KIA-NWB-1: Sabina provided Memorandum "Back River –Water Management Infrastructure Design; Primary Pond – Slope Stability Analysis", dated November 29, 2022

[KIA] The document indicates that the stability criteria are met.

[Sabina] Sabina thanks the KIA for the comments and additional review.

KIA-NWB-2: Sabina provided Technical Memorandum "Primary Pond Dam – Thermal Modeling Overview:, dated November 29, 2022

[KIA] The document indicates that thermal design criteria are met.

The thermal design report provides guidance on how to reduce uncertainty related to water seepage, which could include the installation of thermosyphons within the key trench. This option is repeated in Sabina's response to KIA-NWB-2, but the original design does not show any thermosyphons nor that measures would be included that would late allow to install thermosyphon evaporator pipes in the future.

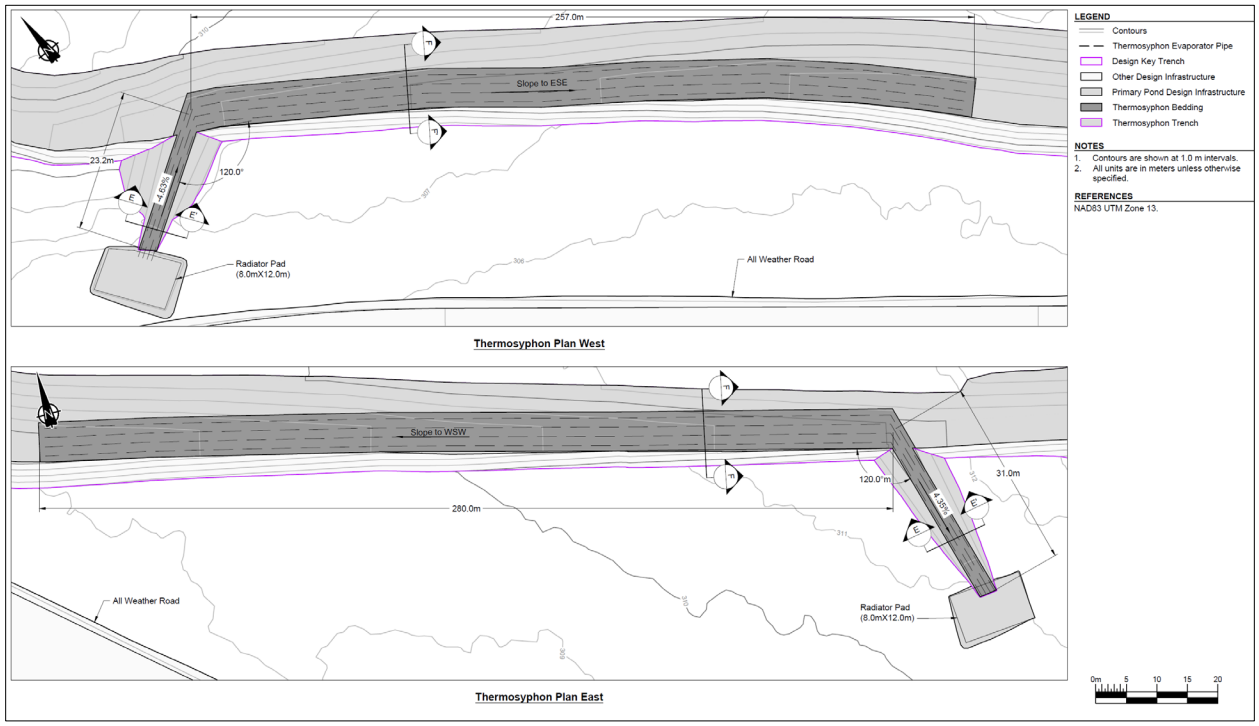
[Sabina] Sabina thanks the KIA for the comments and additional review.

In regards to the uncertainly around the water seepage at locations where the liner is keyed into permafrost soils, Sabina has further consulted SRK Consulting (Canada) Inc. and revisited the potential risks. Sabina have decided to adopt a conservative and proactive approach and are actively working towards integration of a thermosyphon system at two locations where the dam key trench is constructed on permafrost soil. Sabina has engaged SRK who is now working with Arctic Foundations Canada to determine what can be installed within the 2023 construction season.

As the Primary Pond design are not reliant on the installation of these thermosyphons, and as the thermosyphon installation would be an additional proactive and conservative measures, the Primary Pond design should be evaluated based on the current and provided information. The thermosyphons go beyond the minimum design requirements.

The technical specifications documents and the design drawings will be 'living' documents that will be updated throughout the construction by the design Engineer, in consultation with Sabina. In short the design will be updated to 'best fit' to the encountered field conditions; while still upholding the minimum design criteria and submitted design intent. No substantial deviation from what has been provided and presented for the Primary Pond design is expected at this time. All 'as-constructed' details will be document and submitted as part of the final as-built report; to be submitted 90 days after the completion of construction.

At this time the first approach that is being advanced is to install the thermosyphon evaporator pipes within the Primary Pond key trench. Only the evaporator pipes would be installed during the winter construction season. These pipes would be welded, and leak tested. At a later date (post May 2023), the radiators could then be installed onto the end of these evaporator pipes and the system charged with the two-phase working fluid. These evaporator pipes would be installed within the existing key trench design. The only modification to the presented key trench design would be the addition of finer crush (bedding) fill material around the thermosyphon evaporator pipes. Figure 1 below show an example layout of how the horizontal thermosyphons could be installed within the current key trench design.



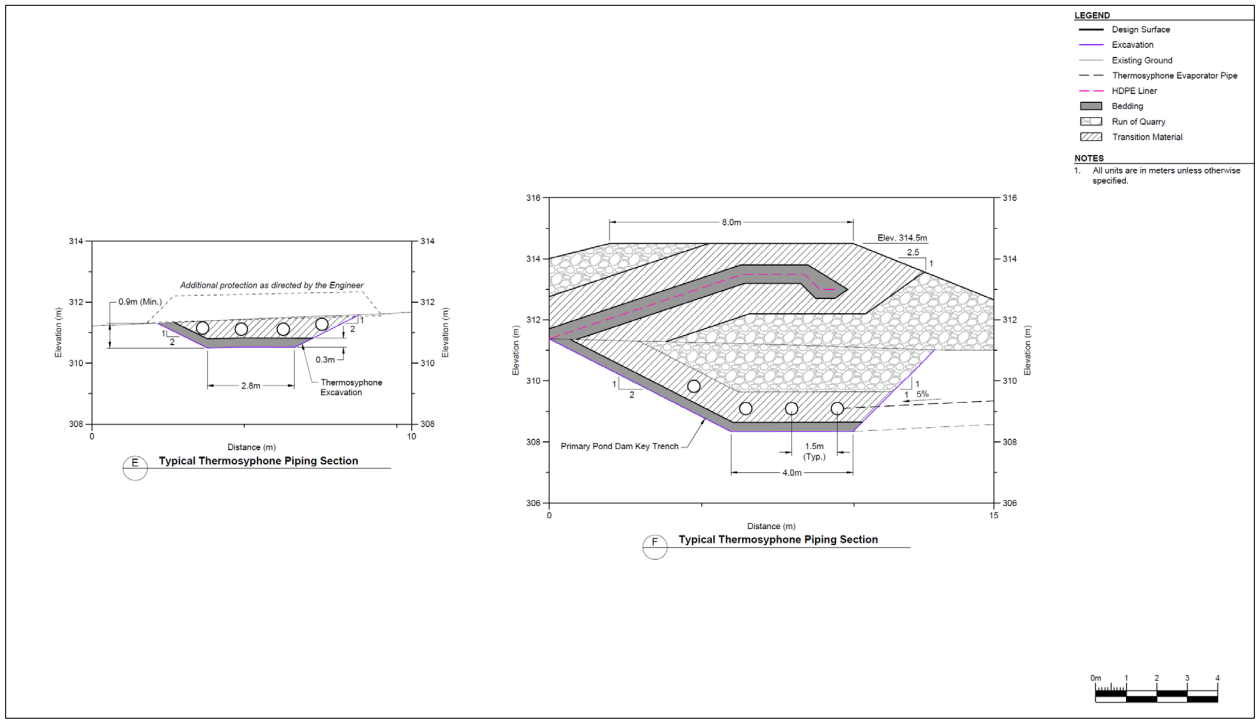


Figure 1: Example layout for thermosyphon evaporator pipes to be installed the key trench

If the procurement of material, and / or the timing and availability of crews to install the evaporator piping do not work out (as is a limited and constrained winter construction window), Sabina would advance a secondary option to install thermosyphons at the upstream dam toe (Figure 2). This would be a shallow approximately 2m deep trench excavated at the upstream dam toe (i.e. to a depth below the

active layer in this area) that the thermosyphons would then be installed within. Following the installation of these upstream thermosyphons, the evaporators pipes would be covered with a minimum of 1.5m to 2m thickness of thermal fill, which would also act to help stretch out seepage pathways on the upstream. This would be like the scenario that was assessed and presented at the end of the SRK thermal design memorandum, as shown in Figure 2.

A section on the installation of horizontal thermosyphons has also been added to the updated Technical Specifications.

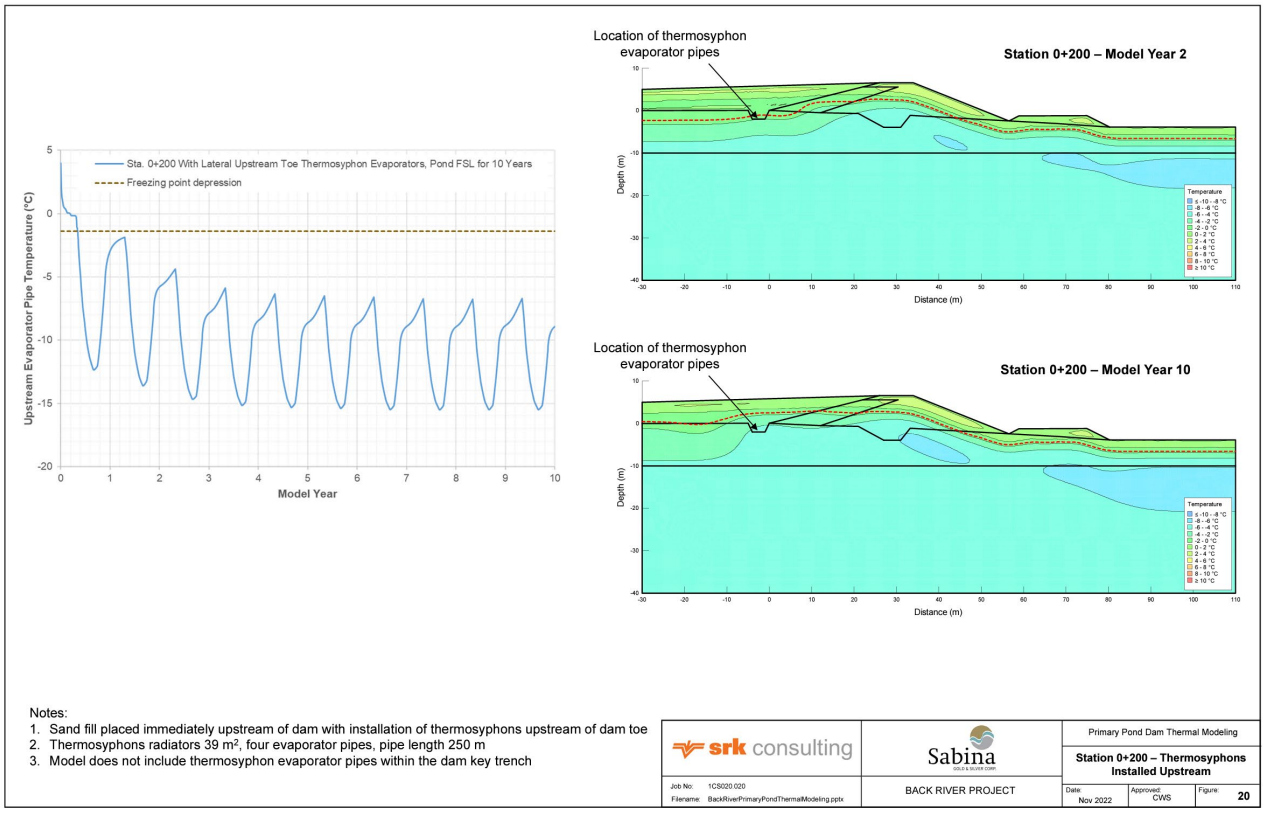


Figure 2: Upstream thermosyphon modeled for the Primary Pond Dam (SRK 2022).

KIA-NWB-3: Sabina provided additional climate information as part of the document "Back River: Updated Feasibility Study – Hydrology Update", dated July 16, 2021.

[KIA] It's worth noting that Section 5.2 of this report indicates that: "Hydrologic variables presented herein are appropriate for Feasibility level designs and costing, but should be reviewed and validated with additional site data in advance of Detailed Engineering." With the Primary Pond dam report being a detailed design report, an update to the climate assessment may be required.

[Sabina] Sabina has discussed this with SRK and they are comfortable using the information provided in the 2021 "Back River: Updated Feasibility Study – Hydrology Update" for the current and presented Primary Pond design.

A conservatively sized spillway, larger than what is required by the design hydrotechnical calculations alone, has also been included in the design to provide further mitigation for the design. This spillway (emergency overflow channel), as per design, would never be planned to be actively used and therefore would only be triggered if very large storm events, exact storm dependent on the operating level at the time, were to result on site. Each year an operational level would be set for the Primary Pond structure, that would be below the spillway invert / inlet elevation. This will allow for additional capacity and ultimately for an inflow design flood to be accommodated on site. This approach will allow Sabina the flexibility to increase the inflow design flood event during operation if / as required to reduce the downstream risk.

To put this into perspective, looking at just the design event for the Primary Pond catchment (a 100 year 24hr total rainfall and snowmelt volume for a catchment area of around 0.74 km^2) a storage volume of approximately 49,800m^3 would be required for this event pond. The Primary Pond has been optimized, based on the topography at this location, to maximize the volume that is available. This was done to assist with the site water management and initial lake dewatering activities (as discussed further in Sabina's site water management plans and water and load balance updates). The total storage volume of the Primary Pond is over 400,000m^3 so there is notable additional capacity available that could accommodate any potential future changes to the design event volumes (assuming climate change calculations and predictions change over time). This noted, the climate change assessment is not planned to be updated now but would be revised and likely updated post construction to help set the operational water level for the Primary Pond. As discussed above, the operational levels in the Primary Pond would be revisited on an annual basis and described as part of the annual geotechnical inspection reporting.

KIA-NWB-4 to KIA-NWB-11 –

[KIA] the KIA comments all are outlined as "OK, technical specifications will be updated" or "OK, design drawings will be updated" or "OK, drawings and technical specifications will be updated".

[Sabina]

Attached please find an updated version of the Technical Specifications and an updated set of drawings

DRAWINGS

For the drawings, additional details have been provided to show what the 'minimum winter construction' surfaces would look like. This includes the excavation and backfilling of the Primary Pond key trench as well as a minimum protective thermal fill over the key trench sections. Additional notes or clarifications have also been added to drawings UM-PP-105, 200 to 212 (inclusive), 214 and 401.

TECHNICAL SPECIFICATIONS:

Updated have been made to the technical specifications document. The areas that were updated specifically based on the KIA and CIRNAC comments were:

KIA/CIRNAC Comment ID	Technical Specification Section that Addresses the Comment
KIA-NWB-1	No additional update to tech specs
KIA-NWB-2	No additional update to tech specs. See additional context in responses above.

KIA/CIRNAC Comment ID	Technical Specification Section that Addresses the Comment
KIA-NWB-3	No additional update to tech specs. See additional context in responses above.
KIA-NWB-4	See Section 1.1.13
KIA-NWB-5	See Sections 3.1.4, 6.2.3 and 6.4. Changes have been made through document regarding the use of terminology.
KIA-NWB-6	See Sections 3.1.4 and 6.2.3
KIA-NWB-7	See Section 9 and UP-PP-105 in Design Drawings
KIA-NWB-8	See Section 7
KIA-NWB-9	See Sections 5.2.6, 5.3, 5.4, 6.2.9, 6.3, and 6.4
KIA-NWB-10	See Section 7.3.3
KIA-NWB-11	See Section 5.2.2, 5.3, and 5.4
KIA-NWB-12	No additional update to tech specs
KIA-NWB-13	No additional update to tech specs
KIA-NWB-14	See Section 8
KIA-NWB-15	No additional update to tech specs
KIA-NWB-16	See Sections 5.2.7, 5.3, 5.4, 6.2.10, 6.3, and 6.4
CIRNAC-NWB-1	No additional update to tech specs
CIRNAC-NWB-2	No additional update to tech specs
CIRNAC-NWB-3	No additional update to tech specs
CIRNAC-NWB-4	No additional update to tech specs
CIRNAC-NWB-5	No additional update to tech specs
CIRNAC-NWB-6	No additional update to tech specs
CIRNAC-NWB-7	No additional update to tech specs
CIRNAC-NWB-8	No additional update to tech specs
CIRNAC-NWB-9	No additional update to tech specs

KIA/CIRNAC Comment ID	Technical Specification Section that Addresses the Comment
ECCC-NWB-1	No additional update to tech specs

The technical specifications for horizontal thermosyphons has been added to this document. As noted above this will be a 'live' document that will be updated and adjusted as the project construction progresses. All updates will be documented in the as-built reporting package (to be submitted within 90 days of the completion of construction).