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Richard Dwyer

Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut
X0B 1J0

June 26th, 2020

Re: Review of Revised Spill Contingency Plan for Water Licence 2BE-GEO2025, 2BE-GOO2028 and 2BE-MLL1722.

Dear Richard Dwyer, the KIA has reviewed Sabina Gold & Silver Corp.'s Revised Spill Contingency Plan for Water Licence 2BE-GEO2025, 2BE-GOO2028, and 2BE-MLL1722.

The KIA has only one comment and recommendation on the Revised Spill Contingency Plan. The comment and recommendation pertain to sections **2.4 Chemicals** and **2.5 Drilling Fluid and Cuttings** on pages 10 and 11 respectively.

Section **2.4 Chemicals** states *"Calcium Chloride is added to the fresh water to form a brine solution that acts as antifreeze when drilling in permafrost conditions. The drilling return water is reheated and reused using a mega-bag system which catches the drill cuttings as well. Salt is stored in bags with 28 sealed in a mega bag and placed on a pallet."*

Also section **2.5 Drilling Fluid and Cuttings** states *"Drilling activities make use of water to lubricate the drill and flush rock dust from the drill hole. When, drilling in permafrost on land or on ice which is frozen to the lake bottom salt may be added to the drill water to make a brine solution, thereby lowering the water's freezing point and reducing the risk of the drill freezing in. Sodium Chloride or Calcium Chloride may be used for this purpose, with a preference for the latter due to its lower environmental impact."*

"During drilling, drill water (whether freshwater or brine) is pumped down the drill hole to lubricate the drill bit and is then recirculated back up between the drill rod and the drill casing, flushing the rock dust generated during drilling with it. On return to the surface, the water is pumped to the drill settling and recirculation bin. Water is drawn off the top of this settling bin for reuse, while cuttings (the settled rock dust) are periodically drained from the bottom of the bin and transferred to a portable container which is transported to one of the Back River Project cuttings consolidation sumps for management and disposal. Alternately, these cuttings may

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be pumped directly from the drill settling bin to a nearby sump or natural depression. All sumps are to be located at least 31 m from the high water mark of any adjacent waterbody and where direct flow into a water body is not possible."

The KIA noted that there is no mention of pre-heating the fresh water prior to the addition of any salt to produce brine as a drilling fluid and lubricant, no inspection or monitoring of drill casings before or during drilling activities, and no mention of spill pads such as coco-nut fibre with absorbent materials being placed under the drilling platforms.

The KIA recommends that Sabina preheat freshwater prior to adding salt and re-heat the re-circulate drilling fluid to minimize the amount of salt and fresh water used in drilling operations. Also Calcium Chloride should be the salt used in creating brine drilling fluid.

Drill casing should be inspected prior to use to ensure that there are no cracks or damage to the casing that would result in brine leakage. There should also be active monitoring of drill casings during drilling to detect any cracking or damage and resultant leakage of drilling fluids.

Spill pads composed of coco-nut fibre with absorbent materials should also be placed under the drilling platforms to proactively contain any drilling fluid leakage that may occur.

Also in Appendix A of the Sabina Spill Response Plan, the KIA contact number for John Roesch is an old cell phone number no longer in use, this being 867-983-2458. The correct office number is 867-982-3310, extension 231.

Thank you

John Roesch

John Roesch, P.Eng.

Senior Hope Bay Project Officer
Kitikmeot Inuit Association, Department of Lands and Environment