



**Brucejack Gold Mine
2019 CEAA Annual Report**

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EXECUTIVE SUMMARY

Pretium Resources Inc. (Pretivm) received the Canadian Environmental Minister's Decision Statement on July 30, 2015 for the Brucejack Gold Mine, an underground gold mine located 65 km north of Stewart, British Columbia (BC). Construction activities commenced on September 5, 2015 with commercial operation achieved on July 1, 2017. 2019 marks the second full calendar year of gold production.

Pursuant to Condition 10 of the Decision Statement the Implementation Schedule was provided to Nisga'a Lisims Government, Tahltan Central Government, Tsetsaut Skii km Lax Ha Chief and the Canadian Environmental Assessment Agency (CEAA) in August 2015 with updates on February 24, 2017 and March 13, 2019.

At the mine site, fish and fish habitat protection continued to be achieved through the Operations Water Treatment Plant and continued use of the three turbidity curtains at the outlet of Brucejack Lake. Tailings were generated in 2019 and deposited as a thickened slurry on the bottom of Brucejack Lake. Waste rock from surface development (very limited quantity) and underground activities was sub-aqueously disposed of into Brucejack Lake in 2019. Effluent monitoring continued as per BC *Environmental Management Act* permit 107835 and Metal and Diamond Mining Effluent Regulations (MDMER). A MDMER Second Biological Monitoring Study Plan was filed with Environment and Climate Change Canada in January 2020.

To protect Western Toad (*Anaxyrus boreas*) during migration, five toad tunnels and a modified bridge were installed along the Brucejack Access Road in 2016 and 2017. Monitoring toad use of the tunnels and the modified bridge was undertaken with remote trail cameras and ground surveys in 2019 between June 7th and September 30th. Monitoring surveys have now been conducted for toadlet migration periods over the last three years.

Air quality management focused on measures to reduce fugitive dust. In 2017, Tsetsaut Skii km Lax Ha relocated their lodge, monitoring of air quality continues at the new lodge location. The 2019 air quality report on monitoring at the lodge was sent to Nisga'a Lisims Government and Tsetsaut Skii km Lax Ha on March 26, 2020.

Pretivm continued to maintain a security gate at the start of the Brucejack Access Road during 2019. The "No Hunting, No Fishing, No Trapping Policy" remained in place. Screening for firearms and fishing equipment continues at the security facility located at Wildfire Camp on the access road at km 1.

Measures to protect wildlife on Brucejack Access Road are enhanced by posting wildlife signage, toad tunnels, reminder signs regarding speed limits, education programs and reducing high snowbanks along the road. Reducing high snow banks allows large ungulates the opportunity to escape rather than being trapped on the road and endangered by vehicle traffic.

No heritage or archaeological sites were discovered during 2019 activities.

Record keeping continued during 2019 using the systems established in 2015.

Throughout 2019 Pretivm consulted with the Nisga'a Nation, Tahltan Nation and Tsetsaut Skii km Lax Ha primarily through the British Columbia Ministry of Forests, Land, Natural Resources Operations and Rural Development and BC Environmental Assessment Office while permitting an expansion of a License of Occupation within which additional remote avalanche control towers were installed in the fall of 2019. This permit amendment application was also discussed directly with Wildlife Advisory Committee members in June 2019.

In 2019 Pretivm worked closely with local and regional communities to provide information and to maximize benefits associated with employment, training, and business opportunities. Pretivm is in regular contact with Indigenous group's employment representatives to communicate job postings, provide information about required skills and experience, and organize recruitment events. Pretivm continues to work with Indigenous group's to identify training needs and opportunities, as well as opportunities for Indigenous owned businesses to provide goods and services. As of December 31, 2019 Pretivm's workforce comprises 1,201 people including 741 employed directly by Pretivm and 460 employed through on-site contractors. Approximately, 91% of direct employees are residents of British Columbia, 51% are residents of northwestern British Columbia, and 31% self-identify as Indigenous.

RÉSUMÉ

Le 30 juillet 2015, Pretium Resources Inc. (Pretivm) a reçu la déclaration de décision de la ministre de l'Environnement du Canada relativement au projet de mine d'or Brucejack, une mine d'or souterraine située à 65 km au nord de Stewart en Colombie-Britannique (C.-B.). Les travaux de construction ont débuté le 5 septembre 2015 et l'exploitation commerciale a débuté le 1^{er} juillet 2017. L'année 2019 est donc la deuxième année civile complète de production d'or pour cette mine.

Conformément à la Condition 10 de la déclaration de décision, le calendrier de mise en œuvre a été remis au gouvernement Nisga'a Lisims, au conseil central de Tahltan, au chef de la nation Tsetsaut Skii km Lax Ha et à l'Agence canadienne d'évaluation environnementale (ACEE) en août 2015, avec des mises à jour le 24 février 2017 et le 13 mars 2019.

Sur le site de la mine, la protection du poisson et de l'habitat du poisson a continué d'être assurée par l'usine de traitement des eaux de l'exploitation ainsi que par l'utilisation continue des trois rideaux de confinement installés au point de décharge du lac Brucejack. Les résidus produits en 2019 ont été déposés sous forme de boues épaisses au fond du lac Brucejack. Les roches stériles (en quantité très limitée) provenant du développement en surface et des travaux souterrains ont été placées dans les eaux du lac Brucejack en 2019. La surveillance des effluents s'est poursuivie en vertu du permis 107835 de l'*Environmental Management Act* de la C.-B. et du *Règlement sur les effluents des mines de métaux et des mines de diamants* (REMM). Un deuxième plan d'étude de suivi biologique en vertu du REMM a été déposé auprès d'Environnement et Changement climatique Canada en janvier 2020.

Afin de protéger le crapaud de l'Ouest (*Anaxyrus boreas*) durant sa migration, cinq tunnels à amphibiens et un pont modifié ont été aménagés le long de la route d'accès Brucejack en 2016 et en 2017. L'utilisation des tunnels et du pont par les amphibiens a été surveillée en 2019 à l'aide de caméras de suivi à distance et de relevés de terrain entre le 7 juin et le 30 septembre. Des enquêtes de suivi pour les périodes de migration des jeunes crapauds ont été réalisées chaque année depuis maintenant 3 ans.

La gestion de la qualité de l'air était axée sur des mesures visant à réduire les poussières diffuses. La nation Tsetsaut Skii km Lax Ha a déplacé son pavillon en 2017 et la surveillance de la qualité de l'air se poursuit au nouvel emplacement. Le rapport de 2019 sur la surveillance de la qualité de l'air au pavillon a été envoyé au gouvernement Nisga'a Lisims et à la nation Tsetsaut Skii km Lax Ha le 26 mars 2019.

Pretivm a maintenu une barrière de sécurité à l'entrée de la route d'accès Brucejack durant l'année 2019. La consigne « Interdiction de chasser, de pêcher et de piéger » reste en vigueur. L'examen visant à déceler toute arme à feu et tout matériel de pêche s'est poursuivi au point de sécurité du camp Wildfire au kilomètre 1 de la route d'accès.

Des mesures de protection de la faune sur la route d'accès Brucejack ont été améliorées par l'ajout de panneaux indiquant la présence de la faune, l'aménagement de tunnels à amphibiens, l'ajout de panneaux visant à rappeler les limites de vitesse, la mise en œuvre de programmes d'éducation et la réduction des

amas de neige le long de la route. Réduire le nombre de grands amas de neige permet notamment aux grands onglés de fuir plutôt que de rester bloqués sur la route et de courir des risques en raison de la circulation.

Aucun site patrimonial ou archéologique n'a été découvert durant les travaux de développement de 2019.

La tenue des dossiers s'est effectuée en 2019 selon les systèmes établis en 2015.

Tout au long de l'année 2019 Pretivm a mené des consultations avec les représentants des nations Nisga'a, Tahltan et Tsetsaut Skii km Lax Ha, principalement par l'entremise du British Columbia Ministry of Forests, Land, Natural Resources Operations and Rural Development (Ministère des forêts, des terres, de l'exploitation des ressources naturelles et du développement rural de la Colombie-Britannique) et du Bureau d'évaluation environnementale de la Colombie-Britannique, dans le cadre d'une demande d'extension du permis d'occupation sous lequel des tours de contrôle d'avalanche télécommandées supplémentaires ont été installées à l'automne 2019. Cette demande de modification du permis a également été discutée directement avec les membres du Wildlife Advisory Committee (Comité consultatif de la faune) en juin 2019.

En 2019, Pretivm a collaboré étroitement avec les communautés locales et régionales afin de fournir de l'information et de maximiser les avantages associés à l'emploi, à la formation et aux occasions d'affaires. Pretivm communique régulièrement avec les représentants responsables de l'emploi des groupes autochtones pour leur transmettre des offres d'emploi, leur donner de l'information sur les compétences et l'expérience requises et pour organiser des activités de recrutement. Pretivm continue de travailler avec les groupes autochtones afin d'établir les besoins et les occasions de formation et de voir comment les entreprises de différents groupes autochtones pourraient offrir leurs biens et services. Au 31 décembre 2019, le personnel de Pretivm comprenait 1 201 travailleurs, incluant 741 employés directs et 460 sous-traitants locaux. Environ 91 % des employés directs résident en C.-B. ; 51% sont des résidents du nord-ouest de la C.-B. et 31 % se sont déclarés autochtones.

1 Introduction

The Brucejack Gold Mine is an underground gold-silver mine located approximately 65 km north of Stewart, British Columbia (Figure 1). Current permitted production totals 18.5 million tonnes of mineralized material at an average annual rate of 1,387,000 tonnes on a calendar year basis, i.e. an average rate of approximately 3,800 tonnes per day over a minimum 14-year mine life.

Pretium received a BC Environmental Assessment Certificate (EAC # M15-01) on March 26, 2015 and a Canadian Environmental Assessment Act, 2012 Minister's Decision Statement, issued under Section 54, on July 30, 2015. All of the various provincial and federal permits required to construct, operate and decommission the mine have been received. Surface construction activities began at the Brucejack Mine site on September 5, 2015; commercial production was achieved on July 1, 2017. 2019 marks the second full calendar year of gold production.

This report has been developed to meet Decision Statement Condition 2.5: *the Proponent shall, from the reporting year where construction starts, submit to the Agency an annual report.* The report is laid out such that each heading addresses an annual reporting requirement as defined within the subheadings of Condition 2.5.

2 Condition 2.5.1: Update on Implementation of Decision Statement Conditions

Condition 2.5.1: The proponent shall document in the annual report implementation activities undertaken in the reporting year for each of the conditions set out in this Decision Statement.

Refer to Appendix A for the table titled *Brucejack Gold Mine Project: Implementation activities undertaken (as per CEAA Decision Statement Condition 2.5.1)* for a compilation of implementation activities that took place during 2019.

3 Condition 2.5.2 Informed Technology and Knowledge

Condition 2.5.2: The proponent shall document in the annual report how it has considered and incorporated the factors set out in condition 2.1 in the implementation of the conditions set out in this Decision Statement.

Condition 2.1: The Proponent shall, throughout all phases of the Designated Project, ensure that its actions in meeting the conditions set out in this Decision Statement are informed by the best available information and knowledge, including community and Aboriginal traditional knowledge, are based on validated methods and models, are undertaken by qualified individuals, and have applied the best available economically and technologically feasible measures.

In 2019 Pretium continued to engage the services of numerous reputable consulting companies (Lorax Environmental Services Ltd., ERM Consultants Canada Ltd., BGC Engineering Inc., SRK Consulting, Northwest Invasive Plant Council, Nautilus Environmental Company Inc., WSP Canada Inc.) to provide the qualified professionals (e.g. R.P.Bio., P. Eng., P. Geo.) to implement all activities according to requirements. For example, in 2019 these activities included, MDMER Second Biological Study Plan preparation (ERM), pre-clearing surveys for bats and birds prior to tree cutting (independent suitably qualified registered professional biologists), invasive plant species survey (Northwest Invasive Plant Council), review of ongoing water quality monitoring in Brucejack Creek conducted in accordance with established management plans by experienced Pretium scientific staff (Lorax Environmental), review of data collected for monitoring ambient air quality parameters at the Tsetsaut Skii km Lax Ha Lodge and reported by experienced Pretium scientific staff (ERM), monitoring the use of wildlife tunnels and a modified bridge for the passage of Western Toad (*Anaxyrus boreas*) beneath the access road, ground water monitoring well installations (BGC), review of ground water well monitoring results (BGC / Lorax), toxicity testwork on aquatic organisms (Nautilus Environmental), and technical support by WSP Canada on the operation of the sewage treatment plants. Consultation with Aboriginal groups was coordinated by BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development and the BC Environmental Assessment Office in relation to authorization amendments for the installation of additional remote avalanche control towers. Pretium directly provided information on the proposed installation of additional remote avalanche control system to the Nisga'a Lisims Government, Tahltan Central Government and Tsetsaut Skii km Lax Ha Nation for consideration and comment.

4 Condition 2.5.3 Considerations from Consultation

The proponent shall document in the annual report for conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent has considered any views and information that the Proponent received during or as a result of the consultation.

The following sections identify the Decision Statement conditions that required consultation, and how the Proponent has considered the views and information received as per the requirements set out in Condition 2.2:

- *2.2.1 provide a written notice of the opportunity for the party or parties being consulted to present their views on the subject of the consultation;*

Consultation comments were requested by written notice (email) from Nisga'a Lisims Government (NLG), Tahltan Central Government (TCG) and Tsetsaut Skii km Lax Ha Nation (TSKLH) regarding various reports filed in response to conditions of permits and authorizations. Those reports included the 2018 Economic and Social Effects Annual Report, 2018 Annual Ambient Air Quality at TSKLH Lodge, 2018 Annual Glacier Ablation Report, 2018 Annual Report for Mines Act Permit M-243 and

Effluent Permits 107835 and 107025, 2018 CEAA Annual Report, and a 2019 Economic and Social Effects Management Plan. In addition, multiple written notices requesting comments from Aboriginal groups were issued throughout the process of amending the BC Environmental Assessment Certificate and a License of Occupation in relation to the addition of remote avalanche control towers. Revisions to eighteen Management Plans that form part of the overall Environmental Management System for Brucejack were also submitted for review to the Aboriginal groups along with written request to provide comment.

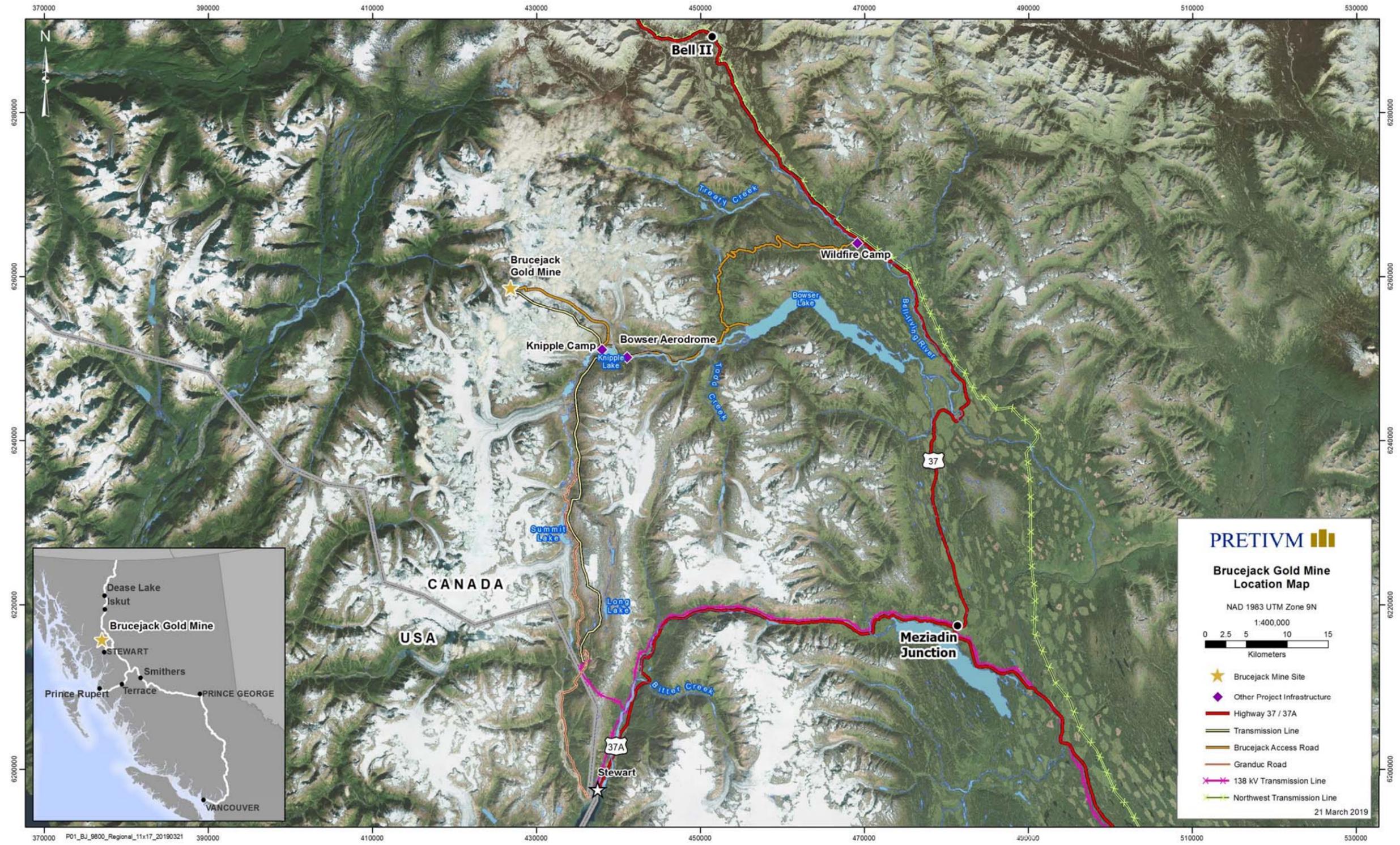


Figure 1. Brucejack Gold Mine Location Map

- *2.2.2 provide sufficient information and a reasonable period of time to permit the party or parties being consulted to prepare their views;*

Documents or copies of permit applications were distributed electronically and all parties were given a minimum of 30 days to respond to the requests for comment.

- *2.2.3 provide a full and impartial consideration of any views presented by the party or parties being consulted; and*

Responses received from the parties being consulted and Pretium responses are summarized relative to relevant Decision Statement condition in sections 4.2 through 4.7, below.

- *2.2.4 advise the party or parties that have provided comments on how the views and information received have been considered by the Proponent.*

4.1 Condition 2.4.2

Discuss consultation activities relative to Condition 2.4.2: Where the results of the monitoring and analysis indicate issues with respect to accuracy of the environmental assessment and/or the effectiveness of any mitigation measures that may lead to adverse environmental effects, identify the means by which the Proponent determines whether additional mitigation measures are required, including the need for consultation with other parties in reaching that determination.

There were no exceedances of MDMER water quality authorized limits of deleterious substances in 2019. There were also no exceedances of permit limits of BC *Environmental Management Act* Discharge Permits 107835 or 107025.

Discussion with Environment and Climate Change Canada in regard to the MDMER First Biological Monitoring Study report "Brucejack Gold Mine: *Metal Mining Effluent Regulations* Environmental Effects Monitoring First Interpretive Report" was undertaken in 2019. Environment and Climate Change Canada queried the differences between the samples results between the reference station (upstream of Brucejack Lake) and the exposure station (discharge point downstream of Brucejack Lake). ERM consulting biologists reported that they consider the differences to be the result of intrinsic differences between the sample sites and that there is no significant difference between the results of the 2018 study sampling event and 2017 baseline sampling at the exposure station.

No other monitoring required by the Decision Statement identified the need for adjustment to mitigation measures, thus there were no other relevant consultation requirements in 2019.

4.2 Conditions 5.2 and 5.4

Discuss consultation activities relative to Condition 5.2: The Proponent shall, in consultation with the Nisga'a Nation and Tsetsaut/Skii km Lax Ha, monitor and assess any changes to ambient air quality at the Tsetsaut/Skii km Lax Ha Lodge that result from the Designated Project during all phases for particulate matter (10 microns in diameter or less) and fine particulate matter (2.5 microns in diameter or less) using the Canadian Ambient Air Quality Standards of the Canadian Council of Ministers of the Environment as a benchmark, as well as for nitrogen oxide, sulphur dioxide and carbon monoxide.

Ambient air quality monitoring at the Tsetsaut Skii km Lax Ha Lodge was conducted throughout 2019. As in past years monitoring was supported by the installation of a passive air sampling system (PASS) at the Lodge and use of a portable 3M EVM-7 Environmental Monitor. Ambient NO₂ and SO₂ were measured monthly with the PASS sampler, while monitoring for PM₁₀, PM_{2.5} and CO was completed quarterly using a portable air analyzer. A memorandum regarding the 2019 monitoring results at the Tsetsaut Skii km Lax Ha Lodge was prepared and was provided to the NLG and Tsetsaut Skii km Lax Ha on March 26, 2020. In 2019, results of monitoring for NO₂, SO₂ and CO were comparable to 2018 sampling results; particulate matter concentrations were significantly reduced in 2019 compared to 2018 concentrations.

Discuss consultation activities relative to Condition 5.4: The Proponent shall develop and implement, in consultation with the Nisga'a Nation and Tsetsaut/Skii km Lax Ha, a follow-up program based on the monitoring specified in condition 5.2 to evaluate the effectiveness of mitigation measures identified under condition 5.1. The follow-up program shall start with construction and ceases at the end of the decommissioning phase.

During the permitting process in 2015, Pretium consulted the NLG and TSKLH as part of the BC Mine Development Review Committee on the development of the Air Quality Monitoring Plan. Ambient air quality monitoring results for 2016, 2017, 2018 and 2019 were below Canadian Ambient Air Quality Standards of the Canadian Council of Ministers of the Environment benchmarks. The memorandum regarding 2019 monitoring results at the Lodge was provided to the NLG and TSKLH for review. No responses to the prior reports were received. Any future request for consultation on results of monitoring will be followed up by Pretium.

In July 2017 Bowser Camp was deactivated and re-established as Bowser West Camp in the westernmost corner of Bowser License of Occupation (SK920922). TSKLH also moved their Lodge to Bowser West site in 2017, however, there has been no observed occupancy since the fall of 2018. During 2019 Bowser West Camp was deactivated with the only remaining activities being road maintenance, equipment storage, aerodrome usage and mineral exploration crew use for drill core logging and sampling. In 2019 dust suppression mitigation was undertaken using water and a Ca/Mg chloride brine mixture applied around the general Bowser site and on the access road. Tsetsaut Skii

km Lax Ha were consulted in 2018 on the application of brine mixture for dust mitigation prior to the initial use of the mixture, and in relation to a spill of brine mixture that occurred along the access road.

4.3 Condition 5.3

Discuss consultation activities relative to Condition 5.3: The Proponent shall develop and implement, in consultation with the Nisga'a Nation and Tsetsaut/Skii km Lax Ha, a mechanism for receiving noise complaints due to noise caused by the Designated Project during all phases, and respond in a timely manner to any noise complaint received.

A Noise Complaint Form was developed by Pretivm and provided to the NLG and TSKLH for their review and input on September 2, 2015. The form was revised based on comments received from the Tsetsaut/Skii km Lax Ha on September 2, 2015 and reissued shortly thereafter. No other comments and no complaints were received in 2019.

4.4 Conditions 6.6 and 6.7

(Condition 6.6) Discuss consultation activities relative to Condition 6.6: The Proponent shall, following consultation with Tsetsaut/Skii km Lax Ha, provide access to the Project Area to the Tsetsaut/Skii km Lax Ha for traditional purposes, to the extent that such access is safe.

The Traffic and Access Management Plan, which states that “Persons authorized to use the Brucejack Access Road will include First Nations people conducting traditional use activities under authorization of their Nation’s government”, was reviewed during the Mines Act-Environmental Management Act Permits Application review process in 2015, at which time comments from the Tsetsaut Skii km Lax Ha were received and reflected in the Traffic and Access Management Plan which has been implemented through 2019. No requests for site access related to traditional use activities occurred in 2019.

In 2019, the TSKLH requested copies of documents related to interviews completed with TSKLH for the Traditional Knowledge and Traditional Use Report (ERM Rescan 2014) that ERM Rescan prepared about the TSKLH Nation in relation to the Brucejack Gold Mine Project. Pretivm instructed ERM (Rescan) to compile the suite of documents and send them to TSKLH.

(Condition 6.7) Discuss consultation activities relative to Condition 6.7: The Proponent shall, following consultation with the Nisga'a Nation, provide access to the Project Area for the Nisga'a Nation to exercise rights under the Nisga'a Final Agreement, to the extent that such access is safe.

The Traffic and Access Management Plan, which states that “Persons authorized to use the Brucejack Access Road will include First Nations people conducting traditional use activities under authorization of their Nation’s government”, was reviewed during the *Mines Act-Environmental Management Act*

Permits Application review process in 2015, no comments were received from the Nisga'a Nation. No requests for site access related to traditional use activities occurred in 2019.

4.5 Condition 6.8

Discuss consultation activities relative to Condition 6.8: Develop and implement, in consultation with the Nisga'a Nation and Tsetsaut/Skii km Lax Ha, a follow-up program to determine the effectiveness of the mitigation measures used to avoid mortality of fauna, including ungulates and furbearers, along the access road and to verify the accuracy of the environmental assessment.

During the permitting process in 2015, Pretivm consulted the Nisga'a Nation and the Tsetsaut Skii km Lax Ha on the development of the Wildlife Management Plan (WMP). Pretivm proposed that a Wildlife Advisory Committee would be an appropriate venue for discussion of the effectiveness of mitigation measures, wildlife mortalities, accuracy of impacts to wildlife and potential additional mitigation measures. As per the WMP, Pretivm established a Wildlife Advisory Committee with NLG, TSKLH, TCG and BC Ministry of Forests, Lands and Natural Resource Operations attending committee meetings in April 2016, May 2017 and June 2019. Committee member conflicting schedules precluded a meeting in 2018.

Prior to the meeting participants were provided a draft agenda for comment and additions, the current Traffic and Accident Management Plan for review at the meeting and a PowerPoint presentation of material to be presented and discussed at the meeting. Meeting minutes were distributed to all committee members following the meeting.

The 2019 committee discussed the mine waste management and zero tolerance for wildlife attractants policy, spill response, electric fencing around portions of lower elevation camps, wildlife around camps, bats and Western toads, Traffic and Access Management Plan, wildlife monitoring and observations along the access road, possibilities of establishing a no shooting zone around the access road, Tahltan Guardian Program, Nass Moose Management Program, avalanche control in the 59-60 km area with License of Occupation and SUP amendment applications and action items from the previous committee meeting.

Mortalities are a subject for discussion with Aboriginal groups attending the Wildlife Advisory Committee meetings as is the effectiveness of mitigation plans and potential adaptive management measures.

Also in 2019, amendments to the BC Environmental Assessment Certificate M#15-01 and Licence of Occupation 6408833 were obtained to allow for installation of remote avalanche control towers to support avalanche hazard management along the Brucejack Access Road. The Aboriginal groups participated in the amendment application review process. The NLG and TSKLH provided comments

relevant to potential impacts to wildlife and wildlife habitat tabulated in Appendix B. The TCG indicated that they had no concerns.

4.6 Condition 7.1

Discuss consultation activities relative to Condition 7.1: Develop and implement, in consultation with Aboriginal groups, an archaeological and heritage resources management plan for the Designated Project prior to construction.

The Heritage Management Plan, and associated Heritage Chance Find Procedure, was reviewed by Aboriginal groups during the *Mines Act-Environmental Management Act* Permits Application review process and completed in 2015. No comments were received. During construction activities in 2017 crews were made aware of and trained to use the Chance Find Procedure. No new archaeological or heritage resources were identified during construction activities. No new archaeological or heritage resources were found in 2019. No consultation occurred with Aboriginal groups on this topic in 2019.

4.7 Conditions 9.2 and 9.4

Discuss consultation activities relative to Condition 9.2: The Proponent shall, prior to construction, consult with Aboriginal groups to identify potential accidents and malfunctions that may result in an adverse environmental effect, and on the measures to be applied to prevent such accidents and malfunctions.

Discuss consultation activities relative to Condition 9.4: Develop and implement a communication plan, in consultation with Aboriginal groups that shall include:

9.4.1: The types of accidents or malfunctions requiring a notification by the Proponent to the respective Aboriginal groups;

9.4.2: The manner by which Aboriginal groups shall be notified by the Proponent of an accident or malfunction and of any opportunities for the Aboriginal groups to assist in the response to the accident or malfunction; and

9.4.3: The contact information of the representatives of the Proponent that the Aboriginal groups may contact and of the respective Aboriginal groups to which the Proponent provides notification.

Pretium sent a letter on September 4, 2015 to Aboriginal groups regarding Conditions 9.2 and 9.4.

Specifically the letter stated that Pretium considered the consultation undertaken during the *Mines Act-Environmental Management Act* Permits Application review process to have by and large fulfilled Condition 9.2, to consult with Aboriginal groups to identify potential accidents and malfunctions that may result in an adverse environmental effect, and on the measures to be applied to prevent such accidents and malfunctions. Though Pretium did encourage groups to review the materials provided

in the letter regarding accidents and malfunctions and invited suggestions for change or additions to the plan or further consultation on the matters, Pretium received no responses to date.

With regards to development and implementation of a communications plan concerning accidents and malfunctions (Condition 9.4), the September 2015 letter from Pretium suggested to the Tsetsaut Skii km Lax Ha and the Tahltan Central Government (TCG) that the methods of notification and contact information included in the Aboriginal Consultation Plan (developed in consultation with these groups) be used. For the Nisga'a Lisims Government (NLG), Pretium suggested that the Impacts and Benefits Agreement between Pretium and NLG provide the platform for fulfilling Condition 9.4. In 2017 an IBA was reached with the TCG and that agreement provides the platform for fulfilling Condition 9.4.

Regarding notification to Aboriginal groups about types of accidents and malfunctions, Condition 9.4.1, Pretium provided in the September 2015 letter a table of types of accidents and malfunctions, and associated risk and mitigation strategies to prevent the accident or malfunction. The table was intended as a basis for discussion of notification. Pretium also asked Aboriginal groups for suggestions on how they would like to assist in response to an accident or malfunction, as per Condition 9.4.2. To date Pretium has received no responses from any of the Aboriginal groups to this letter.

Tsetsaut Skii km Lax Ha participated in company risk assessment meetings in prior years in the Vancouver office, follow-up meetings by conference calls and until late 2018 in monthly Joint Occupational Health and Safety Committee meetings at the mine site.

In 2019 no accidents or malfunctions occurred that had the potential to cause adverse environmental effects. There was, likewise, no additional consultation with Aboriginal groups on this topic.

5 Condition 2.5.4: Follow-up Programs

Condition 2.5.4: The proponent shall document in the annual report the results of the follow-up program requirements identified in conditions 3.4, 5.4 and 6.8.

5.1 Condition 3.4: Water Quality and Fish and Fish Habitat Follow-up Program

The Proponent shall develop and implement a water quality and fish and fish habitat follow-up program that shall include:

3.4.1 Monitoring the quality of water flowing from Brucejack Lake into Brucejack Creek to verify the accuracy of the water quality and fish and fish habitat predictions in the environmental assessment; and

3.4.2 Determining whether mitigation measures implemented to protect the quality of water flowing from Brucejack Lake into Brucejack Creek and downstream fish and fish habitat are effective.

Water flowing from Brucejack Lake to Brucejack Creek continued to be monitored as per MDMER regulations and Appendix B of Effluent Discharge permit 107835, as well as the Aquatic Effects Monitoring Plan, during the reporting period. No exceedances of MDMER discharge limits were recorded. Concentrations measured at the effluent discharge point to Brucejack Creek were close to the Base Case water quality model results, indicating that the changes to surface water quality are in line with the changes that were expected and described in the original environmental assessment and subsequent permit amendment applications to increase the production rate to 3,800 tpd.

Parameters which had higher concentrations at the effluent discharge point in 2019 than baseline due to loadings from mine waste include TSS, nitrate, sulphate, antimony, and arsenic. Of these, no measurements were above the current discharge limits in PE-107835, above water quality guidelines for parameters without discharge limits, or MDMER discharge limits.

The MDMER First Biological Monitoring Study was conducted in 2017 and the interpretive report was filed with Environment and Climate Change Canada in July 2018. Environment and Climate Change Canada provided comments on the first interpretive report on April 5, 2019. The comments were considered during development of the Second Biological Monitoring Study for submission in January 2020. Water quality monitoring continues at the discharge compliance point and reference sample locations for the environmental effects monitoring. Toxicity tests results for *Daphnia magna* and Rainbow trout indicate mitigation measures implemented to protect the quality of water flowing from Brucejack Lake into Brucejack Creek and downstream are effective in protecting fish and fish habitat.

5.2 Condition 5.4: Tsetsaut/Skii km Lax Ha Lodge Ambient Air Quality Monitoring Follow-up Program

The Proponent shall develop and implement, in consultation with the Nisga'a Nation and Tsetsaut/Skii km Lax Ha, a follow-up program based on the monitoring specified in condition 5.2 to evaluate the effectiveness of mitigation measures identified under condition 5.1. The follow-up program shall start with construction and ceases at the end of the decommissioning phase.

In 2019, monthly passive monitoring of sulphur dioxide (SO₂) and nitrogen dioxide (NO₂) as well as quarterly ambient particulate and carbon monoxide (CO) sampling was completed at the Tsetsaut Skii km Lax Ha (TSKLH) Lodge. Results indicated that annual average concentrations for NO₂, SO₂, CO, PM₁₀ and PM_{2.5} were below their respective benchmarks; NO₂, SO₂ and CO concentrations were comparable to 2018 concentrations while PM₁₀ and PM_{2.5} concentrations were significantly reduced in 2019 from 2018 concentrations. No additional mitigation measures are considered necessary.

5.3 Condition 6.8: Effectiveness of Mitigation Measures to Avoid Mortality of Fauna Follow-up Program

The Proponent shall develop and implement, in consultation with the Nisga'a Nation and Tsetsaut/Skii km Lax Ha, a follow-up program to determine the effectiveness of the mitigation measures used to avoid mortality of fauna, including ungulates and furbearers, along the access road and to verify the accuracy of the environmental assessment.

During the permitting process in 2015, Pretivm consulted the Nisga'a Nation and the Tsetsaut Skii km Lax Ha on the development of the Wildlife Management Plan (WMP). The monitoring activities outlined in the WMP were ongoing in 2019 as summarized below.

Access Road Monitoring:

Wildlife monitoring all on the access road was based on incidental wildlife observations recorded through various means (i.e. call-ins, observation forms, reporting during daily meetings). Incidental wildlife observations are not indicative of actual animal numbers. Repeated observations by different people of the same animals on the same day or over a short time period occur. Sightings are naturally weighted towards larger animals of concern for traffic and personal safety while commonplace occurrences such as single birds or even migrating flocks of birds rarely get recorded.

The main values in accounts of wildlife sighting locations is to inform efforts for safety of personnel, directing mitigation efforts for wildlife and relevance to the time of year. The most common sightings reported in 2019 were black bears (35% of reports), followed by moose (20% of reports), fox (14% of reports), grizzly bears (5%) and mountain goats (4% of reports). Accumulated totals from 2015 through 2019 are 783 black bears, 458 moose, 71 grizzly bears, 383 mountain goats, 35 wolves, and 23 wolverine.

Bears are of particular concern for personnel safety. From 2015 through 2019, black bears have been observed to be distributed along the access road from Highway 37 to 55 km within forested areas. They are mainly seen in spring and summer with 53% of total sightings split between Bell Irving River valley and west of Knipple Lake. There is no evidence of habituation of bears observed near camps as they do not commonly intrude nor have access to food or garbage. From 2015-2019, the majority of Grizzly bears observations (2/3rds) were in summer with the remainder in fall and spring.

Accumulated (2015 through 2019) sightings of moose sightings are concentrated (82%) along Bowser River valley between 35 km on the access road and 60 km immediately west of Knipple Camp. The remaining percentage were observed between Highway 37 and 35 km. Most moose sightings are in winter along Bowser River valley east of Bowser Aerodrome, none have been observed in camps.

Accumulated (2015 through 2019) sightings of Mountain goats were limited to between 46 km to 70 km of the access road with 53% of the total sightings on the mountain north of Knipple Lake and 46% on the mountains on the north side on Knipple Glacier. A few have been observed on the road near 58 to 59 km and along the mountains south of Knipple Glacier. The large proportion of sightings on the hill north of Knipple Camp are skewed by camp personnel observing goats during off-work leisure time.

Wolverine have been observed between 22 km and 70 km, with the majority (78%) observed between Bowser Aerodrome and the head of Knipple Glacier. Wolves have been primarily observed between Highway 37 and 46 km on the access road although there have been 2 sightings near the Head of Knipple Glacier.

Building and Waste Management Monitoring

Internal environmental audits on buildings and the Mine Site Area were routinely conducted by Pretium Waste Management and Environmental Department personnel in 2019. These audits included checks following the requirements of applicable Environmental Management Plans (EMPs) (e.g., Wildlife Management Plan and Waste Management Plan), and relevant regulatory requirements.

Incidental Wildlife Monitoring

Incidental wildlife observations are recorded through various means (i.e. call-ins, observation forms, reporting during daily meetings). Personnel (including all contractors and visitors to site) are trained on the importance of reporting wildlife observations during new employee orientations and this practice is emphasized periodically at daily safety meetings. Signage is posted at various sites reminding people to report wildlife observations, and drivers call out wildlife sightings over the radio to raise awareness to other drivers.

There were 40 reported wildlife observations in 2019 within the Mine Site Area, exclusive of access road to the head of Knipple Glacier. A total of 10 species and 59 animal sightings were recorded, including 26 red fox, 20 Canada geese, 4 American marten, 2 yellow-rumped warblers, 2 grizzly bear, 1 hoary marmot, 1 wolverine, 1 bushy tailed woodrat, 1 barn swallow and 1 unidentified sparrow. The grizzly bear sightings were at a considerable distance from work activities or buildings. These records may be multiple observations of the same animal.

No incidental observations of bats were reported in the underground workings during 2019.

Pre-clearing Surveys:

Surveys for stick nests, nesting birds and bat habitation were conducted at Knipple Camp, around Bowser Aerodrome and a few localized spots along the access road. The Knipple Camp and localized locations along the road were directed for removal of danger trees in 2019 while surveys around Bowser Aerodrome were undertaken for planned clearing associated with flight path obstacle

removal to meet Transport Canada regulations for aircraft safety. No stick nest or active songbird nests were observed.

Transmission Line

A visual inspection of the transmission line was conducted in 2019 by Pretivm Maintenance, who visually inspect the line annually during a temporary shutdown. There were no reports of nests or bird mortalities observed.

Mountain Goat and Avalanche Monitoring

There are several areas around the mine that warrant avalanche control. Pretivm Mountain Safety personnel complete an Avalanche Control Pre-blast Checklist which includes scanning the area for mountain goats prior to commencing avalanche control. No mountain goats were observed within avalanche zones during avalanche control work in 2019. Details of avalanche control, monitoring methods and observability are presented to the WAC annually.

Toad Tunnel Monitoring

Mitigation measures for protection of Western Toad (*Anaxyrus boreas*) during migration, along Brucejack Access Road comprise construction of five toad tunnels and a modified bridge installed in 2016 and 2017. Monitoring toad use of the tunnels and the modified bridge, began in 2017 and continued in 2019, by use of remote trail cameras and by ground surveys. Trail cameras indicate a variety of small wildlife use the tunnels, they rarely capture images of young toads. As toadlets are difficult to see in camera images the toadlet numbers are undoubtedly under counted given that monitoring by an individual is not feasible or warranted on a 24-hour basis. Ground surveys in 2019, between June 7th and September 30th noted the following for Western Toad:

- at 23.4 km tunnel 2 adults (1 in the tunnel);
- at 23.8 km tunnel 1 sub-adult (outside the tunnel);
- at 25.7 km tunnel 6 sub-adult and 107 toadlets (44 toadlets inside the tunnel);
- at 25.85 km tunnel 7 adults, 3 sub-adults and 184 toadlets (5 adult, 1 sub-adult and 90 toadlets inside the tunnel);
- at 26 km tunnel 1 adult, 2 sub-adults and 349 toadlets (1 sub-adult and 245 toadlets in the tunnel); and
- at 42 km modified bridge no Western Toads have been observed at this location over the 3 seasons of monitoring and it is suspected that the potential breeding pond is located a sufficient distance north of the access road that no migrations of toadlets cross the road in that vicinity and that more suitable habitat occurs north of the pond.

Western Toads observed outside the tunnels were seen both upslope and downslope of the tunnels, making their way to or from a tunnel along fence lines or in the general monitoring area. The high observed use of the tunnels and the annual reoccurrence of toad migration at these tunnel locations under the road suggests that mitigation measures in place are effective.

Incidents (including Wildlife Collisions/ Mortalities)

Wildlife mortalities recorded in the Mine Site area in 2019 included 2 red foxes, 2 yellow-rumped warblers, one hoary marmot and one unidentified sparrow. The cause of death in all instances was undetermined. In 2019 along the access road there were 2 incidents of grouse struck by vehicles.

Moose and grizzly bear mortalities have not occurred anywhere on the Mine Site area or along the access road since construction began in 2015, which is less than forecasted in the environmental assessment (Pretium, 2014); mitigation measures in effect for large ungulate and bears are considered effective. One moose mortality was recorded in 2019 on Highway 37 when a truck outbound from Brucejack struck a moose about 85 km north of Kitwanga. While predictions for mortalities of small furbearers were not included in the environmental assessment camp hygiene and waste handling, particularly of food wastes and litter along the access road, have resulting in few instances of mortality of small furbearers by intrusion into camps or on the access road, thus also considered to be effective.

6 Condition 2.5.5: Additional Mitigation Measures Implemented

Condition 2.5.5: The proponent shall document in the annual report any additional mitigation measures implemented or proposed by the Proponent, as determined under condition 2.4.

Condition 2.4: The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement:

2.4.1. Undertake monitoring and analysis to verify the accuracy of the environmental assessment as it pertains to the particular condition and/or to determine the effectiveness of any mitigation measure(s);

2.4.2. Where the results of the monitoring and analysis indicate issues with respect to the accuracy of the environmental assessment and/or the effectiveness of any mitigation measures that may lead to adverse environmental effects, identify the means by which the Proponent determines whether additional mitigation measures are required, including the need for consultation with other parties in reaching that determination; and

2.4.3. If additional mitigation measures are required pursuant to condition 2.4.2, implement and monitor these additional mitigation measures pursuant to condition 2.4.1.

No additional mitigation measures were identified or proposed in 2019 as a result of the follow-up programs identified in Conditions 3.4, 5.4, or 6.8 of the Decision Statement.

APPENDIX A:
Decision Statement Conditions
Implementation Activities Undertaken

APPENDIX A

Brucejack Gold Mine Project Implementation Activities Undertaken (as per CEEA Decision Statement 2.5.1)

2019 CEEA Annual Report

Section	Sub-section	Condition	Implementation Activities Undertaken
2	General Conditions		
2.1		The Proponent shall, throughout all phases of the Designated Project, ensure that its actions in meeting the conditions set out in this Decision Statement are informed by the best available information and knowledge, including community and Aboriginal traditional knowledge, are based on validated methods and models, are undertaken by qualified individuals, and have applied the best available economically and technologically feasible measures.	Refer to 2019 CEEA Annual Report Section 3.
2.2		The Proponent shall, where consultation is a requirement of a condition set out in this Decision Statement:	<p>Generally, consultation is guided by the Aboriginal Consultation Plan developed by Pretivm, as a condition of their Environmental Assessment Certificate, with review and input from First Nations. Consultation activities are also directed per the Impact Benefit Agreements established with the Nisga'a Nation and Tahltan Nation, and those that may be established with the Tsetsaut Skii km Lax Ha.</p> <p>Specific to this Decision Statement, consultation is required in relation to:</p> <ul style="list-style-type: none"> • Condition 5.2 - monitoring and assessment of changes in annual air quality • Condition 5.3 – development and implementation of noise complaint mechanism • Condition 5.4 – development and implementation of follow-up program for air emission mitigation measures • Conditions 6.6 and 6.7 – providing access to the Project Area for traditional purposes • Condition 7.1 – development and implementation of archaeological and heritage resources management plan • Condition 9.4 – development and implementation of an accidents and malfunctions communications plan <p>These consultation requirements have been met as outlined in the table entries below, specific to each relevant condition.</p>
	2.2.1	Provide a written notice of the opportunity for the party or parties being consulted to present their views on the subject of the consultation;	This practice has been implemented and will continue for the duration of the Project.
	2.2.2	Provide sufficient information and a reasonable period of time to permit the party or parties being consulted to prepare their views;	This practice has been implemented and will continue for the duration of the Project.
	2.2.3	Provide a full and impartial consideration of any views presented by the party or parties being consulted; and	This practice has been implemented and will continue for the duration of the Project.
	2.2.4	Advise the party or parties that have provided comments on how the views and information received have been considered by the Proponent.	This practice has been implemented and will continue for the duration of the Project.
2.3		The Proponent shall, where consultation with Aboriginal groups is a requirement of a condition set out in this Decision Statement, and prior to initiating that consultation, communicate with each Aboriginal group to determine the manner by which to satisfy the consultation requirements referred to in condition 2.2.	Consultation will continue to be guided by the Aboriginal Consultation Plan developed by Pretivm, as a condition of their Environmental Assessment Certificate, with review and input from the Aboriginal groups. Consultation activities will also continue to be directed per the Impact Benefit Agreements established with the Nisga'a Nation and Tahltan Nation, and those that may be established with the Tsetsaut Skii km Lax Ha.
2.4		The Proponent shall, where a follow-up program is a requirement of a condition set out in this Decision Statement:	
	2.4.1	Undertake monitoring and analysis to verify the accuracy of the environmental assessment as it pertains to the particular condition and/or to determine the effectiveness of any mitigation measure(s);	Monitoring and analysis of data to verify the accuracy of the environmental assessment has been implemented as per BC <i>Mines Act</i> permit M-243 issued by the Ministry of Energy, Mines and Petroleum Resources, BC <i>Environmental Management Act</i> permits 107835 (effluent) and 107025 (air) issued by the Ministry of Environment and Climate Change Strategy, and Metal and Diamond Mining Regulation as required under the <i>Fisheries Act</i> , in addition to various other permits and management plans that require monitoring.

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Brucejack Gold Mine Project Implementation Activities Undertaken (as per CEAA Decision Statement 2.5.1)

2019 CEAA Annual Report

Section	Sub-section	Condition	Implementation Activities Undertaken
	2.4.2	Where the results of the monitoring and analysis indicate issues with respect to the accuracy of the environmental assessment and/or the effectiveness of any mitigation measures that may lead to adverse environmental effects, identify the means by which the Proponent determines whether additional mitigation measures are required, including the need for consultation with other parties in reaching that determination; and	Refer to 2019 CEAA Annual Report Section 4.1.
	2.4.3	If additional mitigation measures are required pursuant to condition 2.4.2, implement and monitor these additional mitigation measures pursuant to condition 2.4.1.	No additional mitigation measures have been required to date.
2.5		The Proponent shall, from the reporting year where construction starts, submit to the Agency an annual report, including an executive summary of the annual report in both official languages. The annual report shall be submitted by the Proponent no later than March 31 following the reporting year. The Proponent shall document in the annual report:	Refer to the 2019 and earlier CEAA Annual Reports.
	2.5.1	Implementation activities undertaken in the reporting year for each of the conditions set out in this Decision Statement;	Implementation activities undertaken are tabulated in this Appendix.
	2.5.2	How it has considered and incorporated the factors set out in condition 2.1 in the implementation of the conditions set out in this Decision Statement;	Refer to 2019 CEAA Annual Report Section 3.
	2.5.3	For conditions set out in this Decision Statement for which consultation is a requirement, how the Proponent has considered any views and information that the Proponent received during or as a result of the consultation;	Refer to 2019 CEAA Annual Report Section 4.
	2.5.4	The results of the follow-up program requirements identified in conditions 3.4, 5.4 and 6.8; and	Refer to 2019 CEAA Annual Report Section 5.
	2.5.5	Any additional mitigation measures implemented or proposed by the Proponent, as determined under condition 2.4.	No additional mitigation measures were required in 2019.
2.6		The Proponent shall publish on the Internet, or any similar medium, the annual report and the executive summary referred to in condition 2.5, the archaeological and heritage resources management plan referred to in condition 7.1, and the implementation schedule and any updates or revisions to that schedule referred to in condition 10, upon submission of these documents to the parties referenced in the respective conditions. The Proponent shall keep these documents publicly available for twenty-five years following the end of operation or until the end of decommissioning of the Designated Project, whichever comes first.	The Heritage Management Plan and the Implementation Schedule are available on Pretivm's website at: http://www.pretivm.com/sustainability/default.aspx
2.7		The Proponent shall notify the Agency in writing no later than 60 days after the day on which there is a transfer of ownership, care, control or management of the Designated Project in whole or in part.	Not applicable. No activity undertaken.
2.8		In the event another party becomes the Proponent of the Designated Project, it is bound by the conditions set out in this Decision Statement.	Not applicable. No activity undertaken.
3	Fish and fish habitat		
3.1		The Proponent shall, for all effluent discharges, comply with the <i>Fisheries Act</i> , the Metal and Diamond Mining Effluent Regulations (MDMER), and any discharge limits for effluent set by British Columbia that meet or exceed the requirements of the <i>Fisheries Act</i> and the Metal and Diamond Mining Effluent Regulations. In addition, the Proponent shall:	Pretivm has implemented effluent monitoring as per British Columbia <i>Environmental Management Act</i> permit 107835, the Brucejack Aquatic Effects Monitoring Plan and MDMER criteria. BC permit 107835 monitoring data is reported in the Brucejack Gold Mine annual reports for Mines Act Permit M-243, Effluent Permit 107835 and Air Permit 107025. The Second Biological Monitoring Design Study, per MMR requirements, was prepared in 2019 for filing in early 2020.
	3.1.1	Design and construct the perimeter ditching around the waste rock stockpile, mill building and portals to accommodate a 200-year rain-on-snow event;	Construction completed in 2017.
	3.1.2	Capture and divert surface drainage and mine water effluent to the water treatment plant for treatment prior to discharge into Brucejack Lake;	This practice has been implemented and will continue for the duration of the Project.
	3.1.3	Immobilize tailings and deposit potentially acid generating rocks on the bottom of Brucejack Lake where they shall remain submerged at all times or in decommissioned stopes; and	This practice has been implemented and will continue for the duration of the Project.

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Brucejack Gold Mine Project Implementation Activities Undertaken (as per CEAA Decision Statement 2.5.1)

2019 CEAA Annual Report

Section	Sub-section	Condition	Implementation Activities Undertaken
	3.1.4	Use multiple turbidity curtains at the outlet of Brucejack Lake.	This practice has been implemented and will continue for the duration of the Project.
3.2		The Proponent shall protect fish and fish habitat during all phases of the Designated Project, which shall include the implementation of mitigation measures to avoid causing harm to fish and fish habitat when using explosives or conducting activities in or around water frequented by fish, as well as on the Knipple Glacier.	At the mine site the mine water treatment plant continues to be operational, as well, three turbidity curtains are installed at the outlet of Brucejack Lake; a Standard Operating Procedure and management plan related to the crossing of the Knipple Glacier is in place, as are Emergency and Spill Response Plans; monitoring for hydrocarbons is undertaken downstream of the Knipple Glacier continued in 2019.
3.3		The Proponent shall, during decommissioning, reclaim riparian habitats along the access road which shall include the planting of native plant species.	Bowser and Bowser West Camps along the road have been decommissioned, however, the site remains useable for Aerodrome activities and storage; no decommissioning activities were undertaken in riparian habitats 2019.
3.4		The Proponent shall develop and implement a water quality and fish and fish habitat follow-up program that shall include:	Refer to 2019 CEAA Annual Report Section 5.1
	3.4.1	Monitoring the quality of water flowing from Brucejack Lake into Brucejack Creek to verify the accuracy of the water quality and fish and fish habitat predictions in the environmental assessment; and	This practice has been implemented and will continue for the duration of the Project.
	3.4.2	Determining whether mitigation measures implemented to protect the quality of water flowing from Brucejack Lake into Brucejack Creek and downstream fish and fish habitat are effective.	Refer to 2019 CEAA Annual Report Section 5.1
4	Migratory birds		
4.1		The Proponent shall carry out all phases of the Designated Project in a manner that protects and avoids harming, killing or disturbing migratory birds or destroying, disturbing or taking their nests or eggs. In this regard, the Proponent shall take into account Environment Canada's Avoidance Guidelines. The Proponent's actions in applying the Avoidance Guidelines shall be in compliance with the <i>Migratory Birds Convention Act, 1994</i> and with the <i>Species at Risk Act</i> .	Pre-clearing surveys for raptor nests and migratory birds continued in 2019 for those areas where timber and brush was cleared in 2019 or planned to be cleared in early 2020. No raptor nests were found nor were migratory bird nests disturbed.
4.2		The Proponent shall design and build the transmission line in a manner that prevents electrocution, discourages nesting and makes the transmission line more visible to migratory birds taking into account the Avian Power Line Interaction Committee's Suggested Practices for Avian Protection on Power Lines.	Construction completed in March 2017. A review of transmission line design and construction by a Senior Wildlife Scientist with ERM Consultants Canada confirms that the design of the transmission line and construction met the condition.
5	Health and Aboriginal peoples		
5.1		The Proponent shall implement mitigation measures to manage air emissions of the Designated Project during all phases, including:	
	5.1.1	Those mitigation measures required to comply with the Waste Discharge Regulation under British Columbia's <i>Environmental Management Act</i> for operational air emissions;	Mitigation measures implemented continued during 2019 to manage air emissions as per the <i>Environmental Management Act</i> permit 107025 and the Brucejack Air Quality Management Plan.
	5.1.2	Fugitive dust best management practices; and	In 2019, a calcium/magnesium chloride brine was applied to the Brucejack Access Road from km 0 to km 59 and to the lower camp areas to assist in suppressing fugitive dust. Road watering also continued to be used as a mitigation measure for managing fugitive dust along the Brucejack Access Road, Bowser storage area, Bowser Aerodrome and at the mine site.
	5.1.3	Use of low-sulphur diesel fuel equipment and pollution control equipment on mobile heavy equipment.	This practice has been implemented and will continue for the duration of the Project.
5.2		The Proponent shall, in consultation with the Nisga'a Nation and Tsetsaut Skii km Lax Ha, monitor and assess any changes to ambient air quality at the Tsetsaut Skii km Lax Ha Lodge that result from the Designated Project during all phases for particulate matter (10 microns in diameter or less) and fine particulate matter (2.5 microns in diameter or less) using the Canadian Ambient Air Quality Standards of the Canadian Council of Ministers of the Environment as a benchmark, as well as for nitrogen oxide, sulphur dioxide and carbon monoxide.	Refer to 2019 CEAA Annual Report Section 4.2.
5.3		The Proponent shall develop and implement, in consultation with the Nisga'a Nation and Tsetsaut Skii km Lax Ha, a mechanism for receiving noise complaints due to noise caused by the Designated Project during all phases, and respond in a timely manner to any noise complaint received.	This practice has been implemented and will continue for the duration of the Project. No noise complaints have been received to-date.

APPENDIX A

Brucejack Gold Mine Project Implementation Activities Undertaken (as per CEAA Decision Statement 2.5.1)

2019 CEAA Annual Report

Section	Sub-section	Condition	Implementation Activities Undertaken
5.4		The Proponent shall develop and implement, in consultation with the Nisga'a Nation and Tsetsaut Skii km Lax Ha, a follow-up program based on the monitoring specified in condition 5.2 to evaluate the effectiveness of mitigation measures identified under condition 5.1. The follow-up program shall start with construction and ceases at the end of the decommissioning phase.	Refer to 2019 CEAA Annual Report Section 4.2.
5.4.1		The Proponent shall inform the Nisga'a Nation and Tsetsaut Skii km Lax Ha in cases of exceedances at the Tsetsaut Skii km Lax Ha Lodge of the Canadian Ambient Air Quality Standards of the Canadian Council of Ministers of the Environment parameters specified in condition 5.2.	Ambient air quality monitoring at this site continued in 2019. No exceedances were noted in the Tsetsaut Skii km Lax Ha Lodge results. A report was provided on March 26, 2020.
6	Current use of lands and resources for traditional purposes		
6.1		The Proponent shall provide Aboriginal groups with the implementation schedule and any updates or revisions to that schedule as stated in condition 10 at the same time the Proponent provides the schedule to the Agency.	The Implementation Schedule was provided to Aboriginal groups and the Agency August 2015. An updated schedule was provided on February 24, 2017 and another on March 13, 2019.
6.2		The Proponent shall prohibit any hunting, fishing and trapping within the Project Area by the Proponent's employees and contractors hired by the Proponent, unless an employee or a contractor is provided access for traditional purposes as per condition 6.6 or for exercising rights as per condition 6.7.	This practice has been implemented and will continue for the duration of the Project.
6.3		The Proponent shall prohibit public access to the access road.	This practice has been implemented and will continue for the duration of the Project.
6.4		The Proponent shall impose speed limits on the access road taking into account provincial guidelines.	Speed limits are established in the Brucejack Traffic & Access Management Plan based on the road design, and signage in both directions of travel has been posted along the Brucejack Access Road to advise of road speed. In addition, speed limits are discussed in the Safe Work Instructions (SWI) road procedure which is issued to all drivers/contractors prior to travelling the access road.
6.5		The Proponent shall construct and maintain gaps in snow banks large enough to provide passage for fauna, including ungulates and furbearers.	Once the depth of snow warranted it, gaps in the snow banks were constructed and maintained along the access road during 2019. Additionally, for much longer sections of the road, a grader has been used to cut down the height of the snow banks to allow for wildlife passage along the length of the banks, not just at gaps. Grading practices will continue to be evaluated on an ongoing basis through the winter.
6.6		The Proponent shall, following consultation with Tsetsaut Skii km Lax Ha, provide access to the Project Area to the Tsetsaut Skii km Lax Ha for traditional purposes, to the extent that such access is safe.	Refer to 2019 CEAA Annual Report Section 4.4.
6.7		The Proponent shall, following consultation with the Nisga'a Nation, provide access to the Project Area for the Nisga'a Nation to exercise rights under the Nisga'a Final Agreement, to the extent that such access is safe.	Refer to 2019 CEAA Annual Report Section 4.4.
6.8		The Proponent shall develop and implement, in consultation with the Nisga'a Nation and Tsetsaut Skii km Lax Ha, a follow-up program to determine the effectiveness of the mitigation measures used to avoid mortality of fauna, including ungulates and furbearers, along the access road and to verify the accuracy of the environmental assessment.	Refer to 2019 CEAA Annual Report Section 4.5 and Section 5.3.
7	Physical and cultural heritage and structures, sites or things of historical, archaeological, paleontological or architectural significance		
7.1		The Proponent shall develop and implement, in consultation with Aboriginal groups, an archaeological and heritage resources management plan for the Designated Project prior to construction. The archaeological and heritage resources management plan shall take into account British Columbia's Handbook for the Identification and Recording of Culturally Modified Trees. The archaeological and heritage resources management plan shall include:	Refer to 2019 CEAA Annual Report Section 4.6. A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed in 2015 and implemented prior to the start of construction activities and in use throughout 2019.
	7.1.1	A description of structures, sites or things of historical, archaeological, paleontological or architectural significance (including Culturally Modified Trees) that may be encountered by the Proponent during construction;	A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed and implemented prior to the start of construction activities. The primary construction period ended in 2017, cultural and heritage features continue to be managed by implementation of the Heritage Management Plan and accompanying Heritage Chance Find Procedure.
	7.1.2	Procedures and practices for on-site monitoring of construction activities that may affect a structure, site or thing of historical, archaeological, paleontological or architectural significance (including a Culturally Modified Tree) and for the identification and removal of the resource; and	A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed in 2015 and implemented prior to the start of construction activities and in use throughout 2019.

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Brucejack Gold Mine Project Implementation Activities Undertaken (as per CEEA Decision Statement 2.5.1)

2019 CEEA Annual Report

Section	Sub-section	Condition	Implementation Activities Undertaken
	7.1.3	A chance find protocol if a previously unidentified structure, site or thing of historical, archaeological, paleontological or architectural significance (including a Culturally Modified Tree) is discovered by the Proponent or brought to the attention of the Proponent by an Aboriginal group or another party during construction.	A Heritage Management Plan and accompanying Heritage Chance Find Procedure was developed in 2015 and implemented prior to the start of construction activities and in use throughout 2019.
8	Species at risk		
8.1		The Proponent shall conduct pre-clearing surveys to determine distribution of Little Brown Myotis (<i>Myotis lucifugus</i>) and Northern Myotis (<i>Myotis septentrionalis</i>), and establish a 50-metre buffer zone around active hibernacula and active roosts.	This practice has been implemented and will continue for the duration of the Project. No clearing of timber suitable for bat roosts was completed in 2019, no bat roosts were found.
8.2		The Proponent shall, prior to construction and throughout all phases of the Designated Project, install and maintain roosting structures to offset if there is loss of Little Brown Myotis (<i>Myotis lucifugus</i>) and Northern Myotis (<i>Myotis septentrionalis</i>) bat roosting habitat.	No roosting structures were found during the bat roosting surveys in 2015 or during clearing activities in 2015 through 2019. However, five bat houses were installed in appropriate habitat along the access road and 5 five along the transmission line in 2017.
8.3		The Proponent shall monitor mortality of Little Brown Myotis (<i>Myotis lucifugus</i>) and Northern Myotis (<i>Myotis septentrionalis</i>) and their usage at buffer-zones and of roosting structures, to determine the effectiveness of the mitigation measures during construction and operation.	No roosting structures were found during the bat roosting surveys in 2015, during clearing activities, or during avian surveys in 2019 and no mortalities observed.
8.4		The Proponent shall construct wildlife tunnels and fencing along the access road to allow passage of the Western Toad (<i>Anaxyrus boreas</i>) beneath the road as close as possible to existing migration corridors taking into account British Columbia's Guidelines for Amphibian and Reptile Conservation during Urban and Rural Land Development in BC.	To protect Western Toad (<i>Anaxyrus boreas</i>) during migration, five toad tunnels and a modified bridge were installed along the Brucejack Access Road in 2016 and 2017. All sites were fenced to direct toads to the corridors. Monitoring of toad use of the tunnels and bridge continued in 2019, results are described in section 5.3.
9	Accidents or malfunctions		
9.1		The Proponent shall take all reasonable measures to prevent accidents and malfunctions that may result in adverse environmental effects and shall implement emergency response procedures and contingencies developed in relation to the Designated Project.	All management plans relevant to mitigate for accidents and malfunctions have been implemented.
9.2		The Proponent shall, prior to construction, consult with Aboriginal groups to identify potential accidents and malfunctions that may result in an adverse environmental effect, and on the measures to be applied to prevent such accidents and malfunctions.	Refer to 2019 CEEA Annual Report Section 4.7.
9.3		In the event of an accident or malfunction with the potential to cause adverse environmental effects, the Proponent shall:	No accidents or malfunctions with the potential to cause adverse environmental effects occurred in 2019.
	9.3.1	Notify relevant federal and provincial authorities, including notifying the Agency in writing of the accident or malfunction as soon as possible in the circumstances;	Not applicable no such occurrence in 2019.
	9.3.2	Implement immediate measures to minimize any adverse environmental effects associated with the accident or malfunction;	Not applicable no such occurrence in 2019.
	9.3.3	Submit a written report to the Agency as soon as possible in the circumstances, but no later than 30 days after the day on which the accident or malfunction took place. The written report shall include:	Not applicable no such occurrence in 2019.
	9.3.3.1	A description of the accident or malfunction and of its adverse environmental effects;	Not applicable no such occurrence in 2019.
	9.3.3.2	The measures that were taken by the Proponent to mitigate the environmental effects of the accident or malfunction;	Not applicable no such occurrence in 2019.
	9.3.3.3	A description of any residual environmental effects, and any additional measures required to address residual environmental effects; and	Not applicable no such occurrence in 2019.
	9.3.3.4	If an emergency response plan was implemented, details concerning its implementation.	Not applicable no such occurrence in 2019.

APPENDIX A

Brucejack Gold Mine Project Implementation Activities Undertaken (as per CEAA Decision Statement 2.5.1)

2019 CEAA Annual Report

Section	Sub-section	Condition	Implementation Activities Undertaken
	9.3.4	As soon as possible in the circumstances, but no later than 90 days after the day on which the accident or malfunction took place, submit a written report to the Agency on the changes made to avoid a subsequent occurrence of the accident or malfunction and on the implementation of any additional measures to mitigate residual environmental effects.	Not applicable no such occurrence in 2019.
9.4		The Proponent shall develop and implement a communication plan, in consultation with Aboriginal groups, that shall include:	Refer to 2019 CEAA Annual Report Section 4.7.
	9.4.1	The types of accidents or malfunctions requiring a notification by the Proponent to the respective Aboriginal groups;	Refer to 2019 CEAA Annual Report Section 4.7.
	9.4.2	The manner by which Aboriginal groups shall be notified by the Proponent of an accident or malfunction and of any opportunities for the Aboriginal groups to assist in the response to the accident or malfunction; and	Refer to 2019 CEAA Annual Report Section 4.7.
	9.4.3	The contact information of the representatives of the Proponent that the Aboriginal groups may contact and of the respective Aboriginal groups to which the Proponent provides notification.	Refer to 2019 CEAA Annual Report Section 4.7.
10	Implementation Schedule		
10.1		The Proponent shall submit an implementation schedule for conditions contained in this Decision Statement to the Agency, or anyone designated pursuant to section 89 of the <i>Canadian Environmental Assessment Act, 2012</i> , at least 30 days prior to construction. The implementation schedule shall indicate the commencement and completion dates for each activities relating to conditions set out in this Decision Statement.	The Implementation Schedule was provided to Aboriginal groups and the Agency August 2015.
10.2		The Proponent shall submit an update to this implementation schedule in writing to the Agency, or anyone designated pursuant to section 89 of the <i>Canadian Environmental Assessment Act, 2012</i> , every two years on or before March 31, until completion of the activities.	Revised schedules were provided on February 24, 2017 and March 13, 2019.
10.3		The Proponent shall provide the Agency, or anyone designated pursuant to section 89 of the <i>Canadian Environmental Assessment Act, 2012</i> , with a revised implementation schedule if any change occurs from the initial schedule or any subsequent updates. The Proponent shall provide the revised implementation schedule at least 30 days prior to the implementation of the change.	A revised schedule was provided on March 13, 2019 for production expansion activities.
11	Record keeping		
11.1		The Proponent shall maintain a written record, or a record in an electronic format compatible with that used by the Agency, and retain and make available that record to the Agency, or anyone designated pursuant to section 89 of the <i>Canadian Environmental Assessment Act, 2012</i> , at a facility close to the Designated Project (local facility). The record shall include information related to the implementation of the conditions set out in this Decision Statement, and the results of all associated monitoring, including:	All records required under the Decision Statement are kept in electronic format accessible at the Brucejack Mine Site and from Pretivm's offices in Smithers and Vancouver.
	11.1.1	The place, date and time of any sampling, as well as techniques, methods or procedures used;	This practice continued during 2019.
	11.1.2	The dates and the analyses that were performed;	This practice continued during 2019.
	11.1.3	The analytical techniques, methods or procedures used in the analyses;	This practice continued during 2019.
	11.1.4	The names of the persons who collected and analyzed each sample and documentation of any professional certifications relevant to the work performed that they might possess; and	This practice continued during 2019.
	11.1.5	The results of the analyses.	This practice continued during 2019.
11.2		The Proponent shall retain and make available upon demand to the Agency, or anyone designated pursuant to section 89 of the <i>Canadian Environmental Assessment Act, 2012</i> , the information contained in condition 11.1 at a facility close to the Designated Project (or at a location within Canada and agreed upon by the Agency, should the local facility no longer be maintained). The information shall be retained and made available throughout construction and operation, and for twenty-five years following the end of operation or until the end of decommissioning of the Designated Project, whichever comes first.	Required information can be accessed from the Brucejack Mine Site or either of Pretivm's offices in Smithers and Vancouver.

APPENDIX B:
**Aboriginal Group Comments Received During Application
Processes for Installation of Remote Avalanche Control Towers
along the Brucejack Access Road**

Appendix B

Summary of Aboriginal Group Comments Received During Application Processes for Installation of Remote Avalanche Control Towers Along the Brucejack Access Road

Aboriginal Group	Comment	Pretivm Response
Nisga'a Lisims Government	Assess potential adverse effects on denning Grizzly Bears.	Habitat suitability models developed during baseline studies identified 9.2 ha of potentially suitable denning habitat within the proposed LOO. However, the model results have not been ground trothed and the availability of soils of suitable depth for bear denning is not consistent through the site. Much of the area is exposed bedrock or shallow soil with patchy accumulations of talus and till. The pocketed availability of soils that may be deep enough for bears to excavate suggest that suitability is low and bears would not likely select this area for denning. The substantial human activity along the access road further limits its denning attractiveness to bears. A wildlife survey, by an ERM biologist, conducted for the road realignment, for which the avalanche control system is proposed, found "no wallows, or openings or signs of digging that may indicate bear dens".
Nisga'a Lisims Government	Assess potential to disturb Wolverine	During 2013 baseline surveys for wolverine and wolverine dens one wolverine den was detected approximately 5 km northwest of the mine site area, approximately 15 km distant from the proposed avalanche control site. During the baseline surveys Wolverine tracks were observed, including tracks 1.2 km north and 1 km west of the proposed towers. Between 2016 and 2018, incidental observations of wolverine were recorded by Pretium staff in the wildlife observation log during operation of the mine. Between km 58 and km 60, no wolverines were observed along the access road. There were four incidental sightings of wolverine between February and March, 2017, between km 55 and 57, which is greater than 2 km from the proposed avalanche control sites. The proposed avalanche control measures are proposed in an area with natural avalanche chutes; the towers are the heads of those chutes. Those natural avalanches combined with the low density of wolverine in the area reduces the likelihood of denning near the towers.
Nisga'a Lisims Government	We note that from maps provided by the province, it appears as there are three creeks in the area proposed for installing	A study conducted for the road realignment, for which the avalanche control system is proposed, found the only stream features identified were in open morainal deposits or seepage over bedrock. No fisheries values were

	<p>more avalanche control system. We note that from the information provided, we are unable to determine whether any fish are present in these creeks. However, we believe the risk to fish, aquatic plants, and water and sediment quality/quantity are very low because regulations will require installing the infrastructure a minimum distance away from the creeks and all blasting will occur during winter when the creeks will be covered with ice and snow.</p>	<p>identified for those streams and the stream banks are not vegetated. These streams drain under Knipple Glacier to Knipple Lake, a highly turbid lake with low productivity. Avalanche control in winter is unlikely to mobilize sediment, particularly as controlled avalanches are smaller and less destructive compared to natural avalanches where snow accumulates until the snow mass releases in a higher volume.</p>
<p>Nisga'a Lisims Government</p>	<p>With respect to mountain goats, we note that Figures 5.5-1 and 5.3-2 in Appendix 18-B of the EAC Application shows high winter and summer habitat value, respectively for goats within the LOO area. In addition, Appendix 18 reports 5 goats seen in the summer in the survey block encompassing the LOO and 1 in winter. We note that if these numbers are typical, then risks to mountain goats would be low. However, NLG would like some narrative on goat use within the LOO from the Proponent.</p>	<p>The area of the proposed avalanche control towers lies within survey unit (SU) 10 of the area surveyed in summer 2010 and winter 2011 for the EA application baseline, and again in summer 2017 for population monitoring. No goats were observed during the summer 2017 survey, six were observed during the summer baseline survey in 2010, and one goat was observed during the winter 2011 survey. All of these goat sightings within SU 10 were on the opposite side of the mountain, greater than 3 km away from the proposed towers. No goats were observed on the slope below the proposed avalanche control towers. During operation of the mine, mountain goats have been observed incidentally and recorded by Pretium staff on the road between km 58 and km 59 but not in winter when avalanche control is in use.</p>
<p>Nisga'a Lisims Government</p>	<p>Number of employment opportunities.</p>	<p>The actual work is quite short term as the bases for the towers will only cover a total of 13 m². There is not a lot of site preparation as tower placement is preferred upon barren rock outcrop. We expect that will be handled by current employees; potentially including some of the 52 current employees self-identified as Nisga'a citizens. Tower and base design is provided by the supplier. Helicopter placement of towers is a specialized activity that will be done by people experienced in that work especially as the towers tend to be placed upon very steep terrain requiring extensive fall protection.</p>

Nisga'a Lisims Government	Length of project.	The total length of the effort to install towers will probably be on the order of 3 months but non-specialized work will be very short term.
Nisga'a Lisims Government	Value of contract opportunities related to the project.	There are no non-specialized workforce contract opportunities.
Tsetsaut Skii km Lax Ha	Where are you moving the mountain goats. It is well known they are in the area, on the 59 km hill road at times, and cross the glacier in this area. The whole narrow corridor is goat habitat and now you want to set bombs off. Marmot, black bear and grizzly bear also frequent this area, and den in the area.	Response to the NLG information requests also address TSKLH comments.