Health Canada Santé Canada

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Keith Morrison
Technical Advisor II, Monitoring Officer
Nunvut Impact Review Board
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Sent by email to: info@nirb.ca

Subject: Health Canada's review of TMAC's 2018 Annual Report for monitoring of the Doris North Mine and Phase 2 Hope Bay Belt Project (NU)

Dear Mr. Morrison:

Health Canada received the Nunavut Impact Review Board's (NIRB) notification letter dated May 23, 2019 and email received May 27, 2019 requesting parties to comment on the TMAC Resources Inc. (TMAC) 2018 Annual Monitoring Report for the Doris North Mine and the Phase 2 Hope Bay Belt Project.

Health Canada (HC) has reviewed information in the annual report as it pertains to air quality monitoring and have focused our comments on the Hope Bay Air Quality Management Plan (AQMP), dated April 2019.

From HC's previous review of the Final Environmental Impact Statement (FEIS) for the Phase 2 Hope Bay Belt Project, and presentation to the NIRB in May 2018, we indicated that the project is causing exceedances of NO_2 and PM_{10}, both of which are non-threshold contaminants. There is the potential for health effects from any increase in concentration from non-threshold contaminants, thus specific mitigation measures should be provided and implemented in order to reduce non-threshold contaminants. HC noted that the FEIS lacked the criteria and thresholds for determining when continuous monitoring, and additional dust suppression activities should be implemented.

Regarding monitoring and dust suppression, HC recommended the inclusion of additional mitigation measures which can help reduce the air pollutant emissions from the project. Specifically, HC recommended the provision of criteria for:

a) *Decision on when to upgrade to continuous monitoring of criteria air contaminants (such as particulate matter).*

b) *Thresholds that will determine when increased dust suppression activities will be implemented.*

HC is supportive of the new measure that will see continuous monitoring (of suspended particulates) implemented in 2019. The 2018 AQMP report indicates (in Section 3.2) that there will be continuous monitoring of TSP and $PM_{2.5}$ but that PM_{10} monitoring will be discontinued, with the following rationale provided:

> *Given the typically low measured PM_{10} concentrations observed to date, the continued monitoring of TSP, and that the GN does not have a guideline for PM_{10} (the limit utilized is a British Columbia standard), TMAC's continuous particulate monitoring program will consist of TSP and $PM_{2.5}$ – the parameters with GN criteria – and PM_{10} monitoring will be discontinued in 2019.*

Health Canada advises that PM_{10} is a better indicator for monitoring the potential impact to human health due to air quality degradation associated with project developments. TSP (total suspended particulates) is not a relevant indicator for human health. TSP provides a picture of overall air quality, whereas PM_{10} (and $PM_{2.5}$) indicates more specifically the presence of particles that could negatively impact human health.

HC Recommendation 1:

- That both PM_{10} and $PM_{2.5}$ are included as continuous monitoring of particulate in the AQMP; or
- That a thorough rationale, including data, be provided to support discontinuing PM_{10} monitoring

Including both PM_{10} and $PM_{2.5}$ in the suspended particulate monitoring program would help address public concern about changes in air quality that may affect human health and the environment. It will reduce uncertainty, and could help the proponent to demonstrate project-only effects for the cumulative effects assessment for the region. HC guidance suggests that an air quality monitoring plan include NO_2, $PM_{2.5}$, PM_{10}, and O_3 as they are non-threshold contaminants, and that health effects may occur at any level of exposure, not just at high concentrations.

The AQMP report indicates monitoring results will be reported every 6 months to determine if objectives are being met.

HC Recommendation 2:

- Provide the levels at which risk management action is triggered/initiated.
- Explain what actions will be taken when exceedances of airborne dust occurs from operations, rather than relying on subjective visual observations of dust emissions.
- Incorporate additional adaptive management steps into the mitigation and management actions that will ensure a timely response to reduce potential impacts to human health.

As quantitative data become available in future annual reports, Health Canada is available to review and provide comments to verify that the potential impacts on human health (air quality, human health risk assessment, drinking water quality, and noise) are not of higher concern than what was predicted in the environmental assessment.

We hope this information may assist the NIRB in consideration of actions that may be taken to mitigate or prevent potential effects of the Project on human health.

Should you have any questions, please contact the undersigned.

Sincerely,

Sandra Slogan

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