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Baffinland Iron Mines (BIM) Early Revenue Program (ERP) – Qikiqtani Inuit Association (QIA) Terrestrial Comments and BIM Response

Teleconference

November 20, 2013

10:00 am – 12:50 pm (PST)

Present: Oliver Curran (BIM), Erik Madsen (BIM), Mike Setterington (EDI), Anne MacLeod (EDI), Kelsey Russell (EDI), Kim Poole (terrestrial advisor to the QIA)

Overview:

The teleconference meeting was held to discuss the QIA's technical review submission on BIM's addendum to the final environmental impact assessment for the Mary River Project, specifically to address BIM's response to Technical Comments B1 – B5. The following sections outline the key points and action items from this discussion.

Technical Comment B1 — Barrier effect of the Tote Road on caribou movement:

- Regarding the QIA's request that BIM re-evaluate the impact of increased traffic on caribou movement across the Tote Road — The original assessment in the FEIS was based on a high level of potential disturbance. For the Tote Road, this was based on the traffic levels that were expected to be present during the construction period. BIM acknowledges that the proposed ERP would increase the traffic levels above those that were previously expected for construction and that this could result in an increase in the barrier effect of the Tote Road.
- The ERP submission presented a value as an indicator of the potential physical barrier presented by passing traffic (i.e. the proportion of a 24 hour day in which traffic would physically block caribou from crossing the road). The assessment did not attempt to quantify the semi-permeability of the road as a result of behavioral responses to increased traffic (i.e. deflection rates, length of time that caribou would hesitate to cross the road following truck passage etc.). Behavioral responses are extremely variable and there is little information available that would assist in quantifying the increased behavioral response as a result of increasing the number of truck passes to 200 per day. BIM feels that the assessment on reduced habitat effectiveness within the zone of influence was a quantifiable indicator of the effect of the road and traffic on caribou, presuming that caribou will still be able to cross the road and use adjacent habitats.

- Rather than re-quantifying an unpredictable effect of traffic levels on caribou crossing a road, BIM suggests that the best way to address the potential behavioral responses given this uncertainty is through mitigation and monitoring to observe and quantify the effect (which is essentially the behavioural response), and then determine if additional mitigation, outside of that presented in the caribou decision tree, may be necessary to reduce an effect.
- Several mitigation measures and monitoring plans were developed for the Tote Road; however, these were not clearly outlined in the ERP submission. Additional mitigation and monitoring actions were presented to the Terrestrial Environment Working Group (TEWG), and the changes are being made to the Terrestrial Ecosystem Mitigation and Management Plan (TEMMP) that has been revised since submission of the ERP.
- Action Items:
    - The Terrestrial Environment Mitigation and Monitoring Plan (TEMMP) will be updated/enhanced for the final Project submission to include the mitigation and monitoring plans that are in place for the Tote Road and any relevant triggers for these programs. This will include the Caribou Decision Tree, reporting and monitoring (including behavioural responses to traffic and the road) related to the Caribou Decision Tree, mitigation for known caribou crossing locations, remote-camera monitoring of crossing locations, snow track monitoring, and snow bank management, among others, as well as an explanation for why dash-mounted cameras are not being considered at this point.

<u>Technical Comment B2 — Effects of increased traffic along the Tote Road on caribou calving:</u>

- Regarding the QIA's request that BIM re-evaluate the impact of increased traffic on caribou calving — The original assessment in the FEIS included a 14 km zone of influence around the Tote Road to account for impacts to caribou, including during the calving season. This was considered to be the worst case scenario. There is no reason to believe that the increased traffic levels would result in the zone of influence increasing beyond 14 km. Multipliers of habitat reduction were increased in the ERP from what was used in the FEIS to account for further reduced habitat effectiveness as illustrated in ERP Table 6-5.1 and Figure 6-5.2. Based on this assessment, as well as the results of the caribou energetics modelling, no significant population level effects are expected.
- As described under B1, several mitigation measures and monitoring plans were developed for the Tote Road; however, these were not clearly outlined in the ERP submission. These include height of land surveys along the Tote Road during the calving season. Additional mitigation and monitoring is possible based on observational data the Terrestrial Environment Working Group (TEWG).
- Action Items:
    - The TEMMP will be updated/enhanced to include the mitigation and monitoring plans that are in place for the Tote Road during calving, these include height of land surveys, local environmental monitors, and traffic guidelines if calving caribou are observed along the Tote Road.

Technical Comment B3 — Effects of increased traffic along the Tote Road on caribou mortality:

- Regarding the QIA's request that BIM re-evaluate the impact of increased traffic on caribou mortality, the original assessment in the FEIS was based on the traffic levels that were expected to be present during the construction period. BIM acknowledges that the increased traffic levels in the proposed ERP increase the mortality risk on caribou over what was assessed in the FEIS; however, BIM believes that the potential for caribou mortality along the Tote Road is limited and can be managed through increased mitigation and monitoring along the road.
- Mortality thresholds, and several mitigation measures and monitoring plans for the Tote Road were developed; however, these were not clearly outlined in the ERP submission. These mitigation and monitoring activities were discussed within the Terrestrial Environment Working Group (TEWG).
- Action Items:
    - The TEMMP will be updated/enhanced for the final Project submission to include the mortality thresholds, mitigation and monitoring plans that are in place for the Tote Road. Mitigation measures include the Caribou Decision Tree, radio communication among drivers, and reporting requirement, among others.

Technical Comment B4 — Effects of increased traffic along the Tote Road on dust levels, vegetation and caribou:

- Discussion about potential forms of dust control including DL-10, EK-35, and calcium chloride. Dust control is not just an environmental concern, but also a safety concern for travel along the road and human health effects.
- A dust monitoring program along the road was started this past summer — includes monitoring stations at 30 m, 100 m, 1 km, 5 km and reference sites along the road. Snow sampling will be conducted in spring 2014. Samples collected on a monthly basis and sent to lab for analysis. Analysis will be conducted on this year's data to determine if current program is sufficient to detect dustfall or if additional stations are needed. Monthly trends will inform dust management. ERP will not be in full operation until 2015 — some time to look at the results that come from the dustfall monitoring program to determine if mitigation is required and if so, where and how to suppress.
- Action Items:
    - The TEMMP will be updated/enhanced to include details on the dustfall monitoring program, and dustfall levels that will trigger additional mitigation – this will be relayed to the Road Management Plan as required.
    - Analysis will be conducted to determine if current sampling program is sufficient.
    - Discussion with air quality team to determine the best thresholds for dustfall (considering both environmental and health and safety concerns).

Technical Comment B5 — Effects of increased traffic along the Tote Road on cumulative effects:

- The cumulative effects assessment presented in the FEIS was based on a caribou energetics model that looked at a variety of scenarios, including worst case scenarios which were expected to be

beyond the bounds of any expected response. The model did not assume a particular level of traffic but was based on a range of responses to disturbance.

- Note: In reviewing the energetics model since the conference call, EDI has found that the 5 scenarios may not be entirely applicable to the ERP and the combination of the ERP and the approved Project. Therefore, the energetics model will be revised to ensure that the combined project effects are assessed with realistic scenarios of caribou within the Project's Zone of Influence.

- Action Items:

    - The energetic model will be revised (finalized January 13, 2013) with combined project effects (approved Project and ERP) and realistic scenarios of caribou within the Project's Zone of Influence.

Follow-up on QIA's suggested new Project Conditions – Refer to BIM's NIRB response. The Project conditions as suggested are more effectively addressed within the technical review and decision making within the Terrestrial Ecosystem Working Group, within which the QIA participates.