - No residual environmental effects predicted for Alaskan waters
- **KSM Tailing Management represents BAT and BAP**
- **The Project will be developed and operated responsibly**