SRK Consulting (Canada) Inc.
2200–1066 West Hastings Street
Vancouver, BC V6E 3X2

T: +1.604.681.4196
F: +1.604.687.5532

vancouver@srk.com
www.srk.com

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Project No: 1CT022.028

Vice President Environmental Affairs
TMAC Resources Inc.
Suite 1010 – 95 Wellington Street West
Toronto, Ontario, M5J 2N7

Attention: Oliver Curran, MSc, Vice President Environmental Affairs

Dear Oliver:

RE: Doris Project 2018 Annual Geotechnical Inspection

TMAC Resources Inc. contracted SRK Consulting (Canada) Inc. to conduct a geotechnical site inspection on their Doris Project in Nunavut. Project construction started in 2007 but was suspended periodically as the project went through two ownership transitions. Mill commissioning started January 2017 and commercial production commenced mid-2017. The second mill module was brought online in fall 2018, bringing the mill capacity to the permitted design capacity.

This geotechnical inspection is an annual requirement in response to Part J, Items 16 and 17 of TMAC's Water Licence 2AM-DOH1323 - Amendment #1, issued by the Nunavut Water Board (NWB) on November 4, 2016. The objective of the geotechnical inspection is to ensure that the project's surface infrastructure is performing as intended from a geotechnical perspective and in the context of the project site, the emphasis is to a large extent ensuring permafrost integrity.

Following the 2015 annual geotechnical inspection (AGI), SRK recommended that TMAC adopt a Surface Infrastructure Geotechnical Monitoring Program (SIGMP), followed by an annual audit style geotechnical inspection as documented in the 2016 AGI report. In 2018, TMAC decided to revert to the pre-2016 approach of a comprehensive AGI carried out by a third-party specialist.

The 2018 geotechnical site inspection was carried out by Principal Consultant Maritz Rykaart, PhD, PEng between August 2 - 7. The inspection included a comprehensive drive and walkover over the entire Doris site, followed by a helicopter aerial reconnaissance. In addition, the 10 km all-weather road (AWR) to the former Windy camp, and the Secondary Road from the Doris camp to the Tailings Impoundment Area (*aka* Tail Lake Access Road) was conducted via truck, with frequent stops for physical inspections at key areas. TMAC's Environmental Supervisor Kyle Conway accompanied Maritz during much of the walkover and drive, as well as during the aerial reconnaissance, which included a fly-over of the remediated Patch

Lake drill shop area. Weather conditions during the inspection ranged from overcast and raining, to clear and sunny. Maritz is intimately familiar with the project site as he was the primary design engineer of all surface infrastructure and is the Engineer-of-Record for the Doris Tailings Impoundment Area (TIA) containment dams.

In addition to the physical inspections, whilst on-site, discussions were held with on-site TMAC staff to gather supplementary information pertaining to the inspection. On the last day of the inspection, a meeting with many of TMAC's operational and environmental staff was facilitated to present the preliminary findings of the inspection and discuss the recommendations described in this letter.

AGI's of the Project have been carried out since 2009. All these inspections were carried out by SRK, and the reports are filed on the Nunavut Water Board (NWB) public registry. This letter presents the findings of the 2018 AGI, which includes the 10 km all-weather road linking Doris camp with the former Windy camp and the former Patch Lake drill shop area (only inspected aerially). This inspection report however, excludes the Doris TIA, which is reported on separately.

Generally, the 2018 geotechnical inspection suggests that conditions, as it pertains to geotechnical performance of surface infrastructure, are essentially unchanged from what was observed in 2017. Specific items of note, that fall outside of routine maintenance activities, and require action by TMAC include:

- As stipulated in inspection reports since 2015, TMAC should complete at least four annual surveys (May, June, August and September) of the two survey monuments on Pad B. The timing of these surveys corresponds to the periods when thaw starts, and up to the time when the active layer thickness is at its greatest. This facility is founded on overburden which is known to contain massive ice and the surveys are intended to provide an early warning of changing conditions. A failure in this area would put safety and operations at high risk and therefore this matter requires immediate attention;
- During the 2016 inspection a small depression was observed along the south-east abutment of the Doris bridge. In that report, SRK provided a comprehensive description of ground conditions in the area, as well as a review of thermal data and potential geotechnical risk factors. Subsequently, SRK recommended that TMAC maintain a close watch on the depression. Both the 2017 and 2018 inspections by SRK suggest no appreciable change, and a review of the ground temperature cable (GTC) data at that location confirms that there are no anomalous data suggesting any undue warming trend. It would therefore appear as if this depression is not linked to thermal erosion, but as a precautionary measure this should continue to be closely monitored at least until the 2019 AGI before drawing a definitive conclusion;
- The repairs and upgrades detailed for Sump #1 and Sump #2, first reported in the 2016 inspection report have not been carried out. This needs to be addressed as a matter of priority as the extent of thermal erosion is continuously expanding. In addition, it appears as if some surface flow may be bypassing Sump #1. TMAC should conduct surface water quality sampling downstream of Sump #1 to confirm whether water is in fact bypassing Sump #1 and if so, installation of an additional sump should be investigated;

- The Pollution Control Pond (PCP) appears to be functioning well as evidenced through the inspection, as well as a review of two of the three GTCs installed to track whether the keyed-in liner for the PCP remains in contact with permafrost. One of the GTCs, SRK-12-GTC-DH02 has no data recorded since March 2018 and TMAC staff has noted that the GTC is not functional; the cause for this instrument failure needs to be investigated. Notwithstanding, the apparent good performance of the PCP, as noted during the 2017 AGI, the pond base is very undulated because of surficial permafrost melt, and as a result there are multiple small ponded areas that prevents complete drainage of the pond. These depressions have become larger since 2017 and will continue to grow and therefore, should be carefully filled-in using unfrozen overburden salvaged from the overburden pile. In doing so, ongoing permafrost degradation will be minimized and thus prolong the life of the PCP;

- A general cleanup of the Sedimentation Pond is required to remove rocks and gravel on the liner as the liner may be damaged. Specifically, the excavation in the surface gravel along the south-west corner of the Sedimentation Pond that was created due to some maintenance since the 2017 AGI must be filled, and the transition with the pond liner be reinstated in accordance with the original design;

- Rock spalling on the vent raise and 7.5 ML tank farm high walls has historically been raised as a concern for personnel safety. In 2017 SRK recommended that TMAC should consider a permanent solution such as covering these high walls with mesh (issue for construction designs for this do exist) or impose an annual preventative scaling campaign. At a minimum, it was recommended that TMAC post signage warning people to avoid these areas, or if they must enter the danger zone, they should be made aware of the nature of the hazard. None of the recommendations has been acted on, and based on the 2018 AGI observations the hazard remain unchanged;

- SRK observed some damage to gravel layer (over-liner) protecting the liner at the 7.5 ML tank farm. These are small sloughing failures around areas of localized excavation near buried grounding cables. These damaged areas need to be filled in and compacted to prevent progressive failures from occurring, possibly exposing the liner. It was also noted that some over-liner damage was incurred because of vehicle traffic, especially wheel travel along the slopes. TMAC should limit vehicle travel at the tank farm secondary containment, and when vehicle travel is required operators should be instructed to take special precautions to prevent over-liner damage. Finally, when damage is observed it needs to be repaired;

- A large tension crack about 15 m long was noted along the upstream slope of the Doris Camp Diversion, extending approximately 2 m onto the diversion thermal protection berm. This tension crack is likely as a result of thermal erosion. TMAC should monitor this area and if localized ponding develops, some remedial action may be required;

  Inspection of the Windy All-Weather Road bridges again revealed loose bolts on the safety railings. In addition, inspection of the arch culvert crossing revealed many loose bolts on the underside of the arch culvert at the plate joints. TMAC should implement an annual maintenance procedure to inspect the bridges and arch culvert, including the integrity of all bolts;

- There is extensive ponding at the south abutment of the double bridge along the Windy All-Weather Road. This ponding is markedly more noticeable than during the 2017 AGI. The ponding is starting to

cause some slope instability along the south bridge abutment. A review of the GTC at this location does not suggest any anomalous thermal erosion at this point; however, TMAC should fill in this depression as soon as practical with clean unfrozen overburden material. The material needs to be placed in thin (0.15 m) lifts and compacted. Equipment access in this area will be limited and therefore manual labour using walk-behind tampers may be the only practical way to complete this work;

- TMAC installed fuel bladders in the Roberts Bay 20 ML Tank Farm to accommodate additional temporary fuel storage. The bladders are however installed in an area below the southern high wall where rock spalling has occurred as evidenced by rocks contained within the tank farm secondary containment. TMAC needs to take special precautions to monitor for rock falls in this area as these rocks may damage the bladders. Additional permanent mesh rockfall protection may have to be considered if bladder fuel storage is going to be a long-term storage solution;

- Snow removal equipment has resulted in undercutting and over-steepening of the northern internal slope of the Roberts Bay 20 ML secondary containment. This slope needs to be repaired by reinstating the original design slope. The over-steepened state of this slope may result in a complete sloughing failure of the over-liner material exposing the liner. In addition, TMAC must develop and implement improved operating practices for snow removal in this facility to prevent this type of damage from occurring;

- There is a large tension crack on the Windy All-Weather road immediately adjacent to the exploration trench near old Windy Camp. The crack was reasonably fresh at the time of the 2018 AGI and extended approximately 2 m onto the road crest and was approximately 10 m in length. This tension crack is likely caused by thermal erosion due to the ponded water from the exploration trench immediately adjacent to the road shoulder. This is not a frequently travelled area, and the road integrity is likely not at risk; however, as a precautionary measure TMAC should place a warning sign and inspect the area at least monthly during the summer and again from spring onwards, to look for signs that the tension crack may widen potentially endangering traffic;

- The core storage area on Quarry D consist of oversize quarry rock and overburden. The 2018 AGI revealed many small to medium sized sinkholes on the pad, as well as significant instability and sloughing failures along the pad shoulder. These failures are all associated with unconsolidated material placement on the pad. Massive failure of the pad is not considered a risk, but there is risk of injury to people working on the pad and risk of equipment damage, especially when working near the edges. TMAC should make people working in the area aware of the risks and ensure that appropriate reconnaissance is carried out ahead of time to develop a safe work plan; and

- The waste rock pile on Pad T is over-steepened and appears to exceed its maximum design height. TMAC need to either assume the original waste rock pile design criteria by reshaping the existing waste rock pile, or complete new stability analysis to ensure that the waste rock dump as constructed meets the required stability factors of safety.

In addition to the specific observations and recommendations mentioned above, SRK would like to point out a few overarching design and operating principles as it relates to geotechnical, specifically permafrost integrity at the project site:

- SRK would like to remind TMAC that care needs to be taken when constructing permanently heated buildings on the rockfill camp pads. Prolonged heat generated from these buildings will result in the active layer below the pad deepening which in turn could lead to degradation of the underlying permafrost which will manifest as undue settlement. Detailed thermal analysis has been carried out for the project site, which provides guidance on what extent of prolonged heat may cause problems. These analyses also contain appropriate design mitigation measures to prevent onset of permafrost degradation. TMAC should ensure that they consult this reference material when designing and erecting new buildings on the project site;

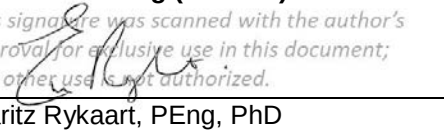
- All pads and roads at the project site is specifically intended to minimize permafrost damage. As a result, they are designed with specific thermal criteria in mind. Underbuilding of roads and pads will result in permafrost damage, because of thermal erosion which will require ongoing maintenance and expensive remediation costs at closure. TMAC is reminded to consult the appropriate site-specific reference materials when designing and constructing new pads and roads;

- Pipelines are placed directly on the ground throughout the site. Generally, this means that pipelines are placed directly onto the rockfill pads, on road shoulders or directly onto the tundra. This has always been considered an acceptable practice, provided pipelines placed directly onto the tundra was not uninsulated heated lines. SRK however noted some thermal damage to the tundra at the Doris TIA because of the uninsulated PCP discharge pipeline upstream of the Doris Reclaim Pump Station. A depression has developed where the pipeline was placed which in turn is acting as a preferred flow path for overland runoff. As a result, SRK would recommend that TMAC review all pipeline routes placed directly on the tundra, and where possible relocate them to road or pad shoulders; and

- TMAC is reminded that the maximum active layer thickness occurs in August at the end of the summer season. All road and pad shoulders are at their most vulnerable during this period as the thermal protection at these shoulders are less that the minimum required resulting in localized deepening of the active layer. As a result, tension cracks and general softening of the shoulders are most prevalent and TMAC should take special precautions to limit vehicle traffic within 1 m from all shoulders.

Notwithstanding the observations and recommendations provided in this AGI, the project site is in good shape, and there are no items that are critical in nature. TMAC should however embank on a more intentional approach to addressing some of the recurring items mentioned. For ease of reference, a summary table of all recommendations is provided in Attachment 1.

Sincerely,
SRK Consulting (Canada) Inc.



Maritz Rykaart, PEng, PhD
Principal Consultant

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The opinions expressed in this report have been based on the information available to SRK at the time of preparation. SRK has exercised all due care in reviewing information supplied by others for use on this project. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information, except to the extent that SRK was hired to verify the data.

Attachment 1: Summary Table of Recommendations

Summary of Recommendations – Doris Project 2018 Annual Geotechnical Inspection

Observation	Recommendation
TMAC did not conduct surveys of survey monuments on Pad B. Carried over since 2015 AGI report.	Complete at least four surveys annually of the two survey monuments on Pad B. These are to be done in May, June, August and September, which corresponds to the periods when thaw starts, and up to the time when the active layer thickness is at its greatest.
During the 2016 inspection a small depression was observed along the south-east abutment of the Doris bridge.	Continue to monitor if there is any indication of the depression increasing in size. Should any change be noted a geotechnical engineer should be consulted to further investigate the cause, and appropriate remedial measures need to be implemented.
Repairs and upgrades for Sump #1 and Sump #2, first reported in the 2016 inspection report have not been completed.	This work needs to be addressed as a matter of priority as the extent of permafrost degradation is increasing rapidly.
Pollution Control Pond (PCP) ground temperature cable (GTC) not working.	SRK-12-GTC-DH02 has no data recorded since March 2018 and TMAC staff has noted that the GTC is not functional. The cause for this instrument failure needs to be investigated.
As noted during the 2017 AGI, the PCP base is very undulated because of surficial permafrost melt, and as a result there are multiple small ponded areas that prevent complete drainage of the pond.	These depressions should be carefully filled in using unfrozen overburden salvaged from the overburden pile. In doing so, ongoing permafrost degradation will be minimized prolonging the life of the PCP.
Rocks and gravel observed on the Sedimentation Pond liner.	A general cleanup of the Sedimentation Pond is required to remove rocks and gravel on the liner as the liner may be damaged. Specifically, the excavation in the surface gravel along the south-west corner of the Sedimentation Pond must be filled, and the transition with the pond liner be reinstated in accordance with the original design.
Rock spalling on the vent raise and 7.5 ML tank farm high walls has previously been raised as a concern for personnel safety. SRK noted during the 2017 and 2018 inspection that a substantial number of rocks have fallen from these walls. This poses a safety hazard to personnel working in these areas.	Since limited access prohibits construction of a simple catch-berm to retain falling rocks, consider a permanent solution such as covering these high walls with mesh or imposing an annual preventative scaling campaign. However, until such time, post signage warning people to avoid these areas, or if they must enter the danger zone, they should be made aware of the nature of the hazard.
Damage to the gravel layer (over-liner) protecting the liner in the 7.5 ML tank farm secondary containment.	Damaged areas need to be filled in and compacted to prevent progressive failures from occurring, possibly exposing the liner. Limit vehicle travel in the tank farm secondary containment, and when vehicle travel is required operators should be instructed to take special precautions to prevent over-liner damage. When damage is observed it needs to be repaired.
Large tension crack about 15 m long along the upstream slope of the Doris Camp Diversion, extending approximately 2 m onto the diversion thermal protection berm.	Monitor this area and if localized ponding develops some remedial action may be required.
Loose bolts on the safety railings and the arch culvert of the Windy All-Weather Road bridges.	Implement an annual maintenance procedure to inspect the bridges and arch culvert, including the integrity of all bolts.
Extensive ponding at the south abutment of the double bridge along the Windy All-Weather Road. Become more significant compared to 2017.	Fill in this depression as soon as practical with clean unfrozen overburden material. The material needs to be placed in thin (0.15 m) lifts and compacted. Equipment access in this area will be limited and therefore manual labour using walk-behind tampers may be the only practical way to complete this work.

Observation	Recommendation
Snow removal equipment has resulted in undercutting and over-steepening of the northern internal slope of the Roberts Bay 20 ML secondary containment.	This slope needs to be repaired by reinstating the original design slope. Develop and implement improved operating practices for snow removal in this facility to prevent this type of damage from occurring.
A large tension crack on the Windy All-Weather road immediately adjacent to the exploration trench near old Windy Camp.	Place a warning sign and inspect the area at least monthly during the summer and again spring onwards, to look for signs that the tension crack may widen potentially endangering traffic.
Many small to medium sized sinkholes on the pad, as well as significant instability and sloughing failures along the pad shoulder at the core storage area on Quarry D.	Make people working in the area aware of the risks and ensure that appropriate reconnaissance is carried out ahead of time to develop a safe work plan.
The waste rock pile on Pad T is over-steepened and appears to exceed its maximum design height.	Assume the original waste rock pile design criteria by reshaping the existing waste rock pile, or complete new stability analysis to ensure that the waste rock dump as constructed meets the required stability factors of safety.