



JAY PROJECT

Air Quality, Waste Rock and Other Matters

EA1314--01

**INDEPENDENT ENVIRONMENTAL
MONITORING AGENCY**



SEPTEMBER 14, 2015

OUTLINE

- Background on the Independent Environmental Monitoring Agency (IEMA or the “Agency”)
- Air Quality and Dust
- Waste Rock and Seepage Management (includes mercury in lake sediment)
- Other Matters



BACKGROUND ON IEMA

- Environmental “watchdog” under 1997 legally-binding Environmental Agreement for the Ekati Mine
- Mandate to provide advice to the company and regulators, and to participate as an intervenor
- Involved in the Jay Project environmental assessment from the beginning

AIR QUALITY AND DUST

■ ISSUE

- Developer is to quantify the accumulation of emissions in the environment and show how they will comply with national standards and minimize emissions and impacts to the environment.

■ DEVELOPER'S CONCLUSIONS

- Effects to air quality were classified as not significant



AIR QUALITY AND DUST

■ AGENCY' S CONCLUSIONS

- Main concern is with dust impacts, mitigation, monitoring and management
- Dust as a possible driver for Zone of Influence for caribou avoidance of Ekati Mine
- Given the importance of the Jay Project area for caribou, air emissions are likely to cause a significant impact

AIR QUALITY AND DUST

■ EVIDENCE AND RATIONALE

- Developer predicts exceedances of NO₂, PM_{2.5}, and TSP (above GNWT Ambient Air Quality Standards)
- Agency recognizes significant improvements in air quality monitoring and management at Ekati and efforts to engage parties
- No threshold triggers or response actions for dustfall, snow and lichen (longer term trends)
- No specific thresholds or triggers for dust mitigation

AIR QUALITY AND DUST

■ EVIDENCE AND RATIONALE

- No proposed sampling or monitoring sites on the north or east side of Lac du Sauvage, or on the esker system near Jay
- Concern that there are no enforceable air quality standards in the NWT
- No evidence suggesting cooperation with Diavik on regional air quality monitoring and management

AIR QUALITY AND DUST

- **AGENCY RECOMMENDATIONS**
- **Suggestion:** GNWT should develop an appropriate and enforceable regulatory framework and system for air quality in the NWT as soon as possible.
- **Suggestion:** DDEC, in collaboration with GNWT and other interested parties including DDMI, should develop a regional approach to air quality monitoring, management and mitigation.

AIR QUALITY AND DUST

- **AGENCY RECOMMENDATIONS**
- **Measure:** Develop a revised Air Quality and Emission Monitoring and Management Plan collaboratively before construction commences including:
 - Specific triggers for NO_2 , $\text{PM}_{2.5}$ and TSP that will result in adaptive management actions and responses;
 - A plan and timetable to develop thresholds and actions in relation to dustfall, snow and lichen sampling results;

AIR QUALITY AND DUST

■ AGENCY RECOMMENDATIONS

■ **Measure:** (continued)

- Plans to manage road traffic to reduce fugitive dust including triggers when dust suppressant must be re-applied;
- Monitoring and sampling sites to capture dust, and sample snow and lichen on the northern and eastern shores of Lac du Sauvage and along the esker system; and
- Quality assurance and quality control protocols to ensure data reliability.

WASTE ROCK AND SEEPAGE MANAGEMENT

(includes Mercury in Sediments)

■ ISSUE

- TOR require Developer to “predict the likelihood and consequences of...acid rock drainage” and “proactively manage against developing adverse impacts”
- Lakebed sediments from Lac du Sauvage are potentially high in mercury and will be placed in the Jay WRSA.

WASTE ROCK AND SEEPAGE MANAGEMENT

(includes Mercury in Sediments)

■ AGENCY'S CONCLUSIONS

- Additional monitoring and adaptive management of the Jay WRSA is needed in order to prevent a significant adverse impact to water quality

■ DEVELOPER'S CONCLUSIONS

- Predicted seepage and runoff from Jay WRSA will not cause adverse effects to aquatic life or prevent the use of the water as a drinking source

WASTE ROCK AND SEEPAGE MANAGEMENT

(includes Mercury in Sediments)

■ EVIDENCE AND RATIONALE

- Lakebed sediments within the proposed dyke area are relatively high in mercury
- DDEC prediction: average Hg concentration in Jay WRSA seepage is approx. same as CCME WQ Guideline for Protection of Aquatic Life. Predicted maximum conc. exceeds Guideline by 50%
- Co-disposal of potentially acid generating rock with granite has not been used before at Ekati

WASTE ROCK AND SEEPAGE MANAGEMENT

(includes Mercury in Sediments)

■ EVIDENCE AND RATIONALE

- Limited setback of 30m on drainage into LdS
- DDEC proposes to monitor seepage only
- No thermal monitoring of WRSA until mining is finished
- No adaptive management (triggers and action levels) in conceptual WROS Management Plan
- Three-year reporting cycle may not provide enough lead time if problems are detected

WASTE ROCK AND SEEPAGE MANAGEMENT

(includes Mercury in Sediments)

- **AGENCY RECOMMENDATIONS**
- **Measure:** Revised Waste Rock and Ore Storage Management Plan to be submitted within one year of overburden stripping operations to include:
 - Relevant information on the design, construction monitoring and management of the Jay WRSA facility, including details on plans to encapsulate lakebed sediments within the WRSA;
 - Justification and rationale for proposed setbacks from water bodies;

WASTE ROCK AND SEEPAGE MANAGEMENT

(includes Mercury in Sediments)

- **Measure:** (continued)

- A comprehensive WRSA monitoring system (e.g. thermal monitoring, internal water sampling) to provide early indicators on performance;
- Adaptive management with triggers and action levels that lead to responses to prevent or manage Acid Rock Drainage; and
- Annual reporting of monitoring results including any trigger exceedances and reporting of longer term of trends.

OTHER MATTERS

■ PROCESS OBSERVATIONS

- Efficient and effective process to date
- Adequacy Review an improvement over Conformity Check
- Good engagement by Developer
- Significant progress on a number of management plans that needed updating
- No participant funding provided to communities or Aboriginal governments

OTHER MATTERS

- **PROCESS OBSERVATIONS**
- **Suggestion:** Canada and GNWT investigate and publicly report on the establishment of permanent participant funding for environmental assessments held under Part V of the *MVRMA* within one year of the acceptance of the Report of Environmental Assessment.

OTHER MATTERS

■ FOLLOW-UP

- Significant adverse impacts can be prevented with adoption of Measures and collaborative follow-up actions
- **Measure:** DDEC and other parties report annually on progress made on the Measures, suggestions and commitments recorded in the Report of Environmental Assessment for the Jay Project

THANK YOU



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