PROVINCE OF BRITISH COLUMBIA
MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

PERMIT

APPROVING MINE PLAN AND RECLAMATION PROGRAM

(Issued pursuant to Section 10 of the *Mines Act* R.S.B.C. 1996, c. 293)

Permit: **M-243** Mine No: **0100270**

Issued to: **Pretium Resources Inc.**
Suite 2300, Four Bentall Centre
1055 Dunsmuir Street
PO Box 49334
Vancouver, BC
V7X 1L4

for work located at the:

Brucejack Mine

Issue Date	**Permit**
July 22, 2015	Approving Mine Plan and Reclamation Program

This permit supersedes and amends all previous versions of Permit M-243 issued pursuant to Part 10 of the Mines Act. All previously approved works systems are hereby transferred under this permit.

Amended at Victoria, British Columbia this 18th day of December in the year 2020.

George Warnock

George Warnock, P.Eng.
Chief Permitting Officer

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PREAMBLE

The *Mines Act* Permit application, as well as applications for changes to approved works and conditions to Permit M-243, has been submitted to the Chief Permitting Officer, in accordance with Sections 10.1 and 10.6 of the *Mines Act*, and Sections 10.1.2 and 10.1.18 of the *Health, Safety and Reclamation Code for Mines in British Columbia* (Code).

Where more than one version of information exists in the applications, the most recent version shall be considered the approved version unless otherwise stated or determined by the Chief Permitting Officer.

1. Approving Mine Plan and Reclamation Program (Issued July 22, 2015)

1.1 Application entitled "*Brucejack Gold Mine: Application for Mines Act and Environmental Management Act Permits*", dated May 2015.

1.2 Report entitled, "*Brucejack Gold Mine Project: Metal Leaching and Acid Rock Drainage Management Plan*", prepared by Pretium Resources Inc., dated June 30, 2015.

1.3 Memorandum entitled, "*Brucejack Project MA/EMA Permitting Phase – Responses to Information Requests from MEM & MOE – Groundwater Quality and Quantity Monitoring Plan*", prepared by BGC Engineering Inc., dated June 19, 2015.

1.4 Memorandum entitled, "*Brucejack Project MA/EMA Permitting Phase – Responses to Information Requests from MEM & MOE – Part 1 of 2*", prepared by BGC Engineering Inc., dated June 19, 2015.

1.5 Memorandum entitled, "*Brucejack Project MA/EMA Permitting Phase – Responses to Information Requests from MEM & MOE – Part 2 of 2*", prepared by BGC Engineering Inc., dated June 19, 2015.

1.6 Report entitled, "*Groundwater Monitoring and Sampling Protocol – Brucejack Mine; Revision 3*", prepared by Pretium Resources Inc., dated June 2015.

1.7 Letter entitled, "*Response to BC Ministry of Energy and Mines 'Information Requirements' and 'Clarifications' regarding underground geotechnical aspects of the Brucejack Project's Application for Mines Act and Environmental Management Act Permits*", prepared by BGC Engineering, dated June 18, 2015.

1.8 Report entitled, "*Brucejack Gold Mine Project - Invasive Plants Management Plan*", prepared by Pretium Resources Inc., dated July 2015.

1.9 Confidential Memorandum entitled, "*Brucejack Mine Project Mines Act Permit Application – Reclamation Cost Estimate*", prepared by ERM dated June 22, 2015.

1.10 Report entitled, "*Brucejack Gold Mine Project Wildlife Management Plan*", prepared by ERM dated July, 2015.

Application Received: March 12, 2015.
Gazette: BC Gazette June 4, 2015.
Referred: March 12, 2015.

Mine Review Committee Meetings: May 13, 2015; May 25, 2015.

2. Approving Groundwater Monitoring Plan (Issued August 26, 2015)

2.1 Report entitled "*Brucejack Gold Mine Project – Location, purpose, timing and monitoring schedule for monitoring wells to be installed to augment the Water Management Plan per Mines Act Permit M-243 Section D Part 4(c) – REV 1*", dated August 21, 2015.

Application Received: July 31, 2015.

3. Approving Updated Brucejack ML/ARD Management Plan (Issued September 9, 2015)

3.1 Report entitled "*Brucejack Gold Mine Project – Metal Leaching and Acid Rock Drainage Management Plan*", dated September 8, 2015.

Application Received: September 8, 2015.

4. Approving Temporary PAG Waste Rock Stockpile and Non-PAG Quarry (Issued March 17, 2016)

4.1 Application entitled "*Request for Authorization of Temporary Surface PAG Waste Rock Stockpile, Mines Act Permit M-243, Brucejack Mine*", dated October 18, 2015.
4.2 Application entitled "*Application for Modification of Km 72 NPAG Quarry, Permit M-243, Brucejack Mine*", dated November 3, 2015.

Application Received: November 3, 2015; November 16, 2015.
EAC M15-01 Amendment: March 10, 2016.

5. Approving Changes for Disturbance Area and Construction Water Treatment Plant (Issued August 4, 2016)

5.1 Application entitled "*Proposed Changes to Approved Disturbance Area, Mines Act Permit M-243, Brucejack Gold Mine – Amendment Application #2*", dated April 11, 2016.
5.2 Application entitled "*Application for Approval of Mine Water Treatment Plant Process Change for Nitrite Treatment*", dated April 25, 2016.
5.3 Report entitled "*Brucejack Gold Mine 2016 Freshet Water Management Plan*", dated March 2016.

Application Received: April 11, 2016.

6. Approving PAG Waste Rock Exposure Extension, Sludge Deposition with Tailings In Brucejack Lake and Chromium Management Plan (Issued April 3, 2017)

6.1 Report entitled "*Brucejack Mine: Proposed Extension for Waste Rock Storage on Surface*" dated November 10, 2016.
6.2 Report entitled "*Brucejack Gold Mine: Assessment of Long-Term Sludge Stability for In-Lake and Underground Deposition*" dated December 19, 2016.
6.3 Report entitled "*Chromium Management Plan*" dated February 23, 2017.
6.4 Report entitled "*Metal Leaching and Acid Rock Drainage Management Plan*" dated March, 2017.
6.5 Report entitled "*Operation, Maintenance and Surveillance Manual: Brucejack Gold Mine Subaqueous Waste Rock and Tailings Deposition; VERSION 04*" dated March, 2017.

Application Received: November, 2016; December, 2016 and September, 2016

7. Approving Mine Plan and Reclamation Program for Increased Production Rate and Waste Management (Issued December 14, 2018)

7.1 Application entitled "*3800 tpd Amendment Application for Permits M-243 and PE-107835*", prepared by Pretium Resources Inc., dated December 2017.
7.2 Report entitled "*Brucejack Gold Mine: Updated Subaqueous Waste Rock Dump Design*", prepared by SRK Consulting,dated October 2018.
7.3 Letter entitled "*Brucejack Gold Mine, Mine No. 0100270 MA Permit M-243 Section D.1 (d)*" dated March 8, 2018.

Application Received: April 13, 2018
Mine Development Review Committee Meetings: January 16, 2018; May 2, 2018; July 5, 2018

8. Approving West Zone Ramp, Additional Stope Development, and Underground Exploration (Issued December 18, 2020)

8.1 Application entitled "*Mines Act Permit M-243 Amendment Application: Permit Boundary Amendment*", prepared by ERM Worldwide Group Ltd., dated August 2020.
8.2 Report entitled "*OMS Manual - Water Management Plan*" prepard by SRK Consulting Inc., dated March 2020.
8.3 Report entitled "*Brucejack Gold Mine: 2020 Groundwater Model Review and Update*" prepared by Lorax Environmental, dated July 20, 2020.
8.4 Report entitled "*Brucejack Gold Mine Ground Control Management Plan – Version 7*", prepared by Pretium Resources Inc., dated October 2020.

8.5 Report entitled "*Production Ventilation Plan Brucejack Gold Mine*", prepared by Pretium Resources Inc., dated July 10, 2020.

Application Received: August 19, 2020

This permit contains the requirements of the Ministry of Energy, Mines and Low Carbon Innovation. It also is compatible, to the extent possible, with the requirements of other provincial ministries. Nothing in this permit limits the authority of other provincial ministries to set other conditions, or to act independently, under their respective permits and legislation.

The mine is located within the consultative territory of Tsetsaut /Skii-km Lax Ha and portions of the mine permitted area are located in the Nass Area as defined in the Nisga'a Final Agreement. Tsetsaut/ Skii-km Lax Ha, Nisga'a Lisims Government and Tahltan Central Government have been consulted with respect to this permit and have expressed their interests regarding potential concerns to their asserted or established rights.

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CONDITIONS

The Chief Permitting Officer hereby approves the Mine Plan and Reclamation Program as submitted in the applications, subject to compliance with the following conditions:

A. General

1. Compliance with *Mines Act* and Code

The Permittee shall ensure all work is in compliance with all sections and parts of the *Mines Act* and the Health, Safety and Reclamation Code for Mines in B.C. (Code), and the owner, agent or manager (Permittee) shall obey all orders issued by the Chief Inspector or their delegate.

2. Departure from Approval

The Permittee shall notify the Chief Inspector of Mines (Chief Inspector) in writing of any intention to depart from the approved Application(s) and this *Mines Act* permit (M-243) to any substantial degree, and shall not proceed to implement the proposed changes without the written authorization of the Chief Inspector.

3. Permit Approval

(a) Development, including surface disturbance and works, management buffers associated with 19 km of the Transmission Line extending southward from the Mine Site, and contingency buffers for mine infrastructure, encompassing approximately 607.5 ha (Figure 1a and Figure 1b), is authorized under this permit.

(b) Ore production rate shall not exceed an average annual 1,387,000 tonnes on a calendar year basis.

4. Permit

This Permit is not transferable or assignable.

5. Maintenance of Mine

The Permittee shall maintain mine facilities and infrastructure in a manner to meet design objectives and environmental protection and reclamation requirements.

6. Reports to be signed by a Qualified Professional

Unless otherwise specified in permit conditions, all reports required to be submitted under this permit the Permittee shall ensure are reviewed and signed by a Qualified Professional with applicable experience and registered in the province of British Columbia.

7. Responsibility to Reclaim

Any outstanding reclamation associated with Reclamation Permit MX-1-842 that exists within the permitted mine area for the Brucejack Gold Mine defined in Figure 1a and Figure 1b is the responsibility of the Permittee under the terms and conditions of this permit.

8. First Nations Reporting Requirements

Unless otherwise requested, the Permittee shall provide to the Tsetsaut/Skii-km Lax Ha, Nisga'a Lisims Government and Tahltan Central Council Government all material reports and plans relevant to this permit, including annual monitoring reports and material changes to the approved Reclamation and Closure Plan.

9. Compliance Status Report

The Permittee shall track compliance status of all permit conditions, inspection orders or advisories in a form acceptable to the Chief Inspector. The Permittee shall maintain a tracking table on site, and ensure it is revised when compliance changes or as required by the Chief Inspector. The Permittee shall ensure that the tracking table is available at the mine site at all times and to a Mines Inspector upon request. An annual Compliance Status report shall be submitted to the Chief Inspector by March 31st and shall include a summary of outstanding non-compliance issues and an action plan, to the satisfaction of the Chief Inspector, for meeting compliance.

B. Health and Safety

1. Mine Emergency Response Plan (MERP)

(a) The Permittee shall update the Mine Emergency Response Plan (MERP) The Permittee shall keep the MERP up to date and file updates with the Chief Inspector, and make the updated MERP available at the mine site at all times.

(b) The Permittee shall ensure that mine site employees and contractors are knowledgeable and accountable for fulfilling the actions of the MERP.

C. Geotechnical

[Repealed 2018-12-14; Section C from the 2017-04-03 permit and replaced with the following]

1. General

(a) The Permittee shall ensure that all geotechnical/designs, specifications, work plans, monitoring requirements and reports required to be prepared under section (C) are signed by a Professional Engineer and are submitted to the satisfaction of the Chief Inspector.

(b) The Permittee shall ensure that all geotechnical/designs, specifications, work plans, monitoring requirements and reports required to be prepared under section (C) are maintained on site and made available to any Inspector of Mines upon request.

(c) The Permittee shall ensure all construction is completed under the supervision of a Professional Engineer and that sufficient field reviews have been conducted to ensure that all construction and facilities are built in conformance with the design, accepted engineering practices and the Code.

(d) The Permittee shall ensure that recommendations by a Professional Engineer relating to health and safety, geotechnical stability or environmental protection are followed unless a suitable alternative course of action is approved in writing by a Professional Engineer.

(e) The Permittee shall submit an Advice of Geotechnical Incident report to the Chief Inspector for any geotechnical dangerous occurrence (as defined by the section 1.7.3 of Code) or any other incident as described in the current EMPR Advice of a Geotechnical Incident form.

2. Underground Mine

(a) The Permittee shall maintain an up to date mine design that includes computer models, drawings, calculations, specifications, and written descriptions of:

(i) The geometry of all existing and proposed excavations,
(ii) The geologic, hydrogeologic and geotechnical conditions affecting the mine, and
(iii) Excavation design and ground support design that considers stress, structure and rockmass conditions.

(b) The mine design shall be periodically, at a minimum of annually, updated to reflect site experience and the actual geological, hydrological and geotechnical conditions encountered.

(c) The Permittee shall ensure the dimensions of all excavations and pillars are within nominal tolerances per the recommendation of a Professional Engineer.

(d) Ground Control Management Plan

The Permittee shall implement the Ground Control Management Plan (GCMP). The GCMP shall be reviewed annually by a Professional Engineer and updated as required. The Permittee shall submit the updated GCMP to the Chief Inspector within 60 days of being issued, and it shall include (but is not limited to) the following components:

(i) Ground control program roles, responsibilities, accountabilities, implementation, records and communications,
(ii) Design basis information and assumptions used to develop the mine design and the ground control program,
(iii) Geological model for the mine,
(iv) Hydrogeological model for the mine,
(v) Geotechnical (rock mechanics) model for the mine including stress, structure and rockmass,
(vi) Historical experience,
(vii) Mine design including mining methods, and excavation dimensions, pillar dimensions, stope sequencing, etc.; and criteria used in dimensioning of excavations and pillars,
(viii) Water control measures including specific precautions to be taken where bodies of water, water bearing structures, overburden, tailings etc., may inundate the mine workings,
(ix) Ground support systems and materials to be employed,
(x) Criteria used in selection, dimensioning, spacing and extent of ground support,
(xi) Standards and procedures to ensure worker safety including,
(xii) Minimum ground support standards to be employed at Mine,
(xiii) Blasting methods,
(xiv) Employee procedures and training,
(xv) Monitoring program to verify acceptable performance, detect early signs of instability, and confirm design basis information and assumptions,
(xvi) QA/QC program,
(xvii) Risk management, and
(xviii) Ground Control Management Plan reviews, audits, and scheduled update program.

(e) The Permittee shall install ground support in new and rehabilitated excavations in accordance with the recommendations of a Professional Engineer.

(f) Mining-Backfill Standard Operating Procedure (SOP)

The Permittee shall implement and maintain a Mining-Backfill Standard Operating Procedure (SOP). The Permittee shall ensure the Mining Backfill SOP be reviewed annually by a Professional Engineer and updated as required. The Mining Backfill SOP shall consider (but is not limited to) the following components:

(i) Barricade and berm design for anticipated loading conditions;
(ii) Procedures for determining suitable barricade location;
(iii) QA/QC procedures for constructed barricades;
(iv) Design rationale for minimum strength requirements for operating beside and underneath backfill at the design dimensions;
(v) Prescribed fill rates within stopes;
(vi) Paste line flushing procedures;
(vii) Procedures to ensure tight backfill has occurred,
(viii) Safe filling procedures that include safe worker setback distance from active paste pours, and
(ix) QA/QC backfill testing requirements.

(g) The Permittee shall ensure that no placement of paste backfill into a mined void proceeds unless the fill retention barricades constructed for the placed paste backfill are inspected and approved by a Professional Engineer.

(h) Monitoring

(i) The Permittee shall maintain a geotechnical model of the underground openings that record the stress conditions, structure and rock mass in all headings and stopes.

(ii) The Permittee shall conduct performance testing on installed ground support to ensure performance is in accordance with design values. The Permittee shall ensure quantifiable performance objectives provide triggers for when rehabilitation of ground support is required.

(i) The Permittee shall maintain a Ground Control Log Book that shall be available at any time at the mine site to any Mines Inspector and includes, but is not limited to, the following information:

(i) Records of damaged, loaded, or failed support;
(ii) Areas of ground support non-conformance to design;

(iii) Records of working ground such as cracks, noise, movement, or other signs of instability;
(iv) Records of uncontrolled falls of ground;
(v) Unusual or unexpected geological, hydrogeological and geotechnical conditions;
(vi) Identification of ground control concerns, coupled with a plan for mitigation/remediation and prioritization,
(vii) A record of the implementation of the mitigation/remediation to address the concern in C.2(i)(vi).

(j) The Permittee shall monitor the strength of the paste backfill through laboratory or in-situ testing methods and ensure that no mining occur in areas below or adjacent to where low strength fill is encountered.

(k) The Permittee shall ensure that the Ground Control Log Book is read and signed each day by the shift boss and the Mine Manager, or a mine engineer designated by the Mine Manager.

(l) The Permittee shall ensure that in the event of mining induced seismicity, all mining shall immediately cease until an observation, management and surveillance plan specific to mining in a mining induced seismically active area is submitted to the Chief Inspector and approved. The plan shall provide measures to monitor micro seismicity and mitigate rock burst potential.

(m) Reporting

(i) The Permittee shall ensure an annual review of the underground workings is undertaken by a Professional Engineer, and observations and recommendations made during the review are summarized in a report and submitted to the Chief Inspector by March 31 of the year following the inspection.

(ii) Starting in 2018, and every four years thereafter, or at the discretion of the Chief Inspector, the Permittee shall ensure third party audits of the Ground Control Management Plan be conducted by a Professional Engineer and that they include a review of the instrumentation/monitoring program, QA/QC testing, stress management and pillar performance, and performance of installed ground support.

(iii) Starting in 2021, and every four years thereafter, or at the discretion of the Chief Inspector, the Permittee shall ensure third party audits of the paste backfill operations be conducted by a Professional Engineer and that they include plant operations, paste reticulation system and paste placement procedures.

3. Subaqueous Waste Rock and Tailings Storage Facility (WRTSF)

(a) Operations

(i) The Permittee shall implement the Subaqueous Waste Rock and Tailings Storage Facility Operation, Maintenance, and Surveillance Manual (OMS Manual; Document 6.5). The Permittee shall ensure the OMS manual is reviewed annually and updated, as needed, to reflect changes in status as the facility develops.

(ii) The Permittee shall ensure all employees and contractors involved in the operation of the WRTSF are trained in the implementation of the OMS Manual and that records of the training be maintained on site.

(iii) The Permittee shall ensure that all subaqueous placement of tailings is to be performed under the guidance of a Professional Engineer.

(iv) The Permittee shall assign a qualified person to monitor dumping and to provide a daily work schedule that shows the locations and quantities of waste rock to dump. No dumping of material shall occur unless approved by the qualified person.

(v) The Permittee shall ensure that no weak, cohesive materials or snow be dumped within the ultimate design limits of the subaqueous waste rock dump area, with the exception that high fines (cohesive) materials may be placed under the direction of the qualified person in areas approved by the Engineer of Record. The Permittee shall ensure the locations, total volume and percentage (with respect to total placed) material of the high fines content is documented and included in the semi-annual and annual reports.

(vi) The Permittee shall ensure any weak, cohesive materials or snow that is dumped outside the ultimate design limits of the WRTSF, be documented (locations and quantities) and included in the applicable semi-annual and annual reports.

(vii) The Permittee may, following standard operating procedures set in the OMS manual, and as outlined in Document 7.2, use a conveyor, excavator, or remotely operated vehicle to place waste rock into the ponded portion of the WRTSF.

(viii) The Permittee must develop an operational setback and delineation of high risk zone, including the following:

(a) The operational setback distance at the crest is defined with a Factor of Safety FoS > 1.1 for short term analysis of deep seated failures and areas with less than a FoS of 1.1 are identifiable as a high-risk zone;
(b) The zone shall be clearly marked at all times;
(c) No personnel shall work alone within this zone at any time;
(d) A clear, unobstructed escape route for equipment working within this zone shall be maintained;
(e) Personal protective equipment, rescue equipment, communication equipment shall be present at the location of work for all personnel working within the zone;
(f) At minimum a 10m operational setback distance shall be maintained, and
(g) Prior to work occurring within the high risk zone, the area shall be inspected and deemed safe by a Qualified Professional following all recommendations of the Engineer of Record

(ix) The Permittee shall implement an earthquake monitoring system with an alarm to trigger evacuation of personnel from the dump in the event of an earthquake.

(b) Monitoring and Reporting

(i) The Permittee shall monitor dump crest movement and implement a failure alert procedure on all active waste dumps and closed high consequence dumps.

(ii) The Permittee shall install instrumentation to monitor the rate of settlement of the subaqueous waste rock dump. Reports of the settlement rates are to be made available to the Mine Inspector upon request.

(iii) The Permittee shall install a water level gauge or other suitable pond level monitoring system to monitor Brucejack Lake water level.

(c) Annual Construction Progress Report

The Permittee shall submit an annual construction progress report to the Chief Inspector by March 31 of that year, on the construction and monitoring of the WRTSF. The Permittee shall ensure the report includes:

(i) A review of construction documentation,
(ii) Rock deposition advancement,
(iii) Repealed 2018-12-14.

(iv) A discussion detailing any potential amendments to original design based on field observations,
(v) Recommendations for the placement of material in all weather conditions, and
(vi) Confirmation the report was reviewed by the Engineer of Record.

(d) Annual Review of WRTSF

(i) The Permittee shall ensure that an annual review of the WRTSF is conducted by a Professional Engineer and a report submitted to the Chief Inspector until 2021.

(ii) Starting in 2022, and every five (5) years thereafter, the Permittee shall ensure that a review of the WRTSF is conducted by a Professional Engineer and a report submitted to the Chief Inspector.

4. Surface Water Ponds, Ditches and Diversion

(a) The Permittee shall not commence construction of surface water ponds and ditches that carry mine-influenced water or diversion channels until issued for construction (IFC) drawings, signed by a Professional Engineer, are submitted to the Chief Inspector. This condition does not apply to temporary diversion channels required to facilitate construction.

(b) The Permittee shall ensure that water surface ponds, ditches and diversion channels are designed to convey the design flood without overtopping or side slope failure, and with adequate armour or lining to prevent significant erosion.

(c) Ponds shall be designed with a minimum 0.5 m freeboard under the design flood. The design flood shall be chosen with consideration of the consequence of failure, and duty life of the ponds, but shall be no less than the 1:200 year peak flow event.

(d) The Permittee shall submit an “As-Built” report to the Chief Inspector for all surface water ponds, ditches and diversion channels. The Permittee shall ensure that the report certifies that each facility has been constructed in accordance with the design and the applicable guidelines

(e) The Permittee shall implement the Operations Maintenance and Surveillance Manual for the Contact Water Pond. The Permittee shall ensure the OMS manual is reviewed annually and updated, as needed, to reflect changes in status as the facility develops

(e) The Permittee shall include all surface water ponds, ditches and diversion channels in an annual inspection by a Professional Engineer of water management facilities on the mine site. The annual inspections shall be documented and inspection reports shall be maintained onsite and provided to any inspector upon request.

5. Temporary Soil, Overburden, Rock, and Organic Material Stockpiles

The Permittee shall ensure that the temporary soil, overburden, rock, and organic materials stockpiles are designed by a Professional Engineer and built in accordance with the designs.

6. Borrow and Quarry Excavations

The Permittee shall ensure that borrow and quarry excavations are designed by a Professional Engineer and developed in accordance with the designs.

7. Mine Site Roads

(a) The Permittee shall ensure that all mine roads are designed and constructed in accordance with accepted engineering standards, and the Code.

(b) The Permittee shall ensure cuts and fills in excess of 6 m height (if any) be designed by a Professional Engineer.

(c) Where necessary to ensure geotechnical stability, the footprint of fill slopes shall be stripped of organics and topsoil and/or have the fill toe “keyed-in” to original ground. For slopes exceeding a gradient of 15 degrees, the prepared foundation of fill slopes in excess of 10 m height shall be inspected by a Professional Engineer prior to fill placement.

(d) The Permittee shall ensure that “As-Built” drawings and records of the roads are prepared and maintained on-site.

8. Mine Site, Plant, Shop, and Other Infrastructure Foundations

(a) The Permittee shall ensure that all building foundation designs address bearing capacity, potential settlement, and any necessary foundation preparation or treatment.

(b) The Permittee shall ensure an inspection of the prepared excavation prior to the placement of permanent foundations is completed.

9. Geohazards Assessment

The Permittee shall ensure a Professional Engineer or Geoscientist conducts an annual review of the geo-hazard management practices being implemented by mine personal at the mine site. The results of this inspection shall be provided in an annual report to the Chief Inspector by March 31 of the year following the inspection.

D. Protection of Land and Watercourses

1. Environmental Management System

(a) The Permittee shall maintain and implement an Environmental Management System (EMS) consisting of Environmental Management Plans (EMPs) and Standard Operating Procedures (SOPs). The EMS shall reference relevant policies and establish proactive procedures to provide direction for effective operational management and monitoring on-site.

(b) The Permittee shall audit the EMS annually, revise it as soon and as often as required, and make it available to a Mines Inspector at the mine site at all times. The findings of the annual audit of the EMS shall be reported in the Annual Reclamation Report.

(c) The Permittee shall ensure that mine site employees and contractors are knowledgeable and accountable to act consistently with the requirements of the EMPs and SOPs that form the EMS.

(d) Repealed 2018-12-14.

2. Environmental Manager

(a) The Permittee shall ensure that an Environmental Manager is assigned.

(b) The Environmental Manager shall have the authority to implement remedial actions as may be necessary to ensure maintenance of environmental standards and permit requirements. If suspension of construction or operations occurs due to environmental concerns, the Permittee or Environmental Manager shall immediately notify the Chief Inspector.

3. Metal Leaching (ML) and Acid Rock Drainage (ARD)

(a) General

(i) The Permittee shall ensure all materials with the potential to generate ML/ARD are placed in a manner that minimizes the production and release of metals and contaminants to levels that assure protection of environmental quality.

(ii) Unless otherwise approved, The Permittee shall ensure all plans for the prediction, and if necessary, the prevention, mitigation and management of metal leaching and acid rock drainage are prepared in accordance with the *Guidelines for Metal Leaching and Acid Rock Drainage at Minesites in British Columbia* (1998).

(iii) The Permittee shall ensure no changes are made to the criteria for ML/ARD definition, waste handling procedures, mitigation strategies, or materials monitoring program without the approval of the Chief Inspector.

(b) Definition of Potentially ARD Generating (PAG) and Metal Leaching (ML) Materials

All waste rock, quarry rock, borrow materials and tailings shall be considered PAG if NP/AP is < 2, where AP is calculated from total sulphur and NP is calculated from total carbon.

(c) Mine Materials Handling and ML/ARD Mitigation

(i) The Permittee shall ensure only non-PAG materials are used for construction purposes.

(ii) Prior to their use, the Permittee shall ensure representative samples of quarry and borrow materials used for construction are tested and characterized in accordance with the ML/ARD Management Plan for their potential to generate ML/ARD.

(iii) The Permittee shall ensure all waste rock generated from surface or underground development is backfilled in the underground workings, below the ultimate flood limit of the workings, or deposited in Brucejack Lake.

(iv) The Permittee shall ensure all PAG waste rock deposited in Brucejack Lake is covered with a minimum 1 m water cover.

(v) The Permittee shall ensure waste rock stored temporarily on surface, within the mine contact water collection system, for no longer than 2 years. Permanent disposal of waste rock on surface is not permitted.

(vi) The Permittee shall ensure all tailings are either backfilled underground or deposited in Brucejack Lake.

(vii) Repealed 2018-12-14.

(viii) The Permittee shall ensure sludge generated from the Operations Water Treatment Plant is comingled with tailings and deposited in Brucejack Lake at a mixing ratio not to exceed 2% sludge by dry weight.

(ix) Underground co-disposal of Operations Water Treatment Plant sludge with cemented paste tailings is not permitted until such time as the Permittee can demonstrate the long term stability of these materials and an updated ML/ARD Management Plan and Subaqueous Waste Rock and Tailings Deposition OMS Manual is provided to the Chief Inspector for review and approval.

(x) The placement of sludge from the Operations Water Treatment Plant in the underground workings is prohibited until such time the Permittee can demonstrate the long-term geochemical stability is demonstrated and an updated ML/ARD Management Plan and Subaqueous Waste Rock and Tailings Deposition OMS are provided to the Chief Inspector for review and approval.

(d) ML/ARD Operational Monitoring

(i) The ML/ARD Management Plan is approved and shall be implemented. The Permittee shall ensure no changes are made to the plan without the approval of the Chief Inspector.

(ii) The Permittee shall ensure all personnel involved in waste rock and tailings generation and handling are trained and kept up to date on the content and implementation requirements of the ML/ARD Management Plan and the Subaqueous Waste Rock and Tailings Deposition OMS.

(iii) The Permittee shall maintain an inventory of waste rock, quarry rock, borrow materials, exposed rock units in the underground workings, tailings products and water treatment plant sludge generated, including (as appropriate) information on source, composition, quantity of material, disposal location, elevation (meters), depth of water cover, and date of placement. This inventory shall be kept on site and be made available to any Mines Inspector upon request.

(iv) Concurrent with mine development and operations, the Permittee shall characterize excavated materials produced and mine surfaces exposed, including waste rock, quarry rock, borrow materials, exposed rock units in the

underground, tailings products and generated water treatment plant sludge to determine ML/ARD generating potential, validate pre-mining predictions, guide material management decisions, confirm effectiveness of waste handling procedures, and determine the need for mitigation and contingency measures that ensure environmental protection.

(v) The Permittee shall maintain a record of waste rock placed within the platform and active face areas of the waste rock dump. The record shall include information on the type, amount and exposure time (in months) of waste rock prior to submergence in Brucejack Lake. The record shall be kept on site and be made available to any Mines Inspector upon request. The record shall be reported in the Annual Reclamation Report.

(e) Analytical Requirements

(i) Repealed 2018-12-14.

(ii) Repealed 2018-12-14.

(iii) The Permittee shall present analytical QA/QC results in the Annual Reclamation Report.

(f) ML/ARD Reporting

The Permittee shall report results of the ML/ARD analytical testwork (including raw data, sample descriptions, analytical QA/QC, and materials inventory) and underground geologic mapping in the Annual Reclamation Report. Any significant changes or trends shall be discussed, and implications for materials handling shall be identified.

4. Water Management and Monitoring

(a) Water Management

(i) The Permittee shall obtain any necessary permits and licenses for water diversion and discharge.

(ii) The Permittee shall ensure water from the underground workings is collected and directed to water treatment.

(iii) The Permittee shall ensure that water from the Contact Water Pond is collected and either directed to water treatment or to Brucejack Lake through the direct discharge line, as per the Contact Water Pond OMS manual required as a condition of this permit.

(b) Groundwater

(i) Repealed 2018-12-14.

(ii) The Permittee shall ensure the Operation, Maintenance and Surveillance Manual: Mine Site Surface Water Management Facilities is kept up to date, reviewed annually, revised as soon and as often as required and is made available to an Inspector at the mine site at all times. Updated versions of the manual shall be submitted to the Chief Inspector.

(iii) The Permittee shall ensure updates to the post-closure groundwater elevation predictions be provided with each Five Year Mine Plan Update, commencing July 31, 2020. Any changes to predicted post-closure groundwater levels shall be used to revise the ML/ARD Management Plan and the Water Management Plan, as required.

(c) Chromium Management Plan

(i) The Permittee shall implement the Chromium Management Plan (Document 6.3).

(ii) The Permittee ensure the Chromium Management Plan is kept up to date, reviewed annually, revised as soon and as often as required and made available to an Inspector at the mine site at all times. The findings of any investigations undertaken and any significant changes to the plan shall be reported in the Annual Reclamation Report.

(iii) The Permittee shall ensure that mine site employees and contractors are knowledgeable and accountable to act consistently with the requirements of the Chromium Management Plan.

(d) Monitoring and Reporting

(i) The Permittee shall monitor and track changes to mine site surface water and groundwater quality and quantity from the underground workings (including pumping rate of water into and out of the underground workings), groundwater monitoring wells, Contact Water Pond, and tailings supernatant. The Permittee shall ensure the program is capable of providing early warning about the onset of ARD or an increase in contaminant loading and provide refined predictions regarding the post-closure groundwater elevation.

(ii) The Permittee shall ensure detection limits are sufficient to compare to provincial water quality guidelines and permit requirements established by the British Columbia Ministry of Environment.

(iii) The Permittee shall ensure an effective QA/QC program for mine site contact water is implemented.

(iv) The Permittee shall ensure monitoring results of water quality and water quantity, including interpretation of the results, are kept up to date in a dedicated database available for review by a Mines Inspector and reported in the Annual Reclamation Report.

(v) The Permittee shall ensure that the Annual Reclamation Report includes a table comparing relevant monitoring and testwork data to source term concentrations used in water quality predictions. The Permittee shall ensure implications of the results for source term refinement, water quality mitigation and adaptive management is discussed in the report.

(e) Water Quality Predictions

During operations, the Permittee shall track water quality and flow monitoring data to enable validation and refinement of water quality predictions based on site-specific monitoring information. The Permittee shall ensure water quality model updates is provided in every 5 Year Mine Plan update thereafter, or more frequently as necessary to inform mine planning and mitigation design and engineering.

5. Closure Underground Water Quality Adaptive Management Plan

The Permittee shall implement an appropriate monitoring program with water quality triggers and management actions that will be used to ensure the groundwater discharging from the underground workings during post-closure is protective of receiving environment water quality.

6. Water Treatment

(a) Operations

(i) The Permittee shall ensure the Operations Water Treatment Plant Operations and Maintenance Manual (OWTP OMS) is kept up to date, reviewed annually, revised as soon and as often as required and be made available to an Inspector at the mine site at all times. The Permittee shall submit updated versions of the OWTP OMS to the Chief Inspector.

(ii) Repealed 2018-12-14.

(iii) The Permittee shall ensure no substantive changes are made to the operations phase water treatment processes without the approval of the Chief Inspector.

(b) Monitoring and Reporting

(i) The Permittee shall monitor, track and report in the Annual Reclamation Report on the performance of the Water Treatment Facility. The Permittee shall report information on system performance, volume and quality of contact water influent and effluent of the water treatment system, volumes of reagents used, volumes and characteristics of waste generated, and information on any process changes.

(ii) The Permittee shall ensure the Annual Reclamation Report includes a breakdown of all annual costs associated with operation of the Operations Water Treatment Facility, including labour, electricity, waste handling and storage and all delivered costs for diesel, reagents, etc.

7. Sediment and Erosion Control

(a) The Permittee shall ensure that the Erosion and Sediment Control Management Plan is implemented. This plan shall be reviewed at least annually and updated to reflect results of effectiveness monitoring and potential contingency requirements, changing site conditions, and site-specific freshet-related considerations. The Permittee shall ensure substantive changes are provided to the Chief Inspector prior to implementation, and annual updates are reported in the Annual Reclamation Report.

(b) The Permittee shall ensure that erosion and sediment control prescriptions, and associated effectiveness monitoring programs, are developed based on site-specific assessments of risk and consequence prior to construction of individual mine and water management components.

(c) The Permittee shall ensure that unauthorized release of sediment-laden water released from the authorized water management system shall be characterized and reported to the Chief Inspector, with recommendations for improvement to the water management system if required.

(d) The Permittee shall initiate progressive reclamation where practicable to control erosion around the mine area.

8. Soil Salvage and Storage

(a) The Permittee shall salvage and stockpile topsoil, overburden, and organic material to the greatest extent possible for use in reclamation.

(b) The Permittee shall ensure a Qualified Professional monitor and direct sampling, soil salvage, stockpiling activities on-site.

(c) The Permittee shall ensure an inventory of salvaged and stockpiled soil, including the locations, origins, and quantities of material, is documented and reported in the Annual Reclamation Report.

(d) The Permittee shall protect stockpiles from erosion, degradation, and contamination using appropriate best management practices, and monitor them as appropriate to ensure effective controls are maintained. The Permittee shall ensure stockpile protection activities and monitoring results are documented and reported in the Annual Reclamation Report.

(e) The Permittee shall ensure soil stockpiles are located in areas that minimize handling requirements during site preparation and mine operations, provide adequate accessibility for reclamation activities, and optimize sediment control options.

(f) The Permittee shall ensure soil stockpiles are clearly marked to ensure that they are protected during construction and mine operations.

(g) The Permittee shall ensure stockpiled soil suitable for use in reclamation is not used as fill.

9. Vegetation Management

(a) The Permittee shall ensure that the Vegetation Management Plan is implemented.

(b) The Permittee shall limit disturbance to vegetation to those areas approved by this permit (Figure 1a and Figure 1b) and ensure that disturbance limits are clearly communicated and adhered to on-site. Where only minimal vegetation removal is proposed, the Permittee shall ensure efforts are made to limit ground disturbance to minimize soil erosion and maximize the regeneration potential of the site.

(c) Repealed 2018-12-14.

(d) The Permittee shall ensure that the Invasive Plants Management Plan, dated July 2015 is implemented.

(e) The Permittee shall prevent the establishment of invasive plants on-site, manage and control weeds that do establish on the site, and take reasonable efforts to ensure that weeds do not move from the site to adjacent areas. The Permittee shall ensure that seed used on-site is certified weed free and consider using non-toxic means for weed control.

(f) The Permittee shall salvage and stockpile woody debris, including stumps, roots, limbs and rotting logs, that is generated during clearing and grubbing operations. The Permittee shall keep an inventory of salvaged and stockpiled woody debris, including the locations, origins, and quantities of material, and report in the Annual Reclamation Report.

(g) The Permittee shall avoid chipping or burning of woody debris suitable for use in reclamation.

10. Wildlife Protection

(a) The Permittee will implement the Wildlife Management Plan (REF 1.10), to prevent and mitigate impacts to wildlife, with the monitoring results provided in the Annual Reclamation Report.

(b) The Permittee shall ensure that strategies, designed by a Qualified Professional with suitable experience, to prevent human-wildlife interactions are included in the Waste Management Plan and implemented.

(c) The Permittee shall ensure that where exclusion fencing is installed that it is maintained in effective working order at all times that people are present on site.

(d) The Permittee shall conduct monitoring and/or track incidental observations of bats in the underground throughout mine life. If bats are observed to be present the Permittee shall:

(i) Develop, and submit to the Chief Inspector within 3 months of bat observations, an operational management plan to minimize risk to bats, particularly with respect to direct mortality and spread of white nose syndrome and

(ii) Conduct a bat survey and take all reasonable efforts to move bats out of the underground, prior to securing the underground openings.

(e) The Permittee shall avoid wildlife sensitive periods and/or adhere to timing windows for construction activities. Where this is not practicable, the Permittee shall adhere to mitigation measures outlined in the Wildlife Management Plan.

(f) Pursuant to Part 1.6.9 of the Code, the Mine Manager shall incorporate in the mine safety program a no hunting and shooting policy, for the mine permit area (Figure 1a and Figure 1b).

(g) The Permittee shall implement a policy of no fishing and hunting for all employees and contractors while on company business or while commuting to and from the mine on the Brucejack Access Road west of Highway 37.

11. Archaeological Resources

If archaeological materials or cultural features are encountered during construction or related activities, the Permittee shall implement procedures as set out in the Heritage Management Plan.

12. Ongoing Reclamation Research

(a) The Permittee shall by July 31, 2020, submit to the Chief Inspector a Reclamation Research Program that includes details for achieving the research requirements outlined in this permit with a schedule for implementation and description for how results will be utilized and reported.

(b) The Permittee shall ensure a summary of all research being conducted under this section is provided in the Annual Reclamation Report and a detailed summary of results is provided in the Five Year Mine Plan and Reclamation Program updates.

(c) The Permittee shall ensure research is conducted to explore opportunities for enhancement of both habitat and surface drainage control on the Mine Site, particularly with respect to design of the surface topography predicted to remain once infrastructure is decommissioned at closure. The scope of this research shall include evaluation of options to optimize remaining concrete foundations.

(d) The Permittee shall ensure research is conducted to evaluate opportunities for amending soil that is to be used for reclamation purposes to enhance the soil suitability, if necessary, based on soil analyses.

(e) The Permittee shall ensure testwork is conducted to determine soil replacement depths and locations required to achieve the designed surface topography and end land use objectives.

(f) The Permittee shall ensure research is conducted to determine the viability of revegetation with native plant species, including culturally important species.

(g) The Permittee shall ensure research is conducted to assess decompaction methodologies to ensure that the severity of compaction that exists prior to commencing reclamation activities is effectively addressed in a manner intended to achieve end land use objectives and erosion control. The scope of this research shall include mine access roads and mine site pads.

(h) The Permittee shall develop a reclamation success monitoring program designed to evaluate the success of revegetation, landscape design, and erosion control that specifies sampling parameters and performance criteria.

(i) The Permittee shall develop a monitoring program for evaluating metal uptake in exposed terrestrial and aquatic ecosystems, which specifies sampling requirements and performance criteria and targets areas where potential pathways for metal uptake via (e.g., dust, growth medium, or contact water). Where harmful levels are found, the Permittee shall take any corrective action necessary to mitigate to ensure levels are safe for plant and animal life.

13. Subsidence Monitoring

The Permittee shall develop a Subsidence Monitoring and Management Plan and submit it to the Chief Inspector as part of the 5 Year Mine Plan and Reclamation Program update. The plan shall be designed to evaluate the effectiveness of subsidence controls, provide early warning of surface expression that may result in changes to terrestrial or aquatic values and include an adaptive management approach to ensure that appropriate mitigation and/or closure plans are developed as needed.

E. Reclamation and Closure Program

1. Reclamation Security

(a) The Permittee shall maintain a total security for this permit of Thirty One Million Seven Hundred Thousand dollars ($31,700,000.00). The security will be held by the Minister of Finance for the proper performance of the approved program and all the conditions of this permit in a manner satisfactory to the Chief Inspector.

(b) Repealed 2018-12-14.

(c) Repealed 2018-12-14.

(d) Notwithstanding the security posted as a condition of this Permit, the Permittee remains responsible for covering all closure and reclamation costs associated with reclamation and environmental protection.

2. Annual Reclamation Report

By March 31 of each year, starting in 2016, the Permittee shall submit an Annual Reclamation Report in a form containing the information required by the Chief Inspector.

3. Land Use

The Permittee shall reclaim the land with the intent of re-establishing average pre-mining capability to the following end land use objective: wildlife habitat, particularly matrix habitat for mountain goat, grizzly bear and hoary marmot on the mine site and high elevation sections of the Transmission Line, and moose and grizzly bear habitat at lower elevations of the Transmission Line. Achieving land capability objectives and habitat enhancement shall guide the reclamation program.

4. Revegetation

(a) The Permittee shall, where vegetation is a necessary component of fulfilling the approved end land use objective, ensure the land is revegetated to a self-sustaining state using appropriate and or native plant species including culturally important native species.

(b) The Permittee shall ensure revegetation programs are designed to restore wildlife habitat where practicable.

(c) The Permittee shall ensure revegetation practices are conducted to provide appropriate species and densities that are similar to naturally occurring ecosites at similar elevations, aspects, and climatic conditions.

(d) The Permittee shall develop details of the proposed revegetation programs, including species and densities prescribed for specific areas, based on input from the reclamation research program required as a condition of this permit.

5. Growth Medium

(a) Where replacement of salvaged soil will occur, the Permittee shall ensure surface preparation is done in a manner that controls erosion and achieves end land use objectives.

(b) The Permittee shall monitor soil replacement to ensure the minimum depths are achieved and a confirmation sampling plan shall be implemented to ensure quality of soil used for reclamation purposes will achieve end land use objectives. The Permittee shall present the results in the Annual Reclamation Report.

(c) With the exception of areas where closure plans require compaction prior to placement of growth medium in order to reduce infiltration and contact water, the Permittee shall ensure all areas are reclaimed and decompacted to the minimum depth required to adequately address the severity of compaction prior to placement of soil and or vegetation, in a manner intended to achieve end land use objectives and erosion control.

6. Contaminated Sites Assessment

The Permittee shall develop and implement risk-based monitoring programs designed to ensure all potential sources of contamination have been addressed in order to satisfy reclamation success objectives and water quality requirements.

7. Erosion Control

The Permittee shall ensure that long term erosion potential is minimized through landform configuration, appropriate surface preparation, development of maintenance-free vegetation covers, where applicable, and self-sustaining drainage control features and watercourses.

8. Surface Water Management Ponds and Channels

(a) The Permittee shall ensure all surface water management ponds and water diversions are reclaimed to satisfy stability and erosion control requirements and the approved end land use once no longer required.

(b) At least 3 months prior to decommissioning water treatment facilities, the Permittee shall develop and submit to the Chief Inspector for approval, a Closure Plan that addresses all non-contact and contact water management features that will no longer be required.

9. Transmission Line

At least 3 months prior to decommissioning the Transmission Line, the Permittee shall develop and submit to the Chief Inspector for approval, a Reclamation and Closure Plan to satisfy the approved end land use objectives.

10. Borrows and Quarries

The Permittee shall ensure borrow pits and quarries are reclaimed to satisfy stability and erosion control requirements and the approved end land use, once no longer required.

11. Mine Roads

(a) The Permittee shall ensure all mine roads are reclaimed, in accordance with recommendations of a Qualified Professional, to satisfy the approved end land use objectives, including all reasonable effort to fully re-configure to conform to adjacent landscape where long-term stability is not compromised, unless permanent access is required.

(b) Individual mine roads may be exempted from the requirement for total reclamation pursuant to this permit if either:

(i) the Permittee can demonstrate that an agency of the Crown has explicitly accepted responsibility for the operation, maintenance and ultimate deactivation and abandonment of the road or

(ii) the Permittee can demonstrate that another private party has explicitly agreed to accept responsibility for the operation, maintenance and ultimate deactivation and abandonment of the road and has, in this regard, agreed to comply with all the terms and conditions, including bonding provisions, of this reclamation permit, and to comply with all other relevant provincial government (and federal government) regulatory requirements.

(c) The Permittee shall ensure all access roads are effectively blocked to prevent inadvertent vehicular access to surface areas of the mine that may be dangerous.

12. Structures and Equipment

Prior to abandonment, the Permittee shall, unless the Chief Inspector has made a ruling with respect to heritage project status or industrial use:

(a) Remove all machinery, equipment and building superstructures, unless the Permittee can demonstrate that another private party has explicitly agreed to accept responsibility for its operation and maintenance;

(b) Remove all synthetic sediment control structures, such as turbidity curtains, ditch liners, and soil covers not required after closure and where practical ,disposed of in the underground prior to flooding or buried in place where sufficient cover materials exist;

(c) Remove all concrete foundations, or covered with sufficient growth medium and re-vegetated, or otherwise reclaimed to fulfill approved end land use objectives based on input from the reclamation research program required as a condition of this permit; and

(d) Remove all scrap material and dispose of in an approved facility.

13. Temporary Shutdown

(a) If the mine ceases operation, including for seasonal closure, within one month the Permittee shall submit a Care and Maintenance Plan which describes, documents, and tracks key aspects of the ongoing mitigation, monitoring, and maintenance requirements for the care and maintenance of the site. The Permittee shall ensure the manual documents the outstanding reclamation activities and closure requirements for the site, and develop a trigger action response plan that will be implemented to activate closure activities based on monitoring results and site conditions. This document shall be a living document with updates submitted to the Chief Inspector whenever material changes occur.

(b) Repealed 2018-12-14.

(c) Repealed 2018-12-14.

14. Mine Plan and Reclamation Program Update

On or before July 31, 2025, and every 5 years thereafter, the Permittee shall submit an updated Mine Plan and Reclamation Program, providing, but not limited to, the following:

(a) The current status of the mine plan and reclamation obligations;
(b) A compilation and interpretation of all monitoring including ML/ARD prediction, water quality and quantity, and post-closure groundwater elevation prediction updates;
(c) Closure and maintenance activities;
(d) Any changes to the reclamation program that affect long-term mitigation;
(e) Reclamation research program;
(f) Contingency plans;
(g) Schedule for completion of reclamation works and
(h) A breakdown of outstanding liabilities and associated costs.

15. Closure Plan

(a) Twelve months prior to final closure, the Permittee shall submit a Closure Plan providing, but not limited to, the following:

(i) Closure objectives and criteria for each mine component;
(ii) Provide the current status of the mine plan and reclamation obligations;
(iii) A compilation and interpretation of all monitoring including ML/ARD prediction, water quality and quantity;
(iv) Closure and maintenance activities;
(v) Any changes to the reclamation program that affect long-term mitigation;
(vi) Reclamation research program;
(vii) Contingency plans;
(viii) Schedule for completion of reclamation works and
(ix) A breakdown of outstanding liabilities and associated costs.

(b) Concurrent with the final Closure Plan, the Permittee shall submit a Closure Management Manual which describes and documents key aspects of the operational surveillance and monitoring requirements used to track important changes that could affect long-term mitigation performance, monitoring and maintenance requirements. This document shall be a living document with updates submitted to the Chief Inspector, at least every five years while the permit remains active, and when material changes occur.

Figure 1a – Permitted Mine Area

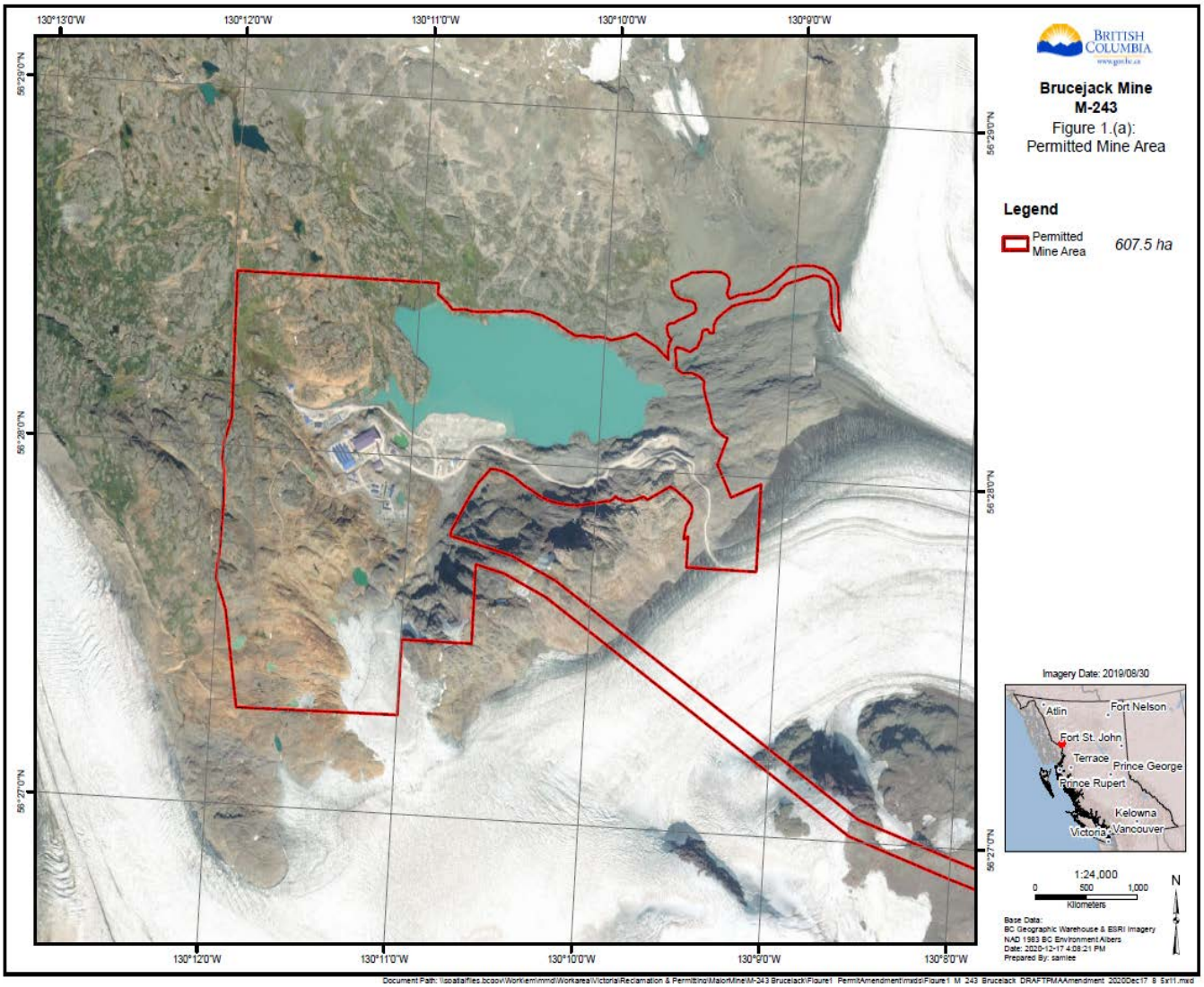

Figure 1b - Permitted Mine Area