

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC NO.:	KIA-NIRB-01
Re:	Wind Turbine Height Differences and Implications		

Request Made by Interested Party:

Sabina states that they completed the Energy Centre effects assessment using the largest WTG model (tower height and rotor diameter) being considered. However, there are discrepancies throughout the 2023 FEIS Addendum regarding the WTG hub height (81 m or 111 m, resulting in a combined height of 150 m or 180 m). Fall migration standwatch surveys assumed a 180 m tower height; if the shorter tower is selected, then low-flying birds may have been misclassified as being “safe” from turbine strikes. Noise modelling assumed a 150 m tower height; if the taller tower is selected, then the noise modelling results may be incorrect, which would render the Energy Centre effects assessments for sensory disturbance incorrect. Furthermore, even if the shorter tower is selected, the KIA disagrees that all noise above 45 dBA would fall within the Modification PDA.

Information Request:

- Please clarify if the proposed WTG model has a hub height of 81 m or 111 m (for a total combined height of 150 m or 180 m). Please also ensure that WTG specifications are consistent within the 2023 FEIS Addendum and other relevant Project documents (e.g., management plans).
- If the shorter tower height is proposed, please re-analyze data from the 2019 fall migration standwatch surveys to correctly categorize birds “at turbine height”. If this is not possible, please commit to completing additional standwatch surveys to ascertain migration flight heights. Please also confirm if the 2022 spring migration surveys used the correct “at turbine height” definition.
- If the taller tower height is proposed, please complete noise modelling using the 111 m hub height. If the results for noise attenuation differ (e.g., noise will reach 45 dBA >500 m from the WTGs), potential effects of sensory disturbance to wildlife VECs will need to be re-analyzed for the FEIS.
- Based on the current noise modelling (using 81 m hub height), please explain how the Modification PDA can ‘contain’ noises exceeding 45 dBA when the polygon does not appear to encompass a 500 m buffer around all WTGs.
- Please provide information on when detailed engineering design for the WTGs will be completed.

B2Gold’s Response to Request Provided on June 15th, 2023:

- The Wind Tower Generator (WTG) model to be used has not yet been selected as the final engineering is ongoing. We anticipate the hub height to be between 81 m and 111 m. B2Gold has already made a commitment that when the final design is finalized, the noise model will be updated if required.
- If a shorter tower is used, they typically use shorter blades, so the blade height above ground may not change. If the ground to blade height is lower than that in the 2023 FEIS Addendum, then B2Gold will reanalyze the existing data to determine if a greater proportion of birds are “at blade height”.

- The WTG model to be used has not yet been selected as the final engineering is ongoing. B2Gold has already made a commitment that when the final design is finalized, the noise model will be updated if required.
- The modification Project Development Area (PDA) is a polygon extending an average of 500 m surrounding the planned wind towers. The noise modeling report predicted that noise would attenuate to 41-45 dBA by approximately 500 m from the wind towers. Thus, noise levels exceeding 45 dBA will generally occur within an area approximately the same coverage as the Modification PDA.
- Conceptual engineering designs were provided in the amendment package. Detailed engineering will be completed prior to construction.

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-02
Re:	Temporary Shutdown of Wind Turbines (raptors)		

Request Made by Interested Party:

Sabina has committed to shutting down the wind farm during periods of fog, peak migration, and darkness. Leftover non-committal wording in the 2023 FEIS Addendum and WMMP Plan (V.12) needs to be updated.

Information Request:

- Please revise Section 2.3.7.4 (Mitigation for Direct Mortality to Raptors) of the 2023 FEIS Addendum to include the same commitment to temporary shutdown of the WTGs as was included for Migratory Birds (Section 2.3.6.4).
- Please also revise the wording of “Sabina may temporarily halt operations of the WTGs” in Sections 10.1.9.4, 11.1.9.4, and 12.1.9.4 of WMMP Plan to be consistent with Sabina’s commitments.
- Please include ARU studies in the WMMP Plan, as per Sabina’s response to comment KIA-02 on the Modification Package.
- Please distribute the detailed Migratory Birds Protection Plan to the KIA and other interested parties for review when it has been developed.

B2Gold’s Response to Request Provided on June 15th, 2023:

- B2Gold will revise and the wording in Section 2.3.7.4 should be the same as Section 2.3.6.4 (“Sabina will conduct temporary halting of operation of the WTGs during period of dense, low fog during the peak bird migration season.”). Thank you for noting this discrepancy. This information has been updated in the WMMP Plan, Section 10.1.9.4, which states that “Sabina will temporarily halt operations of the WTGs during periods of dense, low fog during the peak migration season” (see next bullet point).
- B2Gold will add the suggested wording (“Sabina will temporarily halt operations of the WTGs”) to sections 10.1.9.4, 11.1.9.4, and 12.1.9.4 of the WMMP Plan during the next revision. Thank you for noting the discrepancy.
- The response to comment KIA-02 does not include any updates to the WMMP Plan. B2Gold committed to installing Autonomous Recording Units (ARUs) to record overflights by birds during spring and fall migration in response to discussions with the KIA at the CTAG meeting during fall 2022. These ARUs are currently in place during 2023 and results will be provided in the future.
- The Migratory Birds Protection Plan will be shared with the KIA when it has been developed.

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-03
Re:	Meteorological Tower Not Included in Effects Assessment		

Request Made by Interested Party:

Sabina plans to install a permanent meteorological tower, which may be up to 100 m tall and may include guy wires, to support the Energy Centre. It is unclear why the meteorological tower was not included in the effects assessment in a more fulsome way. As there are previous reports of bird collisions with guyed meteorological towers, the KIA requests that Sabina commit to installing a self-supporting structure instead.

Information Request:

- Please include the permanent meteorological tower in the effects assessment (including mitigation and management measures) for direct mortality impacts on migratory birds and raptors.
- Please commit to installing an unguyed meteorological tower and completing carcass monitoring at and around the tower (in addition to the WTGs).

B2Gold's Response to Request Provided on June 15th, 2023:

- The meteorological tower was included in the Project Description of the modification package and in the assessment of effects. The project description states (page 1-15):

"A permanent meteorological tower up to 100 m in height will be constructed within the footprint of the Modification to collect meteorological data, WTG power curve testing and forecasting conditions. The meteorological tower will be either a guyed metal tube structure or self-supported."

- The use of a guyed meteorological tower is not predicted to change the results of the effects assessment of direct mortality for migratory birds or raptors, as additional mortality is not expected to increase due to the tower. The carcass monitoring conducted for the WTGs will also be conducted at the meteorological tower and this monitoring will be added in the next iteration of the WMMP Plan.

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-04
Re:	Alternatives Assessment		

Request Made by Interested Party:

Sabina's Alternatives Assessment does not meet the Appendix A Requirements outlined in the Table of Concordance. The selection of alternative options for discussion is limited, and the assessment results in relation to the methods are unclear. More details regarding the solar array/panels, design and location of WTGs, and service road route options would be useful.

Information Request:

- Please consider presenting the Alternatives Assessment in a table format that clearly assesses the six key criteria for each alternative option.
- Please include a discussion of solar energy in Section 1.7.3.1 (power generation) and provide more information about the proposed solar array and additional solar panels that may be added to existing buildings.
- Please explain how Sabina decided to reduce the Energy Centre from 19 to 13 WTGs.
- Please explain why additional service roads around the Llama Pit and Llama Lake are necessary or preferred (i.e., in an assessment against the six key criteria), as there are other proposed road options that already connect to the Goose site.

B2Gold's Response to Request Provided on June 15th, 2023:

- The format of the alternatives assessment matches the original Back River Project FEIS which did not include the above suggested table format. In addition, the assessment passed conformity as noted by the NIRB and the commencement of the public technical review of the FEIS Addendum.
- Section 1.7.3.1 includes potential power generation types that were not included in the original FEIS or the FEIS Addendum effects assessment: LNG, hydroelectric, and geothermal. Solar energy (and wind) were included within this section during the original FEIS because they were also deemed not feasible and were therefore not included in the effects assessment. Solar energy (and wind) are now considered viable at the Back River Project and thus have been removed from this section.
- The noise study was completed conservatively and included additional wind turbine locations as the wind resource modelling was ongoing. B2Gold Nunavut confirms that the FEIS Addendum and Back River Project Energy Center proposal is for 13 wind turbines and not 19. The turbines that were dropped were not necessary to maintain feasibility of the renewable energy center and were in the least optimal wind resource location. If additional turbines are proposed by B2Gold Nunavut, additional permitting steps may be required. In addition, B2Gold Nunavut highlights our commitment (GN-07) to re-run the noise model exercise with the final selected turbine equipment to ensure noise model results are similar to those used in the effects assessment.
- As stated in Section 1.7.3.2 of the Back River Project FEIS Addendum: *"Roads permitted for the Approved Project will be used, where feasible, to minimize new disturbance. New roads will be constructed to the WTG locations to allow access of equipment required for construction and to support maintenance activities during operation. Access roads will be designed and constructed using similar methods and materials as the Approved Project roads and will be sited to avoid and/or minimize impact on sensitive resources (e.g., water bodies, wildlife habitat). Access roads*

will be designed under the direction of a licensed professional engineer and constructed to meet turbine and transformer equipment load specifications. Recognizing that final design, and site-specific field conditions will dictate final engineering, Sabina has provided multiple access road routes within the proposed Back River Energy Center. All road routes are within the original FEIS potential development area, attempt to utilize the existing road network to the greatest extent possible, and had baseline data collection performed on the routing. If the Project is approved, and final engineering completed, Sabina will provide the ultimate road network and layout in annual reporting to all necessary regulatory authorities including the NIRB."

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-05
Re:	Discussions with Transport Canada (completed and pending)		

Request Made by Interested Party:

Transport Canada and B2Gold Nunavut confirmed the aviation lighting requirements for the Back River WTGs, including prohibition of blue or green lights as an alternative to red and white lights, the latter of which are known to be a hazard to nocturnal migrating birds. Thus, Sabina's conclusions in the 2023 FEIS Addendum that no residual effects of direct mortality to migratory birds and raptors should be re-evaluated. In addition, if Transport Canada / Nav Canada has not yet reviewed Sabina's proposed WTG placement, it is unclear what the implications for the 2023 FEIS Addendum would be if the placement is unacceptable.

Information Request:

- Please repeat the effects assessment for the Energy Centre's potential effects on direct mortality of migratory birds and raptors, considering that some mitigation by design measures proposed by Sabina have now been confirmed to not be allowed by Transport Canada.
- Please confirm whether Transport Canada / Nav Canada has reviewed and approved the WTG placement in relation to the Goose airstrip.

B2Gold's Response to Request Provided on June 15th, 2023:

- The Modification package project description states (Page 1-15, 16): *"An aviation lighting system will be incorporated into the Modification design. WTGs will be grouped in turbine arrays and aviation lights will be installed on some of the WTGs as required by Transport Canada (TC). The number of WTGs with lights and the lighting pattern to be used will be determined in consultation with TC. Aviation lights required for the Modification may include medium-intensity red strobe warning lights placed on the nacelles of the turbines located at each end of a turbine array, as well as on every third or fourth turbine. Once the Modification layout has been finalized, it will be submitted to TC for lighting pattern approval. Sabina will work with TC to reduce the quantity of navigation lights associated with the Modification as much as is allowable (Photo 1.3-3)."*

The effects assessment for birds (waterfowl, upland birds and raptors) assumed that standard area-based red flashing lights would be used for aviation markers, as they are on most other windfarms. The effects assessment evaluated the potential for birds to avoid the wind towers or be disoriented by lights and suffer mortality due to collision with the wind blades. The effects assessment compared avoidance and mortality to other operating windfarms that have aviation marking lights in the north (Yukon and Northwest Territories) where effects on birds were trivial. Therefore, the use of red aviation marking lights has been assessed in the modification package and no additional assessment is required with or without any additional lighting mitigation measures.

- B2Gold is in the review process with Transport Canada (TC) to review and approve the proposed wind towers and navigation lights. To date, TC has not raised any objections to the proposed design. Note that TC review process is secondary to the environment assessment process through the NIRB and occurs afterwards.

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-06
Re:	Sensory Disturbance and Disruption of Movement for Caribou		

Request Made by Interested Party:

The KIA disagrees with Sabina's assessment of no residual effects of sensory disturbance and disruption of movement for caribou due to 1) uncertainty about how caribou will react to the presence of WTGs, and 2) Sabina's planned mitigation and monitoring for caribou. The KIA recommends stronger wording around commitments to temporarily shut down the WTGs when groups of caribou are close by and earlier (greater distance) triggers to conduct caribou behaviour monitoring. Clarity is needed regarding the WMMP Plan's active caribou monitoring program (with human wildlife monitors and tower cameras) and the potential use of remote cameras for behaviour monitoring.

Information Request:

- Please clarify if and how active caribou monitoring (to determine presence, group size, and composition) will be conducted at night-time.
- Please commit to temporarily shutting down the WTGs when groups of 25 or more caribou exhibit disturbance behaviours within 1.4 km of the activity between June 5 and July 31.
- Please consider increasing the trigger distance for behaviour monitoring from 1.4 km to the 4 km ZOI, if logistically feasible, for the monitoring period before construction of the wind farm and after construction and operations (BACI study). A variety of methods could be explored to determine if this distance extension is possible, including long range infrared scopes. A more conservative approach is recommended for initial monitoring due to the high uncertainty of the effects assessment for sensory disturbance and disruption of movement for caribou.
- Please include the BACI study design for caribou behaviour monitoring in the WMMP Plan.
- Please provide more details about the on-site camera monitoring program for the WTGs and clarify how the study design and planned statistical analysis will allow for determination of caribou avoidance behaviours and/or disruption of migration movements due to the WTGs.
- Please explain how many years of data collection using the camera monitoring program would likely be needed to determine whether caribou were avoiding the WTGs using analyses of camera monitoring data and consider, given the current resiliency of the caribou herds potentially affected, whether it is acceptable to allow for the potential avoidance of the area or migratory deflections for that length of time prior to adaptively managing.
- Consider presenting more proactive, conservative approaches that could be used under the precautionary principle instead? For example, could Sabina assume a larger ZOI around the WTGs and plan for monitoring for presence and adaptive management at that distance?
- Please update text throughout the caribou section of the 2023 FEIS Addendum to reflect the inclusion of Disruption of Movement as a potential project effect.

B2Gold's Response to Request Provided on June 15th, 2023:

- Monitoring is planned during daylight hours. Note that during sensitive seasons for caribou (calving and post calving) caribou are not generally present at the Goose site and it is 24-hr daylight at that time. Incidental monitoring occurs 24-hrs a day (i.e., all staff are trained that if caribou are observed, the environment department is notified).

- B2Gold does not see a rational for changing the triggers at this time. B2Gold adaptively manages all aspects of the project with support of the CTAG and Inuit Environmental Advisory Committee. The wind towers have specifically been added to the CTAG scope.
- Behaviour monitoring at the Back River, Meliadine and Meadowbank projects indicates that behaviour cannot be reliably determined at distances greater than approximately 2 km using either binoculars or a scope (ERM 2023. *Meliadine Project. Caribou Behaviour Monitoring Program Report*). Therefore, B2Gold cannot at this time commit to conducting behaviour monitoring out to 4 km.
- Mention of the BACI study design for caribou behaviour monitoring will be added to the next iteration of the WMMP Plan. Results of studies are reviewed with the CTAG and updated as needed to meet the objectives. The CTAG is composed of representatives from the B2Gold, the KIA and the GN.
- The FEIS for the approved Back River project predicted that caribou would avoid the Mine Site by approximately 4 km. The modification package for the Energy Centre at the mine predicted that there would be no increase in avoidance or disruption of movement for caribou beyond that which is already predicted for the Project. There are several monitoring programs designed to evaluate effects of the Project on caribou, including: 1) a collar monitoring program to evaluate caribou avoidance or disruption of movement at a large spatial scale, 2) a camera program to evaluate caribou relative abundance at a medium scale, 3) a behaviour program to evaluate caribou response at a local scale and 4) a stress hormone study to evaluate effects across scales. Since the wind towers are located in close proximity to the mine site it will be difficult to monitor for effects of the addition of the wind towers alone nor is it common practice to assess the effects of individual pieces of infrastructure – typical monitoring is for the project as a whole. However, B2Gold understands the interest in the effects of wind towers on caribou due to their projected growing use in the Arctic. B2Gold will continue to work with the CTAG to design and update the monitoring studies and will discuss the design of the monitoring programs in an upcoming CTAG meeting.
- It should be remembered that camera monitoring is only one of a suite of monitoring tools being used to evaluate caribou response to the Project. These include: 1) collar analysis for changes in movement or avoidance of the Project, 2) behaviour monitoring, 3) camera monitoring and 4) a stress hormone study. Therefore, measuring effects on caribou is not contingent on camera data alone. The most sensitive analysis is likely collar analysis, which could take as little as a single season to determine if caribou are avoiding the site. All caribou monitoring (including camera monitoring) methods and results are presented in the annual WMMP Report, and are reviewed annually with members of the CTAG of which the KIA is a member.
- The analysis of collar data evaluates whether there are fewer caribou, or if caribou are spending less time near the mine across a spectrum of ZOI sizes that include both smaller and larger than the predicted 4 km ZOI. Note that wind farms in other parts of Canada do not shut down for caribou or other terrestrial mammals. B2Gold is already addressing the precautionary principle by committing to monitoring and shutting down the WTGs when groups of caribou approach the wind farm.
- Disruption of movement is already evaluated in the Modification Package in Section 2.3.2.4.

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-07
Re:	Potential Attraction of Scavengers to Turbine and Meteorological Tower Fatalities		

Request Made by Interested Party:

Sabina states that the Modification will not create new wildlife attractants and concluded that there will be no residual effects for attraction of grizzly bear and furbearers; other wildlife VECs were not assessed. However, scavenging of carcasses from turbine strikes is a known confounding factor for estimating mortality. There are several mammalian and avian species known to occur at the Project that may scavenge for food; therefore, potential attraction to the WTGs should be evaluated in the effects assessment.

Information Request:

- Please repeat the effects assessments for the Energy Centre's potential attraction of grizzly bear, furbearers, raptors, and select migratory birds to carcasses resulting from collisions with the WTGs and/or meteorological tower.
- Please include removal of carcasses found during WTG mortality monitoring, as mitigation for direct mortality and injury of raptors, in the next iteration of the WMMP Plan.

B2Gold's Response to Request Provided on June 15th, 2023:

- The FEIS Addendum already evaluated the potential for attraction of a variety of wildlife species, including grizzly bears and furbearers to the project site due to interesting smells and the potential for food or shelter in project facilities. A review of monitoring studies for wind towers indicated that no birds (Diavik example) or few birds are expected to be killed by the WTGs. The addition of one or two carcasses per year would not result in a change to the level of attraction of wildlife to the mine site. An increase in attraction is still not considered a residual effect.
- The WMMP Plan already includes collection and disposal of any roadkill so as not to attract scavengers. Collection of any carcasses observed during carcass surveys will be added the next time that the WMMP Plan is updated (i.e., during carcass monitoring, if carcasses are observed, they will be removed).

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-08
Re:	Level of Concern Category for the Energy Centre		

Request Made by Interested Party:

Sabina categorized the Energy Centre as the lowest (Category 1) level of concern without considering or discussing site sensitivity. Based on the known occurrence of migratory bird species at risk, relative proximity to two important bird areas, and presence of nearby waterbird staging areas south of the Modification PDA, the Project could be argued as having Very High potential sensitivity. Therefore, the Energy Centre could be classified as the highest level of concern (Category 4). Modifications to the Sabina's WTG monitoring program are needed regardless of category, as it does not currently meet the requirements outlined in EC/CWS' guidance.

Information Request:

- Please provide rationale for why the Back River Energy Centre should have a Category 1 level of concern, considering the known site sensitivities that could place it in Category 2, 3, or 4.
- Please include post-construction migration standwatch surveys, standard area shoreline surveys, and ARU studies in the WMMP Plan. For a Category 4 project, these post-construction surveys should be conducted for at least 2-3 years.
- Please increase the frequency of carcass searches from twice weekly to daily or every two days until it has been determined that carcasses persist for longer than a few days.
- Please consider continuing mortality monitoring after two years of WTG operations, such as during regular site inspections.

B2Gold's Response to Request Provided on June 15th, 2023:

As per CWS guidelines, site sensitivity is determined through an assessment of preliminary information sources regarding bird species and use of the project area, as well as the design and operational factors of the proposed wind energy project.

The Important Bird Areas (IBAs) nearest the Project are very far away (200-500 km away). Inuit IQ, baseline studies, and ongoing monitoring indicate that only a few sightings of a listed species at the site and there is no limiting habitat or unique features in area. Therefore, following CWS guidelines based on criteria, the planned WTGs remain a category 1, as described in more detail below.

Using the CWS guidelines, the Modification is considered a medium sized wind farm (11-40 turbines) and low sensitivity due to the following criteria, and pulling from examples of projects provided in CWS 2007:

1. *Criteria 1: Presence of species listed by SARA, COSEWIC:* As noted by KIA, there have been a small number of sightings of listed species during baseline surveys for the project. It should be noted that there will be small numbers of sightings of listed species at any location in Nunavut. For example, red-necked phalarope have been observed in small numbers during baseline surveys for the FEIS and for the FEIS Addendum. Red-necked phalarope have been observed breeding in sedge meadows and sedge wetlands. The WTGs will primarily result in the loss of dry upland habitat, and there is very little wetland habitat within the Modification PDA. Harris' sparrow has also been observed in low numbers during baseline surveys in the general area of the project. One peregrine falcon was also observed on one occasion during a fall migration

survey, which is also a low number of observations. Sightings of a listed species in low numbers alone does not warrant a high category ranking, as described in CWS 2007. Following examples provided in the CWS 2007 guidance document, “site-specific considerations need to be taken into account”. The population density of any of these listed species in the area is not considered sufficient to lead to significant problems for the populations. In addition, Harris’ sparrow populations are not limited by breeding habitat, but are federally listed due to risks to their habitat in wintering grounds. As a result the site sensitivity is still considered “low”, as the mere presence of an individual is not sufficient information to use when ranking the site.

2. *Criteria 2: Proximity to bird colonies, staging/wintering areas, significant areas of bird concentrations, migration corridors, or nationally important bird areas:* The Modification PDA is not located near bird colonies, significant areas of bird concentrations, migratory corridors, or nationally important bird areas. The nearest ponds that supported any staging waterbirds were 15 km and 35 km away. However, the presence of these two waterbodies does not warrant a higher site sensitivity. Examples of “high” or “very high” site sensitivity provided in the CWS 2007 guidance document include “a medium-sized windfarm 4 km away from the largest colony of Roseate Terns in Canada (60% of the Canadian population of this SARA-listed, endangered species) located directly in between two islands where these birds forage”, or “a proposed windfarm located 14 km from a nationally important seabird ecological reserve, which constitutes the largest colony of Leach’s Storm-petrels in the world, where over 1 million Storm-petrels can be found for part of the year that could be attracted to the turbines.” The Modification PDA does not meet any of these criteria nor is it comparable to these examples of high sensitivity in terms of species observed, density of listed species, or proximity to important colonies or areas.
3. *Criteria 3: Landforms that concentrate or funnel birds:* The proposed WTG locations are situated on open landscape away from cliffs or valleys that would constrict migratory bird movement.
4. *Criteria 4: Large concentrations of raptors:* No large concentrations of raptors have been observed in the area.
5. *Criteria 5: May disrupt large continuous forest or wetland habitat:* This does not apply, as the WTGs will be placed in dry rocky habitat.

Therefore, following the criteria and guidelines provided by CWS, the project is still considered a Category 1 wind farm.

- B2Gold has already exceeded baseline program requirements and has committed to mitigation and follow-up monitoring that exceeds the guidance for Category 1 and Category 2 wind farms provided by CWS. This is not a Category 4 project and mitigation and monitoring will follow the guidelines provided by CWS 2007 for a Category 1 project.
- The CWS guidelines state the following:

“As a minimum standard, 6 to 8 weeks of carcass searches during the spring migration period and 8 to 10 weeks during the fall migration period should be planned for. At sites with a low level of concern, one year of data would normally be sufficient, but at sites in the highest levels of concern, two or three years of monitoring might be required.”

B2Gold has already committed to carcass searches above what is required by CWS for both a Category 1 and Category 2 project (two years of carcass surveys, rather than one year). Carcass searches will occur twice weekly. If carcasses are regularly observed, frequency may increase; however, B2Gold does not see a reason for increasing the frequency of monitoring at this time.

- Following CWS guidelines, carcass mortality monitoring is required for one year. B2Gold is already committed to 2 years of surveys. If mortality events are observed regularly during the first two years of carcass surveys, then B2Gold will adaptively manage. However, during regular site inspection, if carcasses are observed, they will be reported in WMMP report as a mortality event. The WMMP Plan already includes collection and disposal of any roadkill so as not to attract scavengers. Collection of any carcasses observed during carcass surveys will be added the next time that the WMMP Plan is updated (i.e., if carcasses are observed, they will be removed and reported).

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-09
Re:	References for Migratory Birds and Raptors		

Request Made by Interested Party:

Cited references in the Migratory Birds and Raptors sections (at minimum) are missing from the References list of the 2023 FEIS Addendum, making it difficult to complete a thorough technical review. The KIA requests clarification on selected references regarding disruption of movement and direct mortality on migratory birds and raptors. The KIA also disagrees with the use of Ontario guidelines to set mortality thresholds, especially for upland birds and waterbirds, to trigger adaptive management.

Information Request:

- Please include all cited reports in the Reference list of the 2023 FEIS Addendum.
- Please provide more relevant studies on potential disruption of movement to migratory birds from wind farms, where possible.
- Please provide the Bird Studies Canada (2017) report on non-raptor and raptor mortality estimates in Canadian provinces. Without access to this report, it is unclear why the mortality estimates presented in the 2023 FEIS Addendum are much lower than those in other publications.
- Please apply a more conservative mortality threshold for migratory birds (upland birds and waterbirds). The threshold should be developed after some initial mortality data are collected from the area and in consultation with the GN, ECCC/CWS, and KIA.
- Please consider applying a more restrictive mortality threshold for raptor species of conservation concern if Sabina intends to follow OMNR (2011) guidelines.
- Please undertake more frequent carcass searches such that mortality rates can be accurately estimated for the Modification and used to adjust mortality thresholds later, if needed.

B2Gold's Response to Request Provided on June 15th, 2023:

- The reference list for the Migratory Birds and Raptors sections of the 2023 FEIS Addendum are provided in a separate document alongside these comment responses. B2Gold thanks the KIA for noting the oversight in the references list of the original document.
- Relevant studies on potential disruption of movement to migratory birds from wind farms are provided in the 2023 FEIS Addendum, and references are included in the reference list provided. For example, Mossop, D. H. 1998. *Five years of monitoring bird strike potential at a mountain-top wind turbine, Yukon Territory. PWGSC Contract No.: 234403-9569101-SQ. CANMET Energy Technology Centre, Energy Technology Branch, Energy Sector, Department of Natural Resources Canada*, is a study that includes five years of monitoring bird strikes at a wind turbine in Yukon. The data provided are from the Canadian Arctic region, where data are otherwise scarce.
- The Bird Studies Canada report citation is: *Bird Studies Canada. 2016. Wind Energy Bird and Bat Monitoring Database Summary of the Findings from Post-construction Monitoring Reports. Bird Studies Canada, Canadian Wind Energy Association, Environment Canada and Ontario Ministry of Natural Resources.*
 - The original in text citation had the incorrect year (2017). This study provides a meta-analysis of bird mortality monitoring at projects across southern Canada (Alberta, Atlantic Canada, and Ontario).

- The report provides a corrected estimate of raptor mortalities as 0.06 raptors/turbine in Alberta, 0 raptors/turbine in Atlantic Canada, and 0.20 raptors/turbine in Ontario (see the Summary section and Table 15).
- B2Gold is not aware of other studies citing higher rates of raptor mortality at wind turbines but will consider additional data if any specific studies can be provided.
- The mortality threshold for migratory birds was chosen based on published guidelines for projects in Ontario (OMNR 2011).
 - These guidelines include a single suggested threshold of 14 birds/ year at “individual turbines or turbine groups”.
 - The mitigations in the FEIS Addendum include the 14 birds/turbine/year mortality threshold across 13 turbines, following the OMNR guidelines.
 - Additional published recommendations for thresholds of bird mortalities were not found within Canada or the US. For impact assessments in Europe, thresholds are typically established at 1% - 5% of the bird community (more conservative for species of conservation concern, and less conservative for abundant species; Backes and Akerboom 2018). B2Gold was unable to identify additional published threshold guidelines, however the US Fish and Wildlife Service states that guidelines in the US typically consider mortalities according to every 100,000 birds present in the study area (US Fish and Wildlife Service 2021).
 - Backes, C., and Akerboom, S. 2018. *Renewable energy projects and species protection. A comparison into the application of the EU species protection regulation with respect to renewable energy projects in the Netherlands, United Kingdom, Belgium, Denmark and Germany. Utrecht, The Netherlands: Utrecht Centre for Water, Oceans and Sustainability Law.*
 - US Fish and Wildlife Service. 2021. *U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines. Arlington, VA.*
 - The Back River FEIS estimated the population of upland breeding birds in the Regional Study Area to be 1,144,088 ± 61,334 pairs (FEIS Vol 5 Ch 9 Section 9.5.2.1). Conservative estimates can be made for a 1% population threshold using the lowest estimates of 1,082,754 pairs in the RSA and eliminating additional population considerations for waterbirds, multiplication for individual birds instead of pairs, or consideration of additional birds which may only be present during the migration period. A 1% mortality rate of these lowest population estimates would represent a threshold of 10,828 birds / year in the RSA.
 - The current threshold level of 14 birds/turbine/year (i.e., 182 birds for 13 turbines) represents 0.02% of the estimated population in the RSA and is therefore well below the most conservative thresholds used for European impact assessments (1%).
 - Bird Studies Canada (2016; see attached references list) included estimates of 1.17 to 6.14 bird mortalities /turbine / year for a multitude of projects across Alberta, Ontario, and Atlantic Canada. The proposed threshold for migratory bird mortality in Ontario is higher than these published mortality rates.
- The mortality threshold for raptors was chosen based on published guidelines for projects in Ontario (OMNR 2011) where the most data is available in Canada.
 - These guidelines include multiple possible metrics for raptors: 0.1 raptors/turbine across all turbines for species of conservation concern, 0.2 raptors/turbine across all turbines for all raptors, or 2 raptors/project for small project < 10 turbines.
 - The mitigations in the FEIS Addendum include a threshold of 2 raptors/year for the Project. When this value is divided across all 13 proposed turbines, this represents a 0.13 raptors/turbine, which is more conservative than the alternative recommendation of 0.2 raptors/turbine.

- Bird Studies Canada (2016; see attached references list) included estimates of 0.0 to 0.20 raptor mortalities / turbine / year for a multitude of projects across Alberta, Ontario, and Atlantic Canada. The proposed threshold for raptor mortality is consistent with these published mortality rates.
- Regarding an increase in carcass searches, please see response to KIA-NIRB-08

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-010
Re:	Raptor Nests, Suitable Habitat, and Buffer Distances		

Request Made by Interested Party:

The 2023 FEIS Addendum appears to downplay the occurrence of breeding cliff-nesting raptors and suitable habitat for ground-nesting raptors in and around the Modification PDA. The WMMP Plan includes mitigation for nesting raptors, if any are found during pre-construction surveys; however, mitigation for sensory disturbance could be improved for all nesting bird VECs.

Information Request:

- Please update the maps in Figures 2.3-6 and 2.3-7 to include all symbology and clearly display the raptor nests found within 5 km of the Modification PDA in the inset maps.
- Please commit to increasing the buffer distances for nesting waterbirds, upland birds, and raptors if birds exhibit disturbance behaviours at the current distances listed in the WMMP Plan V.12.

B2Gold's Response to Request Provided on June 15th, 2023:

- Updated maps showing all raptor nests within 5 km of the Modification PDA are appended below. No ground-nesting raptor nests have been observed within 5 km of the Modification PDA, and one peregrine falcon nest was observed approximately 3 km from the Modification PDA, and one gyrfalcon nest approximate 4 km away (within the Goose PDA), both observed more than 10 years ago. As stated in Section 2.3.7.4, aerial surveys will be conducted prior to construction to confirm current cliff-nesting raptor nest locations and occupancy status. In addition, the east Modification PDA is within the Goose PDA; therefore the habitat was already considered lost in the FEIS. As stated in Section 2.7.3.4 of the FEIS Addendum, "The potential for loss of ground-nesting habitat was evaluated for the area where the Modification footprint extends beyond the Goose PDA." And "The Modification footprint is primarily contained within the Goose PDA; therefore, very little additional habitat loss is expected beyond what has already been assessed and permitted."
- B2Gold has committed to nesting setbacks in the WMMP Plan of the following:
 - Minimum of 100 m around raptor nests, with a preferred setback of 1.5 km.
 - Minimum of 30 m from waterfowl nests, with a preferred setback of 150 m for ducks, 500 m for geese and 750-1000 m for loons.
 - Suggested buffers of 100 m for songbirds and 100-300 m for shorebirds.

These minimum and preferred setback distances provide some operational flexibility for the Environmental Manager to implement site-specific mitigation that considers the activities planned, species involved and other mitigation measures that may be used. If the Environment Manager determines that the preferred buffer distance is inoperable (e.g., construction work is critical to continue closer than the 500 m recommended buffer for geese), then the Environment Manager will contact ECCC and KIA, if time allows, for advice on mitigation activities and reducing the buffer to the minimum. When a buffer or setback is implemented, the nest will be monitored and the breeding success of the raptor will be reported in the annual WMMP (see Sections 10.1.3.2 and 10.2.1.2 of the WMMP Plan). In addition, the observation of a nesting bird in an area slated for development will trigger communications with the GN (raptors) or CWS (upland breeding birds), depending on the species, and will trigger adaptive management, in the form of setting a work buffer around the nest (Section 10.2.1.2 of the WMMP Plan).

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-11
Re:	Raptor Nests, Suitable Habitat, and Buffer Distances		

Request Made by Interested Party:

Sabina's standwatch and standard area surveys in 2019 did not closely follow ECCC/CWS' recommended protocols, which resulted in challenges with data interpretation. Fall standwatch surveys and ARU deployment appeared to miss or incompletely capture the peak migration period, and ARU data were lacking for spring migration (already noted by the KIA, and a commitment was made by Sabina within the updated March 2023 version of the FEIS Addendum to conduct additional spring ARU surveys). These data gaps must be rectified through additional, well-designed baseline studies to increase confidence in Sabina's effects assessments for migratory birds and raptors in the 2023 FEIS Addendum.

Information Request:

- Please follow EC and CWS (2007a) guidance for future standwatch surveys (passage migration counts) and standard area shoreline surveys (point counts), including adequate coverage of the study area/Modification PDA.
- Please use multiple data sources to estimate spring and fall migration timing in addition to TK and local knowledge, such as the Audubon's Bird Migration Explorer. Sabina would need to request the contributing datasets included in the Bird Migration Explorer to complete data analyses.
- Please consider year-round deployment for future ARU studies, with regular battery checks, to avoid uncertainties around migration timing and collect data during the summer breeding season.

B2Gold's Response to Request Provided on June 15th, 2023:

- Baseline studies were conducted using guidance from CWS (2007a). In summary, the referenced baseline surveys included:
 - Passage migration counts during the peak migration period for both fall and spring:
 - Counts were conducted for at least 6 hours per survey site as indicated in CWS (2007a).
 - Sites were selected based on clear views of the surrounding landscape within the Modification PDA.
 - The PDA changed between collection of fall 2020 migration data and spring 2022 migration data, therefore survey locations were updated to accommodate design changes.
 - Shoreline surveys (point counts) were conducted at 12 waterbody sites across the Modification PDA in fall. PRISM surveys were conducted at 9 sites upland sites rather than point counts, because these methods are better at detecting shorebirds while still being effective for songbirds.
 - Surveys fall within the recommended 20 sites (CWS 2007a).
 - No open water was present within multiple kilometers of the Modification PDA during spring migration, therefore shoreline counts were not conducted for the spring migration period.

- B2Gold has used site-specific IQ, local knowledge and site-based field surveys to identify the timeframes when birds are migrating through the project site in spring and fall. B2Gold is already using IQ, Landuser knowledge, 2019-2022 ARU data and field surveys and the 2023 ARU data when it is complete, as well as liaised with CWS to access their ARU network in NWT and Nunavut. CWS was driven to establish their ARU network because the published data (suggested above by the KIA) wasn't accurate enough. One of the important lessons from these data is that the spring and fall migrations occur over several weeks and so it is relatively easy to sample the migration without fear of missing a short pulse of birds moving through the area.
- ARUs will not be left out year-round. ARUs are out this year for spring migration, breeding and fall migration. The ARUs are checked periodically to replace batteries and ensure that they are working, including prior to fall migration. They will not be left out during the winter as there are no birds during the winter and temperatures in the Arctic are too cold for the ARUs to reliably function.

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-12
Re:	Separate Analyses Needed for WTG Monitoring		

Request Made by Interested Party:

It is unclear in the WMMP Plan V.12 whether wildlife monitoring for the WTGs will be analyzed and reported separately in annual reports. The KIA requests that WTG monitoring be analyzed separately to evaluate predicted effects from the 2023 FEIS Addendum, at least where it is possible to disentangle effects (e.g., mortality and attraction caused by the WTGs versus other parts of the Back River mine).

Information Request:

- Please state explicitly in the WMMP Plan that WTG monitoring data will be analyzed and reported separately.
- Please complete analysis of regional collar monitoring for ZOI separately for the Goose site and the Modification PDA or provide rationale for why this would not be possible.
- Please report on any changes in migration pathways and time that migratory caribou spend clearing the area around the WTGs before and after they are operating. Please consider including these objectives in the WMMP Plan for Monitoring for Seasonal Ranges of Caribou and/or Near Real-time Collar Monitoring.

B2Gold's Response to Request Provided on June 15th, 2023:

- Please see the response to KIA-NIRB-06, bullet #5 for separating monitoring for the WTG and Goose mine site.

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-13
Re:	WMMP Plan V.12 – Caribou Protection Measures (appendices)		

Request Made by Interested Party:

Sabina has developed The Caribou Decision Tree and caribou management infographics as supporting documents for the WMMP Plan, presumably to be used by Project staff on a day-to-day basis. Some critical information (e.g., heightened mitigation during sensitive periods, caribou group size thresholds, minimum flight altitude) in these appendices are missing or do not match the main body of the WMMP Plan and will need to be revised.

Information Request:

- Please make the requested revisions in Appendix 1 and 2 of the WMMP Plan V.12, as described in the Detailed Review Comment.

B2Gold's Response to Request Provided on June 15th, 2023:

- Thank you we acknowledge some discrepancies. The Appendices will be updated to match the body text on the next iteration of the WMMP Plan.

Interested Party:	Kitikmeot Inuit Association (KIA)	TRC No.:	KIA-NIRB-14
Re:	Changes to Caribou Seasonal Distribution and Timing		

Request Made by Interested Party:

An analysis of Bathurst caribou collar data from 1997 to 2019 found spatial and temporal trends in range use that may have implications for caribou mitigation and management at the Back River Project. Sabina should consider analyzing collar data up to 2021 (or 2022, if available) to confirm these trends and adjusting the dates of caribou sensitive periods (including calving, post-calving, and early summer; currently defined as June 5 to July 31) if needed.

Information Request:

- Please update caribou range maps in Project documents to include the most up-to-date collar data (2021 or later).
- Please consider analyzing caribou collar data up to 2021 (or 2022, if available) to identify/confirm annual trends in caribou seasonal distribution and phenology, as was found for the Bathurst herd by Mennell (2021).
- Please include changes to caribou range phenology as a trigger for adaptive management and adjust the definition of caribou sensitive periods (i.e., transition dates) as needed in the WMMP Plan and other Project documents.

B2Gold's Response to Request Provided on June 15th, 2023:

- Updated range maps have been produced and are appended below. The maps are produced with individual core habitat kernels for each year spanning the last 10 years from 2012 to 2022. The maps are organized by season, including winter, spring migration, calving, post-calving, summer and fall. The maps show similar distribution of caribou as provided in the 2013 FEIS with the following important points:
 - The calving and post-calving areas of Bathurst and Beverly have remained relatively fixed in location since 2010 and do not overlap the project.
 - The Bathurst herd does not overlap the project in any season in any year.
 - The Beverly herd calving and post-calving areas are in the Queen Maud Gulf Migratory Bird Sanctuary approximately 250-400 km to the north-west of the Goose site.
 - The Beverly herd spring migration continues to cross the project area in a wide swath as they travel from NWT to Queen Maud Gulf.
 - The Beverly herd summer, fall and winter distribution continues to overlap the project site in many years.
- The WMMP Plan already includes a commitment to monitor the vulnerability and seasonal distribution of Bathurst and Beverly caribou herds and adjust mitigation accordingly. When conducting our analyses we reference available sources for the definitions of seasons (e.g., spring, fall, winter) published by the GNWT and BQCMB who are responsible for the management of these herds.

Interested Party:	Nunavut Impact Review Board (NIRB)	TRC No.:	NIRB-001
Re:	Caribou Stress Hormone Study		

Request Made by Interested Party:

The Proponent stated: "Should the stress hormone study determine that caribou are having negative physiological responses to Project activities, then potential Project stressors will be adaptively managed." (FEIS Addendum, section 7.2.2.3, p.7-49). It is unclear what is the threshold level of stress hormone which will trigger the adaptive management plan. The Proponent also does not explain a range of stress hormone acceptable for its monitoring.

Information Request:

- Sabina should define its stress hormone threshold and the acceptable range.

B2Gold's Response to Request Provided on June 15th, 2023:

- B2Gold appreciates the comment. Stress hormone science is a rapidly evolving field that has changed since this original commitment was made. The science will likely evolve more prior to operations. Given this rapidly changing field of science, when it is time to complete this study, B2Gold will meet with the CTAG. Note that the CTAG is a requirement of the NIRB project certificate. Details regarding stress hormone thresholds and the acceptable range will be defined with the CTAG members at this time, closer to when the program will be implemented (i.e., during operations).

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-01
Re:	Geotechnical Hazards – Seismic Activity		

Request Made by Interested Party:

There is a reference in the text stating that a “summary of seismicity with respect to Project infrastructure is detailed in Tables 2.2-1, 2.2- 2, and 2.2-3.” The text also states that “Spectral acceleration and peak ground acceleration (PGA) values are presented in Table 2.2- 4”; but the tables with those labels do not correspond to seismic analysis or parameters.

The data should be provided to support CIRNAC’s review of Sabina’s analysis and conclusions.

Information Request:

- CIRNAC recommends that Sabina adjust the text/document to reference the correct tables and present the data as described to understand seismic activity within the modified PDA.

B2Gold’s Response to Request Provided on June 15th, 2023:

- B2Gold Nunavut apologizes for the error and clarifies that the references should have correlated to tables within the original FEIS (Tables 2.2-1, 2.2-1, and 2.2-3, Chapter 2, Volume 9) which was previously reviewed and approved by CIRNAC. The Property remains within a location of low seismicity.

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-02
Re:	Impact of Wind Tower and Solar Panel Foundations on Permafrost		

Request Made by Interested Party:

In the Information Request to the Back River Project Energy Centre FEIS Addendum, CIRNAC commented that Sabina did not provide a discussion relating to potential impacts of wind turbine generators (WTGs) and solar panels on permafrost. Sabina provided some clarification in their Responses to Information Requests; but more information is required on proposed permafrost monitoring.

Information Request:

CIRNAC recommends that Sabina:

- Provide further details on potential impacts of the WTGs and/or solar panel foundations on permafrost and proposed mitigation measures.
- Provide further detail on permafrost monitoring that will be conducted to confirm the effectiveness of the proposed mitigation measures and to ensure no permafrost degradation happens (i.e., establishing baseline conditions, installation of ground thermal cables in the area of the proposed works, and incorporation of routine monitoring of the cables into a Thermal Monitoring Plan).

B2Gold's Response to Request Provided on June 15th, 2023:

- B2Gold has an extensive understanding of the permafrost and thermal regime within the Back River Project Potential Development Area and refers CIRNAC to the original FEIS and specifically Volume 2, Chapter 7, Site-Wide Geotechnical Properties Report which was reviewed and approved by CIRNAC. In addition, there are multiple terms and conditions in the existing Back River Project (TC #12) which commit B2Gold to continued permafrost monitoring on the Project. Wind turbines, relative to existing Project Infrastructure, will contribute minimal to no latent heat to the permafrost regime, and additionally will not be constructed on the tundra but rather an aggregate pad which will allow the permafrost to aggrade within its foundations. Similarly, the solar panels will be placed on an aggregate pad and furthermore on a raised tubular platform which will minimize the transfer of thermal energy from the panels to the permafrost regime. It is also a direct requirement of B2Gold Nunavut Type A Water Licence (2AM-BRP1831) to conduct third party geotechnical inspections of all project infrastructure, and that inspection will occur on the renewable energy components.
- As mentioned above, B2Gold has an extensive understanding of the permafrost and thermal regime within the Back River Project Potential Development Area and refers CIRNAC to the original FEIS and specifically Volume 2, Chapter 7, Site-Wide Geotechnical Properties Report. In addition, and as mentioned throughout the FEIS Addendum, final engineering and geotechnical drilling must occur in advance of construction. If the proposed renewable energy center is approved, infrastructure will also be incorporated within the thermal monitoring plan which is a direct requirement of the Back River Project Certificate No. 007.

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-03
Re:	Permafrost and Sensitive Landform Mitigation and Monitoring Terms and Conditions		

Request Made by Interested Party:

As part of the review, CIRNAC was to identify NIRB PC No. 007 terms and conditions (T&C) that may require amendment to reflect the “Back River Project Energy Centre” Project Proposal. The conditions as stated for T&C #12 and T&C #13 do not include the energy infrastructure such as wind turbines and solar infrastructure. Back River PC 007 T&C #12 and T&C #13 should be updated to reflect the energy infrastructure such as wind turbines and solar infrastructure.

Information Request:

CIRNAC recommends that if the Project Proposal is accepted, that:

- The Back River PC 007 T&C #12: Terrestrial Environment – Permafrost Monitoring be updated to reflect the requirements for monitoring of energy infrastructure such as wind turbines and solar panels.
- The Back River PC 007 T&C #13: Terrestrial Environment - Sensitive Landform Mitigation and Monitoring be updated to reflect the requirements for monitoring of energy infrastructure such as wind turbines and solar infrastructure.

B2Gold’s Response to Request Provided on June 15th, 2023:

- It’s B2Gold’s opinion that if approved, the renewable energy center infrastructure would be included within the Project’s facilities and infrastructure and therefore be included automatically within the above-mentioned terms and conditions, so we are therefore supportive of whichever direction the NIRB chooses.

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-04
Re:	Freshwater Environment		

Request Made by Interested Party:

Insufficient information was provided on the existing environment to complete an evaluation of the potential effects of three proposed stream crossings as part of the Modified PDA.

Information Request:

CIRNAC recommends that Sabina:

- Provide a map of the three watercourse crossings to show the location of each within the Project footprint.
- Update management plans to ensure compliance with conditions in the Type A Water License (2AM-BRP1831 Amendment No.1) and Fisheries Act Authorization (12-HCAACA7-00007) and commitments as identified in this Back River Project Energy Centre FEIS Addendum.

B2Gold's Response to Request Provided on June 15th, 2023:

A map has been provided, as requested. The map is attached to the response package.

B2Gold is committed to update management plans (e.g., Road Management Plan), as per requirements of the current Nunavut Water Board Type A Water License (No. 2AM-BRP1831) for the Back River Project.

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-05
Re:	Hydrology (Description of Hydrology in Interim Closure and Reclamation Plan (ICRP))		

Request Made by Interested Party:

The ICRP states: “The majority of proposed infrastructure at the Goose Property lies within the Queen Maud Gulf Watershed, which flows northwest and enters the ocean on the west side of Bathurst Inlet.”

The Queen Maud Watershed may not flow in the direction indicated, and instead flows northeast via the Ellice River and enters the ocean to the east of Bathurst Inlet. This aspect may be important as it relates to the downstream receiving waters and their extents.

Information Request:

- CIRNAC recommends that Sabina confirm the direction of the Queen Maud Watershed flows and accordingly update the ICRP, if required.

B2Gold’s Response to Request Provided on June 15th, 2023:

B2Gold would like to clarify that most of the proposed mining infrastructure at the Goose Property lies within the Queen Maud Gulf Watershed, which flows north and enters the ocean on the east side of Bathurst inlet. The southwest Modification Potential Development Area, as shown in Figure 1.1-3, is situated in the Back River Watershed, which flows east and enters the ocean south of Gjoa Haven.

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-06
Re:	Hydrology (Assessment of Mitigation Measures within Site Water Monitoring and Management Plan)		

Request Made by Interested Party:

There are references in the text of the ICRP to a Site Water Monitoring and Management Plan (Section 5.2.3.1, p.5-13), but this document was not included in the documents available for review.

This may be important since the ICRP states that “To limit the potential impacts to the receiving environment from contact, site water associated with waste rock storage areas will be managed in accordance with the Site Water monitoring and Management Plan.” Therefore, the Site Water Monitoring and Management Plan is a key document to evaluate the potential impacts of site water on the receiving environment.

Information Request:

- CIRNAC recommends that Sabina provide the Site Water Monitoring and Management Plan in the documents available for review.

B2Gold’s Response to Request Provided on June 15th, 2023:

- Please find the Site Water Monitoring and Management Plan attached.

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-07
Re:	Vegetation (Vegetation and Species of Conservation Concern)		

Request Made by Interested Party:

No information was provided on vascular plants or lichen species, or species of conservation concern occurring within the Modification PDA, or assessment of potential Project impacts to these species occurring within this area.

Information Request:

CIRNAC recommends that Sabina:

- Provide information on vascular plants, lichen, and species of conservation concern possibly occurring within the Modified PDA, particularly within the WTG locations and new access roads.
- Provide an assessment of potential Project impacts to these species.

B2Gold's Response to Request Provided on June 15th, 2023:

The 2012 Ecosystems and Vegetation Baseline Report (Appendix V5-4A of the FEIS) includes lists of the rare vascular plants, mosses and lichen (Tables 3.10-1 to 3.10-3) that were found within the Project LSA which encompasses the Modification PDA. Special landscape features were classified based on their likelihood to support rare plants or culturally valued plant species. The potential impact on special landscape features, which was assessed in both the FEIS and the Modification Package, can be equated to the potential impact on rare plants.

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-08
Re:	Vegetation (Vegetation Monitoring Plan)		

Request Made by Interested Party:

There are references in the text to a Vegetation Monitoring Plan, however, it is dated prior to the submission of the FEIS Addendum and was not included in the documents available for review. The 2020 plan should be updated to better reflect the current Project, including the Modification. The Vegetation Monitoring Plan for the Project should encompass the current proposed Project layout.

Vegetation Monitoring Plan is a key document to evaluate the potential impacts to vegetation and effectiveness of the mitigation measures.

Information Request:

- CIRNAC recommends that Sabina update the 2020 Vegetation Monitoring Plan to reflect the proposed Modification, and the updated version made available for review.

B2Gold's Response to Request Provided on June 15th, 2023:

The existing 2020 Vegetation Monitoring Plan (VMP) includes permanent monitoring plots that are located at distance gradients from the Potential Development Area which includes the Modification Area. Changes to vegetation species, abundance and health from the Modification would be captured by the existing VMP. The VMP is implemented during construction and operation activities which includes the addition of the Modification.

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-09
Re:	Waste (Petroleum Hydrocarbon Contamination)		

Request Made by Interested Party:

The ICRP does not include a summary of Post Closure Commitments pertaining to petroleum hydrocarbon contamination.

Information Request:

CIRNAC recommends that Sabina provide additional information whether further monitoring or remediation will take place if sampling indicates that petroleum hydrocarbon impacted soils remain at the time of closure and reclamation of the landfarm.

B2Gold's Response to Request Provided on June 15th, 2023:

- B2Gold refers CIRNAC to Table B-015 Closure Objectives and Criteria – Buildings and Equipment, in the Interim Closure and Reclamation Plan. Specifically, the “Closure Objectives” and “Closure Criteria” for “Land Component” and the “Removal of Contaminated Soils”. An assessment will be carried out to identify areas where soils may be contaminated by hydrocarbons in accordance with applicable guidelines and removed for remediation to the landfarm if necessary.

Interested Party:	Crown-Indigenous Relations and Northern Affairs (CIRNAC)	TRC No.:	CIRNAC-TRC-010
Re:	Waste (Asbestos)		

Request Made by Interested Party:

Section 7.3.4.1 states that “Asbestos that has been immersed or fixed in a natural or artificial binder or included in a manufactured product is not considered waste asbestos; it is considered a hazardous waste and will be disposed of accordingly”. The Government of Nunavut 2011b guideline indicates that nonfriable asbestos containing materials (those immersed or fixed in natural or artificial binder) are not considered waste asbestos. It indicates that non-friable asbestos does not need to be specially packaged for transportation or disposal. Monitoring plans should be updated to reflect applicable territorial and federal guidance for review as part CIRNAC’s review, including health and safety around the removal of non-friable, asbestos-containing materials.

Information Request:

- CIRNAC recommends that Sabina updates the Landfill and Waste Management Plan to reflect applicable territorial and federal guidance for asbestos waste.

B2Gold’s Response to Request Provided on June 15th, 2023:

- B2Gold commits to updating the Landfill and Waste Management Plan for the 2023 Annual Report with the above information, or during the next update of the Landfill and Waste Management Plan, whichever comes sooner.

Interested Party:	Fisheries and Oceans Canada (DFO)	TRC No.:	DFO-TRC-01
Re:	Watercourse Crossings		

Request Made by Interested Party:

Three culverts will be installed during construction of the all-weather road. DFO recommends a rationale be provided for using culverts instead of bridges during the construction of the all-weather roads, and recommends the Proponent assess fish passage during low, medium, and high flows when designing the culverts.

Information Request:

- DFO recommends the Proponent provide a rationale for using culverts instead of bridges during the construction of the all-weather roads.
- DFO recommends that an assessment of fish passage for high, low, and average flows also be included as part of the culvert design process.

B2Gold's Response to Request Provided on June 15th, 2023:

The proposed culvert design is a suitable design for the small watercourse crossings, with specifications that will meet the engineering requirements for a crossing in Nunavut, while maintaining the same ecological functions as a bridge (e.g., maintaining unobstructed flows and passage for fish during fish migrations). Specifically, the culvert crossings will be designed for the 1-in-100-year flood event, will incorporate a hydraulic design for fish passage during spring flow conditions, and will include embedded natural stream bed material (or equivalent) as habitat for fish and aquatic life where watercourses are fish-bearing or potentially fish-bearing. Final designs will be provided to the Nunavut Water Board, as per requirements of the Back River Project Type A Water Licence and will be provided to Fisheries and Oceans Canada for their review in advance of crossing construction.

Interested Party:	Environment and Climate Change Canada (ECCC)	TRC No.:	ECCC-TRC-01
Re:	Inconsistent Dimensions for Wind Turbine Generators		

Request Made by Interested Party:

The third paragraph on page 1-12 states that the hub height is approximately 81 m resulting in an overall height of 150 m. However, Figure 1.3-1 shows a hub (tower) height of 111 m and a total height of 180 m, and the text on page 1-14 also describes the tower height of 111 m. As winds often increase with height, a turbine generator with a higher height will tend to be exposed to stronger winds, and hence, potentially generate more electricity, which would lead to greater substitution of diesel generator emissions.

Information Request:

- ECCC requests that the discrepancy in wind turbine generator dimensions be resolved so that the electricity generating capability and reduction of GHG emissions can be better assessed.

B2Gold's Response to Request Provided on June 15th, 2023:

- The Wind Tower Generator (WTG) model to be used has not yet been selected as the final engineering is ongoing. B2Gold agrees with ECCC's comments and looks forward to providing updated GHG emission reduction numbers once final engineering is complete.

Interested Party:	Environment and Climate Change Canada (ECCC)	TRC No.:	ECCC-TRC-02
Re:	Metrics for Assessing Visibility		

Request Made by Interested Party:

Clarity on application of temporary shutdowns during low visibility conditions and metrics for assessing visibility.

Information Request:

ECCC asks the Proponent to:

- Clarify during which periods the temporary shutdown measures would be implemented; and
- Provide detailed metrics that will be used to determine low visibility conditions for commencing temporary shutdowns.

B2Gold's Response to Request Provided on June 15th, 2023:

- Temporary shutdown measures would be implemented during the fall migration, which is when foggy conditions may occur near the WTGs.
- Details on the metrics that will be used to determine low visibility conditions for commencing temporary shutdowns will be finalized in the Migratory Birds Protect Plan. An example of how this will be done is the presence of fog will be visually assessed by B2Gold during potentially foggy days (primarily during late August and September). The presence of fog will be recorded assigning a presence/absence value for when visibility is lower than approximately 300 m for at least 15 consecutive minutes. If visibility is lower than 300 m for at least 15 consecutive minutes during fall migration, the turbines will be shut down until fog improves, in consultation with the Environment Manager and the on-site manager. Details regarding shutdown protocol will be included in the Migratory Birds Protection Plan and will be presented to the CTAG prior to operation of the wind turbines.

Interested Party:	Environment and Climate Change Canada (ECCC)	TRC No.:	ECCC-TRC-03
Re:	Migratory Birds Protection Plan (MBPP)		

Request Made by Interested Party:

ECCC would like to review the Migratory Birds Protection Plan (MBPP).

Information Request:

- ECCC asks to be engaged during the drafting of the Migratory Bird Protection Plan, along with other interested parties.

B2Gold's Response to Request Provided on June 15th, 2023:

- The Migratory Bird Protection Plan will be developed with input from the CTAG and ECCC.

Interested Party:	Environment and Climate Change Canada (ECCC)	TRC No.:	ECCC-TRC-04
Re:	WMMP Contact Information		

Request Made by Interested Party:

Throughout the WMMP the Proponent has referred to parties that should be contacted in the event of any incidents involving wildlife. An appendix or section that includes a table of contacts and when each should be contacted, should be added and updated on an annual basis to ensure that this information is readily available to all staff.

Information Request:

- ECCC asks the Proponent to add a section or appendix on relevant contacts in the event of any wildlife related incidents.

B2Gold's Response to Request Provided on June 15th, 2023:

As per the WMMP Plan (Sections 11.2.1.3 and 12.2.1.2), reporting of mortalities will follow the existing Term and Condition (TC) #46 in Sabina's Back River Project Certificate, and mortalities will be reported to ECCC, as per TC #59 ("Any incidents of bird mortalities associated with project activities are to be recorded and reported to Environment and Climate Change Canada. Information regarding these incidents shall be included in the Proponent's annual report to the Nunavut Impact Review Board.").

B2Gold already includes details regarding contact information should an incident occur within detailed SOPs to be used on site by the Environment Manager. Contact information is included in the SOPs rather than the WMMP Plan to ensure the proper contact information remains up to date, as the SOPs are updated regularly. B2Gold will ensure this information is clearly stated in the next iteration of the WMMP Plan, including for ECCC to be notified when a relevant wildlife incident occurs (i.e., migratory birds).

Interested Party:	Health Canada (HC)	TRC No.:	HC-TRC-01
Re:	Noise Complaint Resolution Process		

Request Made by Interested Party:

A communications plan and noise complaint resolution process are recommended to minimize impacts on traditional land users and on-site, off-duty workers.

Information Request:

HC recommends that the NIRB request the following from the Proponent:

- Develop and implement a communications plan that would include notifying the public prior to any particularly noisy activities or an accident or malfunction that results in unforeseen changes to the acoustic environment at receptor locations.
- Implement a noise complaint resolution process for public complaints that arise related to noise emissions from the wind farm or airstrip, that outlines:
 - the steps for filing and investigating a complaint, and
 - potential monitoring and mitigation activities that may be explored, and how complaints will be reported to relevant authorities.

Health Canada. (2017). Guidance for Evaluating Human Health Impacts in Environmental Assessment: Noise. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.

B2Gold's Response to Request Provided on June 15th, 2023:

- B2Gold has an existing Community Involvement Plan (CIP) that outlines the methods and strategies it employs to engage the public, keep them informed of ongoing Project activities and Project changes, and provide opportunities for feedback to be received.
- B2Gold has also developed a Stakeholder Grievance Mechanism (SGM) using available best practice guidance. The SGM serves as a tool to strengthen stakeholder trust and support for the Project, and helps to identify actual and potential impacts B2Gold needs to address through corrective actions. The SGM applies to a range of Project-related topics including community and worker health and well-being. The existing SGM is comprehensive and capable of addressing noise-related complaints that arise related to noise emissions from the Project. The SGM also clearly outlines the steps for filing and investigating a complaint, identifying potential monitoring and mitigation activities that may be explored, and how complaints will be publicly reported. For example, the indicator 'number of grievances filed pertaining to the subsistence economy and land use' is already reported on through B2Gold's annual socio-economic monitoring reports to NIRB, and serves to indicate whether Project-induced changes in this area are occurring. Availability of the SGM continues to be advertised to the public through various means (e.g., during public / stakeholder meetings; during Project site visits by B2Gold's Community Liaison Officer; through site advertising).

References:

Community Involvement Plan (CIP; NIRB Public Registry Identification #338509)
Stakeholder Grievance Mechanism (SGM; NIRB Public Registry Identification #338510)

Interested Party:	Health Canada (HC)	TRC No.:	HC-TRC-02
Re:	Engagement and Consultation with Indigenous Groups		

Request Made by Interested Party:

Given that the Project Regional Study Area (RSA) area is not currently used for traditional land use activities, the Proponent acknowledged in their response to Health Canada IR-02 that “these areas overlap with some historic Inuit hunting areas and travel routes described in TK [traditional knowledge] studies previously conducted for the Project.” As such, the Proponent committed to “continue to monitor for potential changes in this area (e.g., through Term and Condition No. 80) and will consider updating its adaptive management plans if any substantial trends in increasing land user activity around the Goose Property are noted.”

HC supports the Proponent’s commitment to continue monitoring land use activities and encourages ongoing communication with traditional land users and other community members to ensure that the conclusions made by the Proponent remain current and accurate. Further clarification is needed to define how a substantial trend in increasing land user activity will be determined.

Information Request:

HC recommends that the NIRB request the following from the Proponent:

- Clarify whether the community-reported change in traditional land use in the RSA is due to the existing mining activities and provide justification that the additional activities are not likely to result in further impacts.
- Describe how increases or decreases in land use trends in the study area will be measured.

B2Gold’s Response to Request Provided on June 15th, 2023:

B2Gold affirms that ‘community-reported change in traditional land use in the RSA’ has not been documented by the Company. What the results of previously completed TK and land use studies for the Project¹ have in fact indicated are:

- The region in and around the Goose Property Area has never been identified as a major Inuit camp / gathering place or described as a key destination for Inuit harvesting.
- Inuit land use activities of the area reflect those also documented elsewhere in the broader study area.
- The Goose Property Area continues to be located within a much larger area accessed by Inuit for land use and harvesting activities.

More simply, the Goose Property Area does not appear to have been an area that ever experienced substantial and/or frequent Inuit land use. Approved Project monitoring results show this trend of limited (or no) use is continuing.

The proposed Modification is not anticipated to result in further impacts in this area and its new considerations do not result in significant changes to any of the existing land use effects assessments.

¹ See for example NIRB Public Registry Identification #300909, #300910, #300911, #300912, and #301398.

Potential changes in land use trends in the study area will continue to be monitored through B2Gold's annual socio-economic monitoring reports submitted to NIRB, using various indicators and information.² This includes monitoring the number of land use visitor person-days at Project sites, number of times public use of the WIR is reported, and number of grievances filed pertaining to the subsistence economy and land use. In addition, qualitative perspectives (e.g. comments provided during community engagement for the Project) are included in B2Gold's reports and may provide additional information on potential Project-related changes observed by local stakeholders. B2Gold is also an active member of the Kitikmeot Socio-Economic Monitoring Committee (KSEMC) and Back River Socio-Economic Monitoring Working Group (SEMWG), where additional opportunities for engagement are created. Together, these sources of information provide B2Gold with sufficient information to track potential changes in land use in the Project vicinity.

² B2Gold's Socio-Economic Monitoring Plan (SEMP; NIRB Public Registry Identification #338510) describes the methods and indicators used in B2Gold's socio-economic monitoring program, in more detail.

Interested Party:	Transport Canada (TC)	TRC No.:	TC-TRC-01
Re:	Addressing the WGF's Obstruction of Air Navigation		

Request Made by Interested Party:

In its March 2023 FEIS Addendum for the Project, the Proponent stated it is seeking approval for, among other items, a Wind Generation Facility (WGF) near the airstrip used for the operations of the mine. The Proponent has reported that the monopoles for the individual wind generation turbines will be approximately 111 m in height.

Under the CARs, any person who plans to construct or modify a building, structure or object is to notify the Minister of the proposed construction or modification if the building, structure, or object will constitute an obstacle to air navigation. This notification is required so that TC can assess the structure and plans for construction.

Information Request:

- TC requests that the Proponent complete and file the Aeronautical Assessment form (https://wwwapps.tc.gc.ca/Corp-Serv-Gen/5/formsformulaire/download/26-0427_BO_PX) with Transport Canada as required by the Canadian Aviation Regulations and TC Standard 621 at least 90 days prior to erecting the WGF. The Proponent can find further details at https://tc.canada.ca/en/corporate-services/actsregulations/list-regulations/canadian-aviation-regulations-sor-96-433/standards/standard-621-obstruction-marking-lightingcanadian-aviation-regulations-cars#chapter_4.

B2Gold's Response to Request Provided on June 15th, 2023:

- B2Gold appreciates the comment from TC and commits to doing so.

Interested Party:	Transport Canada (TC)	TRC No.:	TC-TRC-02
Re:	Lighting and Marking of WGF		

Request Made by Interested Party:

In its March 2023 FEIS Addendum for the Project, the Proponent correctly identified the WGF will need to be marked and lighted in accordance with TC's regulations and standards (see FEIS at pp. 1-15, 1-32, 2-78). In its March 15, 2023 response to information requests, the Proponent provided that it has had discussions with TC about the required marking and lighting for the WGF. TC also provided preliminary details about the lighting requirements for the WGF in its March 15, 2023 response to information requests.

Information Request:

- TC requests that the Proponent continue to consult with TC about the marking and lighting of the WGF and reminds the Proponent the WGF must be marked and lighted in conformity with TC Standard 621, which can be found at: https://tc.canada.ca/en/corporate-services/actsregulations/list-regulations/canadian-aviation-regulations-sor-96-433/standards/standard-621-obstruction-marking-lightingcanadian-aviation-regulations-cars#appendix_c.

B2Gold's Response to Request Provided on June 15th, 2023:

- B2Gold appreciates the comment from TC and commits to doing so.

Interested Party:	Government of Northwest Territories (GNWT)	TRC No.:	1
Re:	Noise Monitoring of Wind Turbines		

Request Made by Interested Party:

Concerns over the thresholds used in the tier response (i.e., staged reductions) for wind turbines.

Information Request:

- The GNWT-ECC recommends that Sabina extends the noise monitoring, as described in section 7.2.2.5 of the WMMPP, to include noise disturbance from wind turbines. The current objective is to measure the amount of noise produced by blasts to meet compliance requirements for personnel health and safety. However, noise monitoring should also be testing the predictions of the noise model used to identify tiered thresholds for staged reductions of wind turbine activities when caribou are in the project area. The results of the noise monitoring should be compared against noise audible by caribou (not only to the human ear). If noise produced by the wind turbines can be perceived by caribou past the 1 km and 1.4 km threshold, the tiered mitigation response (i.e., staged reductions) should be revised to reflect this new information accordingly.

B2Gold's Response to Request Provided on June 15th, 2023:

- Noise monitoring does include disturbance from wind turbines. Section 7.1.11 of the WMMP Plan states the following: "Finally, monitoring described in Sections 7.2.2.2, 7.2.2.4, and 7.2.2.5 will also incorporate the wind turbines, should they be built." Results of noise monitoring will be compared against thresholds and will inform adaptive mitigation.

Interested Party:	Government of Northwest Territories (GNWT)	TRC No.:	2
Re:	Zone of Influence (ZOI) of Wind Turbines		

Request Made by Interested Party:

Modification to the ZOI analysis as described in the WMMPP.

Information Request:

- The GNWT-ECC recommends that Sabina conducts the ZOI analysis separately for the Modification PDA and the Goose site rather than conducting the analysis together. If the ZOI analysis determines that caribou are avoiding the wind turbines more than initially predicted in the FEIS Addendum and the WMMPP, the tiered mitigation response (i.e., staged reductions) should be revised to reflect this new information accordingly.

B2Gold's Response to Request Provided on June 15th, 2023:

- See response to KIA-NIRB-06, bullet #5.

Interested Party:	Government of Nunavut (GN)	TRC No.:	GN TRC 01
Re:	Potential for Caribou to be Attracted to Wind Turbines		

Request Made by Interested Party:

The Final Environmental Impact Statement (FEIS) Addendum did not assess the potential for caribou to be attracted to wind turbines. The Proponent's rationale was that as caribou occur within the RSA during the summer when relief from insect harassment is sought, it was suggested no new areas of relief will be created. However, there is a paucity of information on the effect of wind turbines on insect abundance and caribou behaviour. Recent literature review suggests considerable decline in insect abundance at turbines. Moreover, caribou have been shown to use human infrastructure for insect relief.

Information Request:

- The Government of Nunavut recommends the following with respect to the above concerns:
 - That the Wildlife Mitigation and Monitoring Plan be updated to include a detailed study design for monitoring attraction of caribou to wind turbines and adaptive management actions should be identified if attraction occurs.

B2Gold's Response to Request Provided on June 15th, 2023:

- Caribou seek insect relief at various areas including those used by humans, as well as lakeshores and eskers. The caribou decide on a balance between insect relief and forage. For example, many lakeshores and eskers do not have forage either, the caribou make the decision to use them when insect relief is required. It is not anticipated that the WTGs will result in a significant increase in wind velocity surrounding the WTGs, and thus reducing the number of biting insects, thus attracting caribou to site. However, caribou behaviour and distribution will be monitored as part of the WMMP Plan (behaviour surveys, collar data analysis, remote cameras, etc.) and if caribou are attracted to the site, this will be monitored and captured as part of the overall WMMP Plan.

Interested Party:	Government of Nunavut (GN)	TRC No.:	GN TRC 02
Re:	Caribou Group Size Threshold (GST) and Mitigation and Monitoring		

Request Made by Interested Party:

Presently the Project has committed to a Group Size Threshold (GST) for when mitigation and monitoring will occur. Outside of calving season, it is proposed that the minimum GST is 25. While this threshold is likely appropriate for implementing mitigation measures (i.e., Level 4 response), behavioural monitoring of caribou response to wind farms should include a variety of group sizes (from individuals to large groups) as this may be an important covariate affecting the behavioural response of individuals.

In addition, the Final Environmental Impact Statement (FEIS) Addendum and Wildlife Mitigation and Monitoring Plan (WMMP) provide a cursory monitoring plan to examine potential effects on caribou. However, the study design has not been described and rationale for sample sizes has not been provided, despite a commitment to complete power analysis, and it is unclear what the adaptive management actions will be if an effect is detected.

Information Request:

- The Government of Nunavut recommends the following with respect to the above concerns:
 - Aligning the GST for Level 4 response with current operations, with monitoring to adjust and review by the CTAG, is reasonable based on the current information.
 - That the GST for monitoring behaviour of caribou within 1 Km of the wind turbines be reduced and data be collected from a range of group sizes (from individuals to large groups) to detect variation in response that might be due to differences in group size.
 - That analysis of caribou response to wind turbines include group size (e.g., covariate or offset) with suitable rationale for the statistical approach used.
 - That the WMMP be updated to include clearly defined study design (e.g., BACI) and detailed methods to show how an effect will be determined. Moreover, it is recommended the WMMP include suitable rationale and justification for proposed sample sizes be provided; otherwise, a plan to describe how and when the power analysis will be completed be provided.
 - That examples of adaptive management actions that may be implemented if behavioural or stress monitoring indicates an effect be listed in the WMMP.

B2Gold's Response to Request Provided on June 15th, 2023:

- B2Gold agrees to conduct behaviour monitoring for a variety of group sizes, including below 25 caribou, and this text will be added to the next iteration of the WMMP Plan.
- Analysis of these behaviour monitoring data will include group size as a covariate.
- Detailed design of the behaviour monitoring study will be discussed with the CTAG. Note that some aspects of a BACI design may not be possible – for instance sampling caribou behaviour at distances great enough to be considered control observations will be very logistically challenging since helicopter use is heavily restricted when caribou are present. At this stage, there is a goal of 10 behaviour surveys per year (WMMP Plan, Section 7.2.2.2). Caribou are not often observed at the Project with a total of 40 observations in 2020, 10 in 2021 and 37 in 2022 across the Goose site, so achieving a robust sample size at the wind tower locations will be a challenge.

- Examples of adaptive management should an effect be observed on caribou include: 1) reviewing the mitigation program at site to ensure that mitigation has been conducted properly, 2) reviewing the results of monitoring programs in relation to mitigation measures to determine if there are any altered response to different mitigations that may inform adaptive management and 3) working with the CTAG to determine potential next steps. These examples will be added at the next time the WMMP is updated.

Interested Party:	Government of Nunavut (GN)	TRC No.:	GN TRC 03
Re:	Assessment and Baseline Surveys for Bird Migration Rates		

Request Made by Interested Party:

The Sabina Back River Project 2013 Final Environmental Impact Assessment (FEIS) Addendum assessed risk of direct mortality to migratory birds and raptors and included (as Appendix B) the results of a baseline study from 2019-2022, where Program for Regional and International Shorebird Monitoring (PRISM), standard area, standwatch, and autonomous recording unit (ARU) surveys were completed to document the presence, composition, and abundance of breeding birds, occurrence of staging areas, and migration rates of diurnal and nocturnal migrants. However, results indicate sampling may not have been sufficient, particularly for migration surveys.

Information Request:

- The Government of Nunavut recommends the following with respect to the above concerns:
 - That additional baseline surveys during spring and fall migration (including using ARUs) be completed prior to construction to accurately describe migration patterns, capture peak abundance in both spring and fall migration seasons, and measure the variation in migration rates in the study area.
 - That adequate maintenance efforts be implemented to ensure ARUs deployed for migration survey remain functional through the survey period with no data loss.
 - That additional baseline weather conditions (specifically the timing, height, and density of fog) be surveyed to inform adaptive management strategy and mitigation measures.
 - That results of baseline surveys inform monitoring and mitigation measures and be incorporated into the Migratory Bird Protection Plan.

B2Gold's Response to Request Provided on June 15th, 2023:

- B2Gold is already conducting additional baseline surveys during 2023, including additional ARU surveys in spring, summer and fall. These surveys will supplement the IQ, Landuser Knowledge and field surveys conducted in 2011-2013 for the FEIS and 2019, 2020, and 2022 for the Energy Centre. During the fall 2022 CTAG meeting, the GN and KIA reviewed the available data and the KIA requested additional ARU data be collected in 2023, which B2Gold is doing. The GN did not have any comments at that time on surveys collected. ARUs are currently out recording spring migration and summer breeding. The ARUs will remain in the field through the breeding season and fall migration to obtain an additional year of data to more accurately describe migration patterns.
- B2Gold is regularly checking on the ARUs in the field to ensure proper functioning of the devices. However, field equipment failures can often be outside of our control, as electronics may fail, or wildlife could destroy equipment. B2Gold is completing regular maintenance checks in the field to minimize this possibility.
- Please see the response to ECCC-TRC-02 that discusses methods for determining fog.
- The results of baseline surveys will be used to inform monitoring and mitigation measures to be incorporated into the Migratory Bird Protection Plan.

Interested Party:	Government of Nunavut (GN)	TRC No.:	GN TRC 04
Re:	Post-Construction Monitoring and Mitigation for Avian Mortality		

Request Made by Interested Party:

The Final Environmental Impact Statement (FEIS) Addendum and Wildlife Mitigation and Monitoring Plan (WMMP) described mitigations and adaptive management approach to reducing direct mortality on migratory birds. However, details of the plan are sparse, and it is not clear the spatial and temporal effort that will be completed nor methods for reducing bias in mortality estimates. Moreover, the thresholds defined for adaptive management response are much larger than average mortality rates in other jurisdictions.

Information Request:

- The Government of Nunavut recommends the following with respect to the above concerns:
 - That the Proponent provide detail as to how inspections or monitoring (including methods and frequency) at the solar array will identify potential mortalities and include this detail in the Migratory Bird Protection Plan.
 - That adaptive management actions or staged response that will be implemented or considered be outlined, including special attention and mitigation measures that will be implemented if a species of conservation concern mortality (the defined threshold) occurs be included in the Migratory Bird Protection Plan.
 - That the threshold for adaptive management be reduced to at or below average mortality for other wind energy developments or justification should be provided for the proposed threshold of 14 birds/turbine/year and two raptors/year.

B2Gold's Response to Request Provided on June 15th, 2023:

- Details regarding methods and frequency of monitoring at the solar array for mortality will be included in the Migratory Bird Protection Plan.
- Adaptive management actions or staged response that will be implemented or considered will be outlined, including special attention and mitigation measures that will be implemented if a species of conservation concern mortality (the defined threshold) occurs will be included in the Migratory Bird Protection Plan.
- Please see the response which includes a discussion on thresholds for bird mortalities in KIA-NIRB-09.

Interested Party:	Government of Nunavut (GN)	TRC No.:	GN TRC 05
Re:	Mitigation and Protection of Nesting Birds		

Request Made by Interested Party:

The Wildlife Mitigation and Monitoring Plan (WMMP) describes how the Proponent will protect nesting migratory birds which are protected by territorial and federal legislation. However, several approaches appear unsuitable to protecting nesting birds and may cause disturbance leading to violation of legislation.

Information Request:

- The Government of Nunavut recommends the following with respect to the above concerns:
 - That when reporting the use of deterrents and hazing on nesting birds, details about the breeding status and stage of the nest and the behaviours used to determine the status be incorporated into the annual report.
 - That setbacks and buffers that are established to protect nesting birds should be monitored to confirm their efficacy, including a determination of when the nestlings fledged and left the nest naturally, given the significant discrepancy between a 30 m buffer and the setbacks recommended in Table 11.1. Alternatively, establishment should consider site- and species-specific conditions by basing the setback/buffer distance on the ‘alert’ and ‘flush’ distance as recommended by ECCC (2022).
 - That the Proponent outline in the Migratory Bird Protection Plan the conditions that would prevent implementing recommended buffers (Table 11.1) or advice from ECCC and have a strategy for monitoring the efficacy of any non-routine buffer that is established that deviates from Table 11.1 or ECCC advice and a protocol for how the nest will be protected if the mitigation implemented fails to prevent disturbance to the birds.

B2Gold’s Response to Request Provided on June 15th, 2023:

- As stated in response to GN-08 (April 2023), this mitigation is specific to mine pit walls and is not part of mitigation for the wind energy centre and is therefore outside of the scope of this assessment. However, additional information is provided here. As per the WMMP Plan, Section 10.2.1, if raptors are observed making a nest in active pits, the appropriate parties will be contacted to discuss deterrent measures. If a nest is already established in an active pit when it is first observed, the GN will be contacted to discuss appropriate mitigation measures. Cases where deterrents are used will be included in the annual report.
- A 30 m buffer (minimum) would only be implemented in unique situations where work is critical to the project. Should the Environment Manager feel that the minimum buffer distance is inoperable (e.g., construction work is critical to continue closer than the 500 m recommended buffer for geese), then the Environment Manager will contact ECCC regarding mitigation activities and buffers should time allow. If the suggested buffer cannot be implemented for logistical reasons, the Environment Manager will ensure that a minimum buffer of at least 30 m will be enforced.
- The Migratory Bird Protection Plan will include details regarding recommended buffers during construction of the WTGs.

Interested Party:	Athabasca Denesuline Né Né Land Corporation (ADNLC)	TRC No.:	AD- TC-01
Re:	Wind Turbine Mitigation and Monitoring for Sensory Disturbance		

Request Made by Interested Party:

In the WMMPP, the following thresholds to trigger management actions associated with noise from wind turbines are described:

- *During the calving, post-calving and early summer seasons (June 5 to July 31), if large groups of caribou (more than 250) are observed by wildlife monitors within 1 km of the activity, then the wind turbines will be stopped until caribou move through the area.*
- *During the calving, post-calving and early summer seasons (June 5 to July 31), if groups of caribou (25 or more) are observed within 1.4 km of the activity, then caribou behaviour will be monitored, as per Section 7.2.2.2. If caribou exhibit disturbance behaviours, the wind turbines may be stopped for one day, or until the caribou move through the area. The distance of 1.4 km was chosen because it is larger than the distance at which noise of 40 dBA is emitted from the wind turbines (1 km).*
- *During all seasons, if groups of caribou (25 or more) are observed within 500 m of the wind turbines, then they will be stopped until caribou move through the area.*

We question whether these thresholds and triggers are sufficient, and recommend that a larger distance be implemented, and smaller group sizes to trigger action. We welcome the proposed studies to determine appropriate Zones of Influence (WMMPP 7.2.2.4) and to determine group size for triggering management action (WMMPP 7.2.1.11) but in the interim suggest a lower numbers of 25 or more caribou within 4km of the wind turbines, that they be shut down.

The above conclusions of 500 m, 1 km, and 1.4 km trigger thresholds by the proponent do not consider:

- *That low frequency noise may cause annoyance/stress/disturbance in caribou at lower levels than 40 dBA, and that wind turbine sound can travel greater distances depending on topography, weather, time of day, and climate. While there is a great lack of information regarding how the noise of wind turbines might impact caribou, a recent study by Perra et al. (2022), showed that semi-domesticated reindeer in a laboratory setting responded to sounds at least as low as 30 Hz (limited by equipment that couldn't go lower) at 30 dB SPL. Caribou might be more sensitive to lower frequency sounds of wind turbines at a greater distance than detected when using a human-scale and therefore a more cautious approach is warranted.*
- *That caribou have different visual ranges than humans (Tyler et al 2016) and perceive the landscape differently than humans and therefore our understanding of caribou response to shadow flicker and the visual presence of wind turbines cannot be based on human perception. This unknown calls for greater caution.*

Information Request:

- We recommend that the distances to trigger mitigation actions, specifically, shutting down the turbines, to be increased to the distance of 4km and that ongoing monitoring determines if that distance needs to be changed.
- We also have questions about the group sizes selected to trigger each phase of mitigation action (250 caribou, 25 caribou) and would recommend a smaller number (25) be utilized rather 250, recognizing that there is a proposed study in the WMMPP to address this question.
- We recommend that a caribou-specific study be developed to better understand how the selected wind turbine sensory disturbances impact caribou, and at what distances.

B2Gold's Response to Request Provided on June 15th, 2023:

- The distance of 1 km was used because at this distance, the noise modeling indicates that noise from the turbines will have dropped below ambient noise conditions.
- Mitigation measures for caribou have already been discussed, at length, for the Project as a whole and are being adapted for the proposed windfarm.
 - During the FEIS review it was suggested by government that mitigation may be triggered during the calving and post-calving seasons when a certain density of caribou were observed near the Project site. Within the study area surrounding the Mine Site, this translates into a group of caribou exceeding 250 animals.
 - The group size of 25 animals was taken from research conducted by the GNWT that indicated that groups of greater than 30 caribou responded more strongly to disturbances than smaller groups. During review of the FEIS, the GN requested that this number be reduced to 25 animals and the company and KIA agreed to this number following the precautionary principle.
- Please see the response to KIA-NIRB-06, bullet #5 for a discussion on the logistics and next steps for separating the monitoring for the wind towers and mine site.

Interested Party:	Athabasca Denesuline Né Né Land Corporation (ADNLC)	TRC No.:	AD- TC-02
Re:	Stress Hormone Study		

Request Made by Interested Party:

Within the WMMPP Version 12, a proposed stress hormone study is described. The objectives of this study are stated to be:

Objective: *The objective of the stress hormone study is to test the FEIS and EC Addendum prediction that caribou may be disturbed by activities near the Project site. This program will determine what physiological responses caribou have to the Project site.*

The stress hormone study will occur once during operations of the Project when there are caribou on or near the Project site. If possible, this study will occur in the first two years of operations.

Information Request:

- How was the determination made to conduct the Stress Hormone Study for one year only?
- We recommend considering extending the project for the duration of the project.

B2Gold's Response to Request Provided on June 15th, 2023:

A stress hormone study was requested during the review of the FEIS for the Back River Project. B2Gold agreed to complete this study during one year of operation. After the study has been conducted, the stress response will be examined and discussed with the CTAG and the Inuit Environmental Advisory Committee; however, no additional commitments will be made to conduct this study in perpetuity prior to seeing the results.

Appendix A

References List for Migratory Birds and Raptors Sections

Back River FEIS Addendum 2023 Windfarm – References List for Migratory Birds and Raptors Sections

- Highlighted references were not in original Addendum reference list
- Unhighlighted references were in the original Addendum reference list

Aboriginal Affairs and Northern Development Canada (AANDC). 2011. Northern Land Use Guidelines - Northwest Territories Seismic Operations. Volume 09a. Minister of the Department of Indian and Northern Development, Government of Canada: Yellowknife, Northwest Territories.

American Wind Wildlife Institute (AWWI). 2017. National Wind Wildlife Research Plan 2018-2020. Washington, DC.

Arnold, T. W. and R. M. Zink. 2011. Collision Mortality Has No Discernible Effect on Population Trends of North American Birds. PLoS ONE, 6 (9): e24708.

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Appendix B

Maps

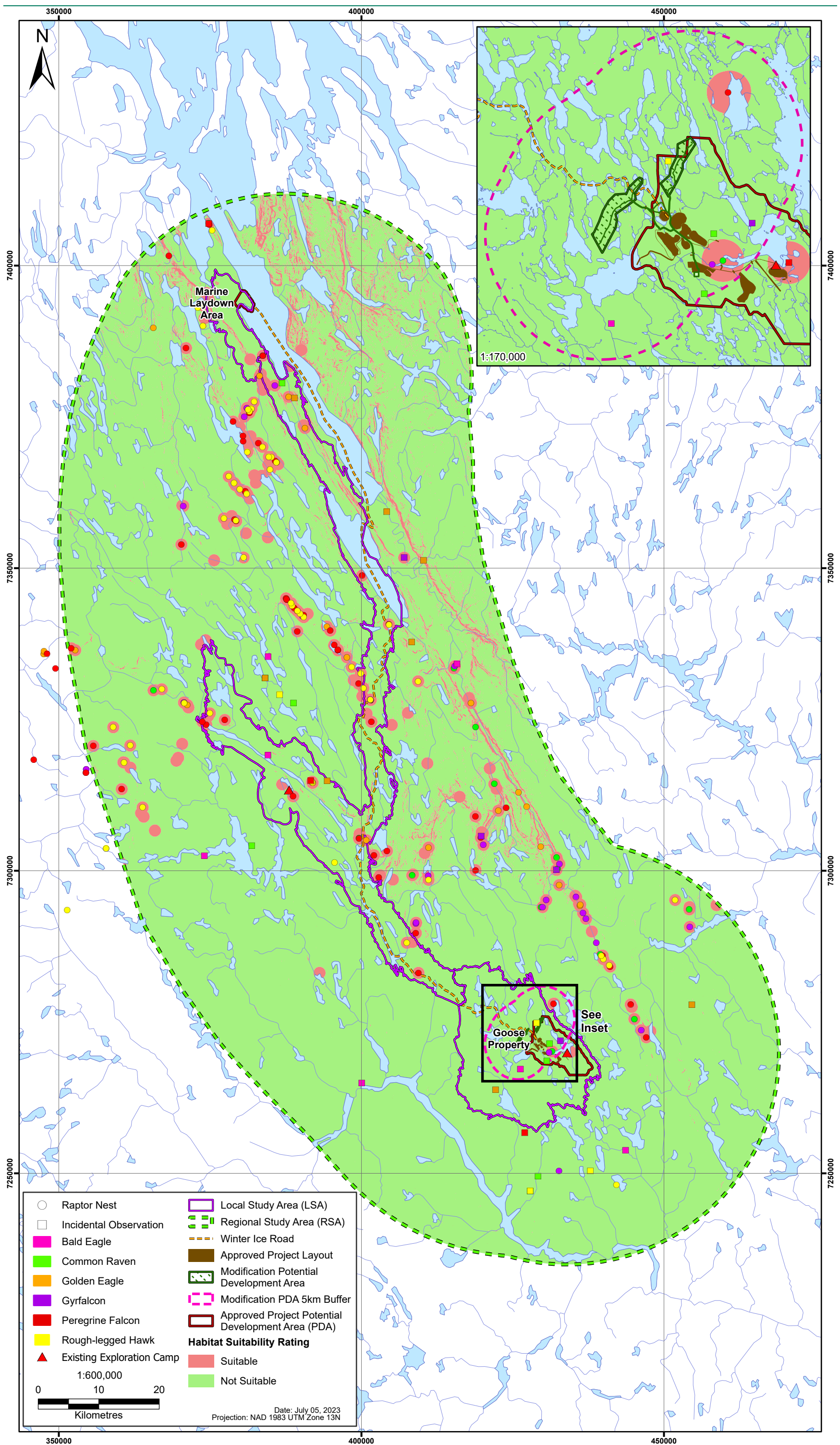


Figure 2.3-6: Raptor Cliff Nest Locations and Habitat Suitability from the Back River FEIS