These meeting notes attempt to provide a general summary of the meeting. Ideas expressed by participants are paraphrased and summarized; they are not reproduced verbatim.

**Date and Location:**
November 6, 2018 – 8:30 a.m. to 4 p.m.
Nunasi Building (Genesis Room)
5109 48th Street, Yellowknife, NT

**Attendees:**

<table>
<thead>
<tr>
<th>Angela Love</th>
<th>Shirly Standafer-Pfister</th>
<th>Via Teleconference:</th>
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<tr>
<td>Kierny Leach</td>
<td>Charlie Nitsiza</td>
<td>Sarah McLean</td>
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<td>Shannon Allerston</td>
<td>Violet Camsell-Blondin</td>
<td>Meagan Tobin</td>
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<td>Chris Hotson</td>
<td>Johnny Weyallon</td>
<td>Lara Fletcher</td>
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<td>Jaqueline Ho</td>
<td>Joseph Judas</td>
<td>Paul Green</td>
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<td>Heather Scott</td>
<td>Sonia Areoes</td>
<td>Eric Denholm</td>
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<td>Meghan Schnurr</td>
<td>Philippe DiPizzo</td>
<td>Sarah Elsasser</td>
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<td>Russell Wyker</td>
<td>Derek Chubb</td>
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<td>Sally Wong</td>
<td>Roberta Pedlar-Hobbs</td>
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<td>LeeAnn Malley Aileen</td>
<td>Sean Whitaker</td>
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<td>Stevens</td>
<td>Alex Hood</td>
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<td>Krista Chin</td>
<td>Michelle Peters</td>
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<td>Tracy Covey</td>
<td>Jamie VanGulck</td>
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**Introduction**

Round table introductions.

De Beers provided a summary of major events at the Snap Lake Mine from December 2015 (the announcement of Care and Maintenance) to present.

- The option to sell was not viable;
- 50,000 m$^3$/day pumping out of the underground was not feasible.
De Beers indicated that zero-occupancy at Snap Lake commenced as of September 2018. Ongoing activities include:

- Treating site water/seasonal discharge;
- Continued maintenance and monitoring of the North Pile and its associated infrastructure;
- The implementation, use and maintenance of remote monitoring technology;
- An allowance of 4-day trips for monthly site visits is planned for. The required work can be carried out in one 8-hour work day, but extra time allotted is for contingency;
- Description of piezometer and thermistor network; satellite upload capabilities; which is central to the remote monitoring program;
- The main ramp has been physically closed off. Temporary ‘plugs’ have been implemented to prevent humans and animals from entering. A final design (2 horizontal plugs) will be presented in the Final Closure and Reclamation Plan (FCRP).

**Presentation and Discussion:**

**Overall description of site.**

De Beers asked the participants to ensure that they provide all information they would like to share with De Beers by the end of the workshop.

**Site Wide 1**

- Discussion took place on the timing or staging of ‘Active Closure’ and reclamation activities. In some cases, infrastructure will need to be built before the removal of other infrastructure;
- The GNWT asked De Beers if the long-term objectives for air quality aim for background levels. De Beers stated that impact was agreed to in the zone of influence, however, once sources are eliminated background levels could be re-established. De Beers has chosen a measurable standard and quantifiable value for their criteria. It was indicated that baseline data should be available from the Environmental Assessment;
- Discussion occurred on how the North Pile will be covered, its design, and rock cover source. Discussion took place on how revegetation will be carried out on site, and length of time for revegetation;
- De Beers noted that air quality was in a safe range for human health and wildlife even during peak operations;
- De Beers stated that they are currently recalculating site-specific water quality objectives (SSWQOs) for objective SW3. Current site water discharge is approximately 200,000 m$^3$/year;
- Discussion that the Canadian Ambient Air Quality Guidelines (Canadian Council of Ministers of the Environment (CCME)) are more stringent than the proposed criteria (NWT air quality guidelines) and may be more relevant.
Site Wide 2

- Discussion on the monitoring duration of ‘3 years post-closure’
  - De Beers indicated that criteria will be met at year 3 post-closure and will request a security refund;
  - De Beers indicated that monitoring will be conducted after year 3 as well. Wording change suggestion to “at least 3 years” to indicate this monitoring duration commitment;
  - 3 years of data required before the Engineer of Record inspects and approves (i.e. Criteria met);
  - Wording change suggestion: 3 years following ‘decommissioning’ rather than 3 years following ‘post-closure’;
- Wording change suggestion: “…for recommendation of the Engineer of Record’;
- De Beers noted that the site has LiDAR; 1m accuracy and can zoom into small infrastructure;
- Discussion on contingency component in the RECLAIM model, and uncertainty in long-term relinquishment.

Site Wide 3

- Nitrate and TSS parameters require Effluent Quality Criteria (EQC);
- De Beers explained that the Water Quality Objectives (WQO) are being updated (lowering) consistent with Board guidance and some discussion took place on these updates;
- De Beers was questioned on which parameters of the criteria will be site-specific or follow CCME guidelines. Suggestion for De Beers to include a table with parameters, its value, and indicate if it is site specific or CCME in the FCRP;
- De Beers was questioned if it anticipates water quality to change in Snap Lake, and associated timelines for changes. What will Snap Lake look like in the future?
- Comments on criteria that is for “in-lake”, but not specific to runoff and seepage as indicated in the objective. De Beers outlined that all run off and seepage from the North Pile will report to the passive wetland treatment system. All other site run off is not of concern and therefore does not have associated criteria. (No PAG rock or ARD concerns at site);
- De Beers indicated that an EQC report is forthcoming with the FCRP in January or February of 2019;
  - De Beers is designing to a 200m mixing zone for passive treatment and discharge (main basin and northwest arm of Snap Lake); both “passive mixing zones” have been modelled. Discussion on including mixing zone in criteria for clarification;
  - Existing SNP network description/summary provided by De Beers;
  - Discussion that criteria is focused on safe for “aquatic life”, question on safety for other receptors e.g. human, wildlife. De Beers indicated that Human health and environmental risk assessment to come with FCRP; North Pile is frozen – heat is not being added. Modelling has taken into account frozen and unfrozen scenarios to be conservative.
Site Wide 4
- Similar discussion to Site Wide 2.

Site Wide 5
- De Beers indicated that the plan for the final topography at Inland Lake 6 (IL6) / sump 5 area, which has a 30-40 ft height and 1:1 grade slope, is to remain as is; De Beers shared the opinion that blasting to create a more gradual slope would be a greater environmental impact than leaving the steeper slope;
- Concerns were raised on whether this 1:1 grade slope would be a hazard for wildlife – specifically caribou;
- Comment that terms like ‘where possible’ should have additional information and rationale written into the criteria otherwise it is difficult to ensure the criteria has been adequately met.

Site Wide 6
- De Beers will create a 3:1 slope wherever possible and grade to historical natural topography where possible;
- Discussion on the Caribou range plan, the zone of influence, and De Beers’ view on the range plan;
- De Beers was questioned on how it will monitor caribou and other wildlife for safe passage and use (to meet objective SW6). De Beers indicated that there will be no monitoring of wildlife and that monitoring information will be located in the as-built documentation;
- Discussion on caribou disturbance features and management considerations;
- Similar discussions as in Site Wide 5.

Site Wide 7
- Comments on criteria reading like an activity, and ‘successful’ in the criteria could be clarified with % of cover, species composition, and time frame (or measurable components associated with the criteria);
- Defined “priority areas” as: the mine building and main laydown area;
- Main area: all infrastructure locations;
- De Beers is not planning to revegetate the rock pile (North Pile);
- De Beers is not planning to revegetate the haul roads;
- More defined criteria will be presented in the FCRP (Species composition etc. a defined end point).

Infrastructure 1
- Discussion on managing hydrocarbon contamination on site. Waste Management Plan will be updated to include how soils will be remediated;
- Discussion on Canada-wide standard for Petroleum Hydrocarbons in Soil.
North Pile 1

- Discussion on Geotechnical stability vs. Geochemical stability. De Beers views this objective as a Geotechnical/physical stability objective only. Reviewers commented that this Objective should also have chemical stability criteria;
- Detailed design, feasibility, and performance design will be submitted with the FCRP;
- The GNWT commented that there could be a reporting component added to the criteria to increase transparency for reviewers to check in and ensure the Engineer of Record’s criteria are met and everything is functioning as designed. Even a reference to technical memos or documents containing these Engineering Criteria would be useful;
- Other reviewer comments requesting that the criteria to be used by the Engineer of Record to assess physical stability should be outlined in the FCRP.

North Pile 2

- Similar to North Pile 1 (NP). GNWT suggests that criteria should be the same as for NP 1;
- De Beers outlined and described how they are designing water management for site in closure: site water (seepage and runoff) is to passively flow via spillways from the North Pile to wetlands for passive treatment. The wetlands will be a permanent feature (i.e. no plans to decommission) and could be needed to function for decades. They are currently at the feasibility phase of design;
- De Beers noted that timing for the inspection period will be included in the FCRP and therefore the criteria for this objective has not yet been finalized.

Infrastructure 2

- Reviewers have similar concerns with these criteria as for the North Pile 1 criteria. Criteria being used by the Engineer of Record to assess physical stability should be outlined in the FCRP for transparency purposes;
- De Beers noted that timing for the criteria will be presented in the FCRP.

Infrastructure 3

- De Beers clarified that the year published of the guideline was not included in case the guideline is updated in the future.

Underground 1

- Brine injection to the underground is to continue until use of the Reverse Osmosis (RO) treatment plant concludes;
- De Beers indicated that although they do not plan to continue the disposal of brine underground once passive treatment is commissioned, there is not expected to be limits on the number of years brine could be pumped underground.
- Reviewers commented that there should still be criteria proposed, even though flooding of the underground has already occurred, to prove that no impacts to aquatic habitat and community in source lakes has or will occur.
Underground 2

- De Beers was questioned on its plans and timeline to inject brine to the underground;
- Criteria for this objective have not yet been finalized and will be submitted in the FCRP;
- Discussion that criteria should be a measurable water quality standard. Comments from reviewers that even though the underground mine has been flooded and potential contaminant sources were removed, water quality should be monitored and compared with water quality standards in order to meet closure objective.

Underground 3

- Further discussion on using actual water quality data/values as criteria.