

April 27, 2015

File: W2013D0006

Ms. Claudine Lee
Dominion Diamonds Ekati Corporation
#1102, 4920-52nd Street
Yellowknife, NT X1A 3T1

Dear Ms. Lee,

Re: Lynx Caribou Crossings Plan

The Wek'èezhìi Land and Water Board (WLWB or Board) met on April 22, 2015 to consider DDEC's Caribou Crossings Plan for the Lynx access road, submitted in accordance with condition #31 of LUP W2013D0006.

The Board has approved DDEC's Caribou Crossings Plan for the Lynx access road provided that DDEC use finer crush, such as ¾" minus granite, to cap all caribou crossings, or demonstrate to the Board how 6" minus granite crush addresses the TK input received to use "finer crush" or "sand" to improve caribou movement through caribou crossings. The Board encourages DDEC to address the remaining concerns identified in review of this Caribou Crossings Plan during the Caribou Crossings Workshops planned for August 2015.

Approval of the design for caribou crossings along the Lynx Haul Road in no way sets precedent for what the Board may consider to be (1) an appropriate slope for wildlife access ramps on reclaimed Waste Rock Storage Areas or (2) an appropriate grade for site recontouring, during reclamation. The Board anticipates that additional research, which incorporates traditional knowledge, scientific research, and observational studies, will be completed prior to decisions regarding wildlife habitat at Ekati in a post-closure landscape.

In reflection of the concerns identified in the Reasons for Decision, the Board expects DDEC to more thoroughly substantiate its proposals in all future submissions. Provision of thorough rationale, supporting documentation and references, facilitates improved understanding between all parties, allows for a more informed review, and reduces risk of unnecessary delays in the review process.

Please see the Reasons for Decision for additional information. If you have any questions, please feel free to contact Elissa Berrill at eberrill@wlwb.ca, or by phone at 867-765-4581.

Sincerely,



Violet Camsell-Blondin
Chair, Wek'èezhìi Land and Water Board

Copied: DDEC Distribution List

Reference/File Number: W2013D0006 (Ekati Lynx Project)

Licensee: Dominion Diamond Ekati Corporation (DDEC)

Subject: Lynx Caribou Crossings Plan

Decision from the Wek'èezhìi Land and Water Board Meeting of April 22, 2015

Issued pursuant to Section 54
of the *Waters Act*, S.N.W.T. 2014, c.18

1.0 Decision

On April 22, 2015 the Wek'èezhìi Land and Water Board (WLWB or Board) met to consider DDEC's Lynx Caribou Crossings Plan, submitted to the Board on March 20, 2015, in accordance with condition #31 of LUP W2013D0006. As stated in the Board directive dated April 27, 2015, the Board has approved the Caribou Crossings Plan for the Lynx access road, with additional direction. The rationale for the Board's decision is outlined in the Discussion section, below.

2.0 Background

Caribou crossings have been shown to improve caribou movement across roads at the Ekati mine site. The Misery Haul Road has several caribou crossings, which DDEC monitors with wildlife cameras. The Lynx access road is planned to extend one kilometer west from the Winter access road to the Lynx Pit. During the review process for Lynx Land Use Permit (LUP) W2013D0006, the Independent Environmental Monitoring Agency recommended DDEC submit a Caribou Crossings Plan for the Lynx access road because evidence indicates that road-bed construction can affect where caribou cross roads. IEMA explained that 'caribou friendly' roads generally have low slope angles, minimal berms and finer rock and crush on the top surface, and that elders have indicated crossing structures can help caribou cross roads.¹

¹ See WLWB (www.wlwb.ca) Online Registry for [W2013L2-0001 – Ekati- Public Hearing – IEMA Intervention – Jan 20 14.pdf](#), pg. 6.

The Mackenzie Valley Land Use Regulations (MVLUR) grant the WLWB jurisdiction to regulate the protection of wildlife habitat under paragraph 26(1)(h). The Board determined the best way to ensure the Lynx Road Caribou Crossings Plan (the Plan) be developed in a collaborative manner, was to require the Plan be submitted for approval. The Board included condition #31 in the Lynx Land Use Permit W2013D0006:

At least 60 days prior to road construction, the Permittee shall submit a plan showing the location and design of caribou crossings, developed in conjunction with Aboriginal organizations, to the Board for approval. The Permittee shall ensure caribou crossings are constructed in accordance with the approved plan.

DDEC submitted its Lynx Road Caribou Crossings Plan on March 20, 2015. Board staff distributed the Plan for review on March 20, 2015. Reviewer comments were due by April 7, 2015. Comments were submitted by the Independent Environmental Monitoring Agency (IEMA), the Yellowknives Dene First Nation (YKDFN), and Board staff. The Government of the Northwest Territories – Environment and Natural Resources Division (ENR) submitted a letter acknowledging the plan, but submitted no additional comments or recommendations. Proponent responses were received April 14, 2015

3.0 Reasons for Decision

The Board has approved the Caribou Crossings Plan for the Lynx access road for the following reasons:

1. The Board believes that the review process for the Plan was fair and reasonable.
2. The Board has determined that the Plan, in combination with all information received during the review period, satisfies condition #31 of LUP W2013D0006.

4.0 Discussion

Condition #31 of LUP W2013D0006 requires the Caribou Crossings Plan to include the location and proposed design of caribou crossings for the Lynx access road. In reviewing the i) Lynx Caribou Crossings Plan, ii) comments received from reviewers, and iii) concerns identified in community meetings (Table 1 of Caribou Crossings Plan), the Board has considered seven major factors in its assessment of the Plan:

1. adequate engagement;
2. how locations for caribou crossings were determined;
3. material used on caribou ramps;
4. slope and width of ramp;
5. height of road above natural topography;
6. safety berms/other barriers along road; and,
7. monitoring of crossings once completed.

4.1 Engagement Conducted

Collaboration with Aboriginal organizations in development of the Plan was the Board's principal rationale for the inclusion of Condition #31 in the Lynx Land Use Permit.² In the Plan DDEC outlines the long history of engagement undertaken to include traditional knowledge (TK) in Ekati wildlife monitoring efforts. Beginning as early as 2002, TK has been used to develop DDEC's Wildlife Effects Monitoring Plan (WEMP) and identify caribou crossing routes along the Misery Haul Road to improve caribou passage. In 2014, DDEC visited all Impact Benefit Agreement (IBA) communities and received feedback on caribou crossings along the Lynx access road. It also hosted two 'Caribou Camps,' with the Tłjcho and YKDFN. Participants were asked how "caribou moved across the land in the Lynx area and where caribou crossings would be most effective" as part of these workshops (The Plan, p.2). DDEC plans to host additional community workshops "designed specifically to address caribou crossings and other ways to further mitigate the risk of roads to caribou" in August 2015 (responses to YKDFN comments #3 and #4, and IEMA comment #6).³

IEMA requested that DDEC provide a copy of the presentations it made during community meetings when conducting engagement on the design and locations for caribou crossings at Lynx; IEMA also requested DDEC indicate whether it specifically solicited comments on the design of the Lynx access road and the placement and design of the caribou crossings to minimize the impacts of this infrastructure on caribou (IEMA comment #1). In response to IEMA's comment, DDEC explained that "there were various presentations," and "it would not be practical to provide all the presentations." An example was not provided. DDEC did not respond directly to the second part of IEMA's question, instead stating that that placement and design of caribou crossings was undertaken during driving and helicopter tours of the Lynx site and that the concerns and comments received from community members and traditional knowledge holders are listed in the Caribou Crossings Plan. Despite the somewhat vague response, the Board acknowledges that Table 1 of the Plan includes specific comments received from participants when discussing caribou crossings along the Lynx access road, accompanied by the dates and locations of engagement conducted.

4.2 Locations for Caribou Crossings

DDEC provided maps of the two caribou crossings planned for the Lynx access road in the Plan. These maps show the caribou movement patterns indicated by YKDFN and Tłjcho Caribou Camp participants. The Plan explains, *"these [caribou crossing] locations were selected by Traditional Knowledge holders because the topography and adjacent habitat would likely cause caribou to encounter the road at these locations while moving through the area."* One crossing is "in the lower valley to provide safe crossing adjacent to the Pit activities" and one is "at the top of the hill towards the Winter access road"⁴ immediately following a safety berm on the Lynx access road (YKDFN comment #3).

² See WLWB (www.wlwb.ca) Online Registry for [W2013D0006 - Ekati Lynx - Land Use Permit - Reasons for Decision - April 30 14.pdf](#)

³ See WLWB (www.wlwb.ca) Online Registry for [W2013D0006 - Ekati Lynx - Caribou Crossings Plan - Review summary and attachments - Apr 24 15.pdf](#), for review of all comments referenced within this Reasons for Decision.

⁴ See WLWB (www.wlwb.ca) Online Registry for [W2013D0006 - Ekati Lynx - Caribou Crossings Plan - Lynx Access Road - Design and Locations.pdf](#), unnumbered page 3.

IEMA requested additional information of the movements that are indicated by the green arrows shown in the maps provided (Figure 1 in the Plan); are they spring/summer or fall/winter paths? Are they movements by specific groups – cows and calves vs. bulls? DDEC responded that no specific information was provided to the paths were identified by Traditional Knowledge holders (IEMA comment #2). Both IEMA and YKDFN questioned whether DDEC used caribou trail mapping and caribou movement data from collaring and/or aerial photograph data when designing the caribou crossings. DDEC confirmed that it had and included the maps it used⁵; one map shows all collared caribou data from 1996-2014 combined with traditional knowledge and historic trails and the other classifies areas of high, medium, and low caribou use developed through identification of caribou trails from aerial photographs (IEMA comment #5 and YKDFN comment #1).

DDEC committed to building a third crossing along the Winter access road closer to the Misery Haul Road. YKDFN notes there are two additional arrows which identify potential crossing locations on the Winter access road that are not addressed in the Plan. DDEC explains that the Lynx Caribou Crossings Plan is only for review and approval of crossings along the Lynx access road, but is happy to address YKDFN's comment during the August 2015 caribou crossings community workshops (YKDFN comment #4).

4.3 Caribou Crossings Design: Material, Slope, Width, and Height

The design drawings submitted with the Caribou Crossings Plan indicate the slope and size of crush to be used to construct both crossings. DDEC explains that successful design elements and lessons learned from the development of the crossings along Misery Haul Road have been used to design the crossings along the Lynx access road. YKDFN asked for as-built design drawings of the 15 caribou crossings on the Misery Road; in particular, YKDFN requested information on the size of crush used on the Misery Road crossings. DDEC responded that it does not have as-built drawings of the Misery road crossings, but is willing to provide a description of the slope and composition for each crossing at the Caribou Crossings workshops this summer (YKDFN comment #2). DDEC provided a list of specifications representing a range of design elements used on the 15 crossings at the Misery Road. Table 1, below, compares the design elements proposed for the Lynx access road with those used to build crossings on the Misery Haul Road. Potential uncertainties identified with the proposed design elements are expressed within the table.

The height of the Lynx access road above the tundra is also to be minimized with appropriate consideration for engineering design and safety. Both IEMA and YKDFN requested more information showing the relative height of the road above the tundra; YKDFN noted, "we know that above 2 m you start to see caribou considering their 'crossing options'" (YKDFN comment #5 and IEMA comment #4). DDEC provided maps of the Lynx Road alignment as well as several cross-sections of the Lynx access road.⁶ These drawing indicate that the road will be up to two metres above the surrounding tundra, except along the safety berm which will be approximately five metres above the tundra (YKDFN comment #5). Unfortunately, DDEC did not label the safety berm in the drawing, nor did it indicate where the caribou

⁵ See WLWB (www.wlwb.ca) Online Registry for [W2013D0006 - Ekati Lynx - Caribou Crossings Plan - Review summary and attachments - Apr 24 15.pdf](#).

⁶ Ibid.

crossings were to be located on these maps. Nevertheless, there appears to be only one safety berm planned for the Lynx Road which extends approximately 150-200 m along the north side of the road.

The Lynx access road and caribou crossings will be incorporated into the Ekati wildlife monitoring program, including installation of wildlife cameras along the road (IEMA comment #6).

Table 1: Comparison of Caribou Crossing Design Specifications – Lynx and Misery

Specifications	Lynx ⁷	Misery Road ⁸	Uncertainties
Size of crush, material	6 " minus, granite	¾" or 6" minus, granite	DDEC has stated that 6" crush has proven effective capping material at other crossings and is economical. The Board questions whether 6" crush addresses the TK recommendations received that "finer crush" or "sand" be used on access ramps; would ¾" minus crush as used on some of the caribou crossings along the Misery Haul Road be a significant improvement to caribou movement through caribou crossings?
Slope	25% Slope (4:1)	<10% to <35%	DDEC provided general statements that ramps at the Misery Haul Road have been used by caribou and that the 25% slope chosen for the Lynx access ramps, falls within the range of slopes on the caribou ramps which have been constructed along the Misery Haul Road (response to WLWB comment #1). No further rationale is provided for how DDEC chose a 25% slope from the range of slopes implemented for the Misery Haul Road crossings, or even how the slopes on the caribou crossings for Misery were originally determined. The Board has yet to see any data which indicates that a 25% slope is favourable for caribou access ramps. The Board questions whether a lower slope gradient would be more favourable for caribou crossings.
Width	50 m	10 m	DDEC has stated that Misery crossings were constructed with width of 10 m; DDEC has proposed a 50 m width for the Lynx Road. It can be reasonably assumed that a wider ramp improves caribou access.

IEMA pointed out that questions remain regarding how the TK collected during engagement efforts specifically led to a better design for caribou crossings (IEMA comment #3). The Board acknowledges IEMA's concern; these questions, which include those identified in Table 1, result from a lack of rationale or supporting evidence to substantiate chosen design elements. Essentially, while DDEC has clearly indicated the concerns and suggestions raised by participants, there are many cases in which DDEC has proposed what appears to be an appropriate design element but has not explained why they have chosen that design. The company should have more clearly linked feedback received to the chosen design elements and included a discussion of how the design elements chosen mitigate participant concerns. This would have provided improved understanding of the design choices presented.

⁷ Specifications for Lynx presented in the Caribou Crossings Plan.

⁸ Specifications for Misery Road, presented in response to YKDFN's comment #2, through the Online Review System.

This being communicated, the Board acknowledges that the design elements presented have been implemented elsewhere and have demonstrated caribou use at the Ekati site (though specific details of use were not explained in the Plan). In addition, DDEC has clearly stated that “all learning, engagement, and improvements will be used...to improve future design” and should areas along the Lynx road be identified as presenting barriers to caribou, DDEC will consider additional crossings or alternative mitigation measures (IEMA comment #6). These commitments, as well as DDEC’s commitments to monitoring and additional engagement (discussed above), provide the Board with confidence that DDEC has intentions to develop caribou crossings which address the results of engagement and allow for continued caribou access to habitat at the Ekati site. ***Therefore the Board has approved the proposed design of the caribou crossings with the condition to use finer crush, such as ¾” minus granite, to cap all caribou crossings, or demonstrate to the Board how 6” minus granite crush addresses the TK input received to use “finer crush” or “sand” for caribou crossings.***

The Board expects DDEC to more thoroughly substantiate its proposals in all future submissions. Provision of thorough rationale, supporting documentation and references, facilitates improved understanding between all parties, allows for a more informed review, and reduces risk of unnecessary delays in the review process.

5.0 Conclusions

The Board has determined that the Plan, when accompanied by all information received during the review period, satisfies the intent of Condition #31 in LUP W2013D0006. The Board encourages DDEC to address the remaining concerns identified in this review during the Caribou Crossings Workshops it will hold in August 2015.

Signed on the 27th of April, 2015, on behalf of the Wek’èezhìi Land and Water Board



Witness



Violet Camsell-Blondin
Chair, Wek’èezhìi Land and Water Board