

Dominion Diamond Corporation

Developer's Assessment
Report – Public Hearings,
September 15, 2015

Caribou and Wildlife



Overview

- Additional Information provided after April 2015 Technical Sessions
- Intervener Technical Report recommendations summarized and organized into 8 Themes
- Dominion Diamond's response to Intervener recommendations

Traditional Knowledge

- Jay Project and cumulative effects assessment for caribou and other wildlife valued components were assessed using an ecologically relevant and conservative approach, which also integrated Traditional Knowledge (TK)
- TK was used to inform the assessment through:
 - the selection of valued components and assessment endpoints
 - the identification of effects pathways and mitigation
 - importance of the Narrows and Lac du Sauvage esker to caribou migratory movements
 - selection of the Jay Road route
 - caribou populations increase and decrease through time
 - fire and climate change influence caribou abundance and distribution
 - caribou are arriving on the wintering grounds later in the year
- Dominion Diamond has and will continue to engage with communities on caribou and wildlife mitigation and monitoring and provide opportunities to integrate TK into all phases of the Jay Project

Conceptual Caribou and Wildlife Monitoring Plans

Additional Information

- Since April Technical Sessions, Dominion Diamond submitted a revised Wildlife Effects Monitoring Plan (WEMP) to public record June 1, 2015. The WEMP includes an Appendix containing the revised Caribou Road Mitigation Plan (CRMP).
- A workshop for the CRMP was held on May 22, 2015. Another workshop was conducted on June 25, 2015 to get input into the WEMP and a revised version of the CRMP.
- The workshops provided an opportunity for important input from communities, government, technical specialists, and the Independent Environmental Monitoring Agency.
- Dominion Diamond provided multiple CRMP and WEMP revisions based on workshop input
 - CRMP (two workshops, two revisions)
 - WEMP (one workshop, one revision)
- Most recent versions submitted on July 31, 2015.
- WEMP will evolve as a result of input from future engagement activities.

Recommendation: Wildlife Plan Documents

Recommendation (GNWT-8a):

- DDEC provide more detailed procedures for key mitigations and monitoring including: road surveys, how collaring information will be used, deterrence procedures, and wildlife encounters/ incidents.

Response:

- Dominion Diamond agrees and has incorporated more details on mitigation and monitoring with respect to road surveys, collar data, deterrence procedures and incidents in Sections 4.2 to 4.5 and Section 5.6.4 of the WEMP, and Section 5 of the CRMP. Appendix E (Standard Operating Procedures and Datasheets) will be included in the WEMP upon approval of the Project.

Recommendation (GNWT-8b):

- DDEC revise the objectives of the document to provide a clearer framework for the contents of the plan.

Response:

- Dominion Diamond agrees and the objectives have been revised and clarified in Table 1.4-1 of the WEMP.

Recommendation : Wildlife Plan Documents cont'd

Recommendation (GNWT-8c):

- DDEC further develop the concordance table (Section 1.5) to link specific sections of the document with the various mandates and jurisdiction of the regulatory agencies.

Response:

- Dominion Diamond agrees and the concordance table has been completed to show linkages among mandates of regulatory agencies and sections in the WEMP.

Recommendation (GNWT-8d):

- DDEC revise the WEMP to include monitoring to address the prediction that the Jay Project will not affect the size and magnitude of the area of caribou avoidance in accordance with the recommendations of the Zone of Influence Technical Task Group, including methods for measuring the Zone of Influence and potential alternate activities.

Response:

- Dominion Diamond agrees and monitoring to address the zone of influence is explained in Section 5.6.5 of the WEMP.

Recommendation : Wildlife Plan Documents cont'd

Recommendation (GNWT-8e):

- DDEC revise the WEMP to provide clearer objectives for the camera monitoring, including supporting methodology, and a section on “Past Scope and Improvements”.

Response:

- Dominion Diamond agrees and monitoring objectives, past scope and improvements are provided for all components of the WEMP. Specifically, camera monitoring objectives, past scope and improvements, and methods are provided in WEMP Section 5.6.7.

Recommendation (GNWT-8f):

- DDEC develop a reliable way to monitor traffic levels and further detail on the approach to monitoring traffic levels be provided in the WEMP, and that traffic modification mitigations linked to those levels be stated (e.g. use of convoys).

Response:

- The CRMP was developed to address recommendations in response to engagement with all parties.
- Dominion Diamond agrees with the recommendation and is currently developing a system to collect data on heavy haul traffic along the Misery and Jay roads. The CRMP, which is part of the WEMP, has several triggers and action levels for mitigating traffic effects to caribou and other wildlife.

Recommendation: Wildlife Plan Documents cont'd

Recommendation (GNWT-8g):

- DDEC revise the WEMP to provide more details on procedures for monitoring approaching caribou, including road monitoring and use of collar data, and that they devise and include a method for monitoring approaching caribou at intermediate distances.

Response:

- Dominion Diamond agrees and Sections 5.6.3 and 5.6.4 of the WEMP have been revised to provide more details on procedures for monitoring approaching caribou.

Recommendation: Wildlife Plan Documents cont'd

Recommendation (GNWT-8h):

- DDEC revise the WEMP to include further detail regarding when and how mitigations for reducing the barrier effect of the road are applied for wildlife VCs other than caribou

Response:

- The key objective of the CRMP is to avoid and minimize changes in migratory movements, energetics (reproduction), and connectivity of the herd, which could otherwise result in significant effects to the population.
- Barrier effects were not identified as generating a significant risk to other wildlife populations.
- The primary effective mitigation action for limiting road effects that are currently in place at Ekati is stopping vehicles and giving all wildlife the right of way when they are approaching or on roads.
- Posting signs and reducing speed limits in areas where wildlife are known to be denning or frequently using has also been implemented at the Ekati Mine.
- No revisions to the WEMP are required to incorporate additional mitigation for barrier effects to other wildlife.

Recommendation: Wildlife Plan Documents cont'd

Recommendation (GNWT-8i):

- DDEC revise the WEMP to ensure that appropriate action levels (whether quantitative or qualitative) with associated actions are applied wherever possible to support adaptive approaches to managing impacts to wildlife.

Response

- Dominion Diamond agrees and the July 31, 2015 revisions to the WEMP address this recommendation. No further additions are required to incorporate additional action levels for adaptive management.
- Adaptive management in mitigation and monitoring has been implemented at the Ekati Mine since 1997.
- Appendix C of the WEMP provides a summary of the changes to monitoring from 1997 to 2014.
- Appendix D identifies the hierarchical levels of mitigation actions that have been applied at the Ekati Mine and will be extended to the Project to avoid and limit effects to caribou and wildlife from primary and secondary pathways.
- Feedback on the effectiveness of mitigation and monitoring for the application of adaptive management in the operations of the Ekati Mine and Jay Project is a key element of the WEMP (Sections 2.2 and 4.5), and will continue to evolve into closure and reclamation of the Mine.

Recommendation: Migratory Birds and Species at Risk

Recommendation:

- The effectiveness of proposed mitigation will need to be monitored to trigger an adaptive management response and inform future fish-outs (EC-4).
- Implement mitigation to avoid disturbance and incidental take of migratory birds (EC-5)
- Monitor bird use of mine-altered waterbodies (EC-6).
- Monitoring, mitigate and report impacts to species at risk (EC-7).

Response:

- Dominion Diamond agrees with all the recommendations.
- Dominion Diamond will develop a fish-out plan with mitigation strategies to avoid waterbird mortalities in collaboration with Environment Canada.
- The conceptual WEMP includes mitigation to avoid incidental take and monitoring of migratory birds and species at risk at the Jay Project (and Ekati Mine).
- Monitoring of the use of mine-altered waterbodies by birds will be included in the WEMP.

Recommendation: Significance Determination

Recommendation:

- Board make a determination that the Jay Project would have significant adverse cumulative impacts on the Bathurst caribou herd (IEMA-1, LKDFN-1, YKDFN-1, DKFN-1, DKFN-3)

Response:

- Dominion Diamond does not agree with the recommendation.
- Significance of herd decline and development effects assessment are different; caribou can be self-sustaining and ecologically effective at low population sizes.
- Traditional Knowledge and science indicate history of natural population cycles for the herd (MVEIRB-IR2-3).
- Bathurst herd increased in the presence of active mines in the 1980s (DAR Section 12.2.2).
- Declines in adjacent herds without mines demonstrate that natural factors are important in changes in caribou abundance (DKFN-IR2-5).
- Seasonal ranges of the Bathurst herd are intact and largely undisturbed and still being used (over 98% of physical range has no development) (MVEIRB-IR-9).
- Population models demonstrate the cumulative effects do not influence the herd size trajectory, which is primarily influenced by survival and reproduction rates associated with natural population cycles (MVEIRB-IR-15).
- Multiple lines of evidence in the DAR and responses to Adequacy Review and Information Requests show no significant contribution from development on decline in the population.
- Jay Project will have no significant incremental and cumulative effect on the Bathurst herd.

Recommendation: Jay Road Design and Utilities

Recommendation:

- Use of proposed Jay Project road alignment alternative #4 (IEMA-1, NSMA-10, Tłıchq-1,4, YKDFN-1).
- Esker crossing alternatives (IEMA-1, NSMA-10, Tłıchq-1, Tłıchq-4, YKDFN-1).
- Bury required pipe and power lines (IEMA-1, NSMA-10, Tłıchq-1, Tłıchq-4, YKDFN-1).

Response:

- Dominion Diamond agrees with the recommendation regarding pipelines and they will be covered except where required for safety or inspection (MVEIRB-IR-83).
- Dominion Diamond does not agree with the other recommendations.
- A route alternatives analysis was completed (including alternative #4 [DAR-MVEIRB-UT-02])
- Proposed road alignment #4 is less caribou friendly (is longer, requires more safety berms, provides fewer caribou crossings, and requires more traffic due to greater amount of inclines).
- Selected alignment #3 has smallest impact to esker and allows most of the road to be developed as a caribou crossing (DAR-MVEIRB-UT-1, 2).
- Use of an overpass on the esker is not feasible due to size of equipment and the need for fencing (MVEIRB-IR-86).
- Powerlines require visual inspection and elevated lines avoid an additional impact to the Misery esker.
- Dominion Diamond's work has included engagement with members of the Impact Benefit Agreement groups, including aerial reconnaissance and on-ground engagement to gather input on a route with least impacts to caribou.

Recommendation: Caribou Zone of Influence

Recommendation:

- Estimate ZOI distance and magnitude with 2009 and 2012 aerial survey data (IEMA-3, Tłjchq-2, YKDFN-3).
- Complete aerial surveys and ZOI analysis for the Jay Project (and Ekati Mine) (IEMA-3, NSMA-10, Tłjchq-2, YKDFN-3).

Response:

- Dominion Diamond agrees with the recommendation to analyze 2009 and 2012 aerial survey data.
- Analysis results will be presented in the 2015 WEMP report (i.e., in year 2016).
- Following recommendations in GNWT-7 and GNWT-8, Dominion will collaborate with the GNWT on regional programs and actions, and work with the ZOI Technical Task Group on developing approaches and methods for monitoring and analysis.

Recommendation: Caribou Impact Offsetting

Recommendation:

- DDEC shall prepare a Compensatory Mitigation (Offsetting) Plan for caribou. The purpose of the Plan is to enhance the ability of the Bathurst caribou herd to recover to its previous abundance as measured through reductions in energy loss, and positive changes in calf production and survival (IEMA-5, LKDFN-3, NSMA-9, Tłjchq-7, YKDFN-2).

Response:

- Dominion Diamond does not agree with the recommendation.
- There is no precedent or requirement for offsetting in the NWT.
- The hierarchical priority of mitigation is avoid, minimize, reclaim, and then offset (MVEIRB-IR-90, WEMP [Appendix D]).
- Mitigation through avoidance, minimization, and reclamation (with monitoring and adaptive management) removes the need for offsetting the effects of the Project.
- Effects from the Jay Project to caribou seasonal ranges (0.1%) and fecundity (0.3%) were determined to be not significant (DAR Section 12.6.2).
- Natural variation in survival and productivity are large and magnitudes of changes in these parameters from the Project are small.
- No offset mitigation is likely to yield changes that can be confidently and powerfully measured as different from natural variation in energetics, survival, and productivity.

Recommendation: Effects Research

Recommendation:

- DDEC, with other mine operators and GNWT where possible, shall develop and implement a collaborative research program designed to identify the causes of the Zone of Influence (ZOI) for caribou avoidance (IEMA-2, LKDFN-2, Tłjchq-3, YKDFN- 1).
- The Developer collaborate with impacted communities, the GNWT, and other mine operators to commission independent research into which elements of the Project are having impacts upon caribou, their severity and innovative mitigation measures to reduce these impacts (LKDFN-2).

Response:

- The GNWT already leads a collaborative group (ZOI Technical Task Group), in which Dominion Diamond is a participant and will continue to support.
- Dominion Diamond does not agree that they are responsible to develop another collaboration of independent research on the ZOI.
- Experimentation to determine ZOI causes and effects cannot be completed owing to technical challenges and constraints in establishing cause and effect relationships between mine activities and traffic that generate similar and multiple forms of sensory disturbance simultaneously (MVEIRB-IR-1).

Recommendation: Effects on DDMI

Recommendation:

- The Proponent be required to engage with DDMI to develop mutually acceptable monitoring and mitigation to effectively eliminate these effects to DDMI (DDMI-2).
- The Proponent commit to advancing these monitoring and mitigation measures, with any necessary revisions, for review and acceptance by the Land and Water Board (DDMI-4).
- The Proponent commit to advancing these monitoring and mitigation measures, with any necessary revisions, for review and acceptance by the Parties to the Environmental Agreement (DDMI-5).

Response:

- Dominion Diamond agrees and will engage with DDMI to develop mutually acceptable monitoring and mitigation plans.

Summary

- Jay Project and cumulative effects assessment for caribou and other wildlife valued components were assessed using an ecologically relevant and conservative approach, which also integrated Traditional Knowledge.
- A conservative approach was used to manage uncertainty and avoid underestimating significant ecological effects, which is important in the protection and management of wildlife populations.
- Jay Project will have no significant incremental and cumulative effect on barren-ground caribou and other wildlife.
- Dominion Diamond provided conceptual plans to mitigate and monitor effects from the Jay Project (and Ekati Mine) on caribou and other wildlife.
- Plans were revised based on engagement with the MVEIRB, communities, government, technical specialists, and the Independent Environmental Monitoring Agency.
- Engagement and integration of Traditional Knowledge in development of monitoring and mitigation plans will continue through future Project phases.
- Dominion Diamond will also continue to support regional initiatives as appropriate.

Dominion Diamond thanks the Parties for their contributions during the Project Environmental Assessment Process

