PROVINCE OF BRITISH COLUMBIA
MINISTRY OF ENERGY AND MINES

PERMIT

APPROVING WORK SYSTEM AND RECLAMATION PROGRAM
(Issued pursuant to Section 10 of the Mines Act R.S.B.C. 1996, c. 293)

Permit: M-200
Mine No. 1101163

Issued to: Mount Polley Mining Corporation
P.O. Box 12
 Likely, British Columbia
V0L 1N0

for work located at the:

Mount Polley Mine

This permit contains the following sub-sections:

<table>
<thead>
<tr>
<th>Issue Date</th>
<th>Permit</th>
</tr>
</thead>
<tbody>
<tr>
<td>August 3, 1995</td>
<td>Approving Work System</td>
</tr>
<tr>
<td>July 11, 1997</td>
<td>Amended Reclamation Permit, Approval to Construct Open Pits and Waste Dumps and Traffic Control Plan</td>
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</tbody>
</table>

Amendments

As listed on pages 2 and 3.

Amended at Victoria, British Columbia this 23rd day of June in the year 2016.

[Signature]
Al Hoffman, P.Eng.
Chief Inspector of Mines
Amendments

June 13, 1996    Name Change
September 23, 1996 Approval to Construct Tailings Storage Facility to Elevation 934m
July 11, 1997    Amended Reclamation Permit, Approval to Construct Open Pits and Waste Dumps, and Traffic Control Plan
April 7, 1998    Approval to Construct Tailings Storage Facility to Elevation 940 metres
June 13, 2000    Approval to Construct Tailings Storage Facility to Elevation 944 metres
August 2, 2000   Approving Tailings Storage Facility and Amended Metal Leaching and Acid Rock Drainage Conditions
May 30, 2001    Approval to Construct Tailings Storage Facility to Elevation 945 metres
February 16, 2004 Approving Milling of Ore and Tailings Deposition from the International Wayside Bulk Sample
November 1, 2004 Approving Mining and Reclamation Program for the Northeast Zone and Approving Mine Restart
May 25, 2005    Approving Tailings Storage Facility Stage 4 Construction
August 2, 2005   Approving Haulage Road Construction from Northeast Zone to TSF
November 24, 2005 Approving Mining of Southeast Zone
August 2, 2006   Approving Change of Name and Deletion of Requirement to Monitor Blasting
August 2, 2006   Approving Tailings Storage Facility Stage 5 Construction
March 29, 2007   Approving Northeast Zone Dump Extension
March 29, 2007   Approving Copper Oxide Test Heap Leach Facility
August 31, 2007  Approving Boundary Road
December 5, 2007 Approving Wight Pit High Wall Rehabilitation
February 19, 2008 Permit Approving Tailings Storage Facility Stage 6 Construction
March 6, 2008    Approving Transfer of Road Use, Maintenance and Reclamation Obligations
July 8, 2009     Permit Approving the Pond Zone
August 15, 2011  Approving Mining of the C2 and Boundary zone pits
June 29, 2012    Approving Tailings Storage Facility Stage 8 Construction
October 15, 2012 Approving Tailings Storage Facility Stage 8A Construction
March 25, 2013   Approving Boundary Zone Underground
April 22, 2013   Approving Processing of 15000 Tonnes of Ore from Dome Mountain
July 25, 2013    Approving Northwest PAG Dump Expansion and South Haul Road
August 9, 2013  Approving Tailings Storage Facility Stage 9 Construction
March 17, 2014  Approving Cariboo Phase 4 Expansion
March 27, 2014  Approving Change to Reclamation Security Schedule
June 24, 2014  Approving Waste Rock and Tailings Com mingling Research Project
December 17, 2014  Approving TSF Breach Repair and Perimeter Embankment Buttress Design for 2015 F reshet
July 9, 2015  Approving Return to Restricted Restart of Operations
October 22, 2015  Approving Main Embankment Buttress
February 25, 2016  Approving Upstream TSF Construction and 2016 F reshet Water Management
March 17, 2016  Approving Springer Pit Lake Elevation Increase
April 29, 2016  Approving Extension to Restricted Operations and Corner 1 Buttressing
June 23, 2016  Approving Return to Full Operations and Use of Tailings Storage Facility
PERMIT AMENDMENT

APPROVING RETURN TO FULL OPERATIONS AND
USE OF TAILINGS STORAGE FACILITY

 Permit: M-200                        Mine No. 1101163

Issued to: Mount Polley Mining Corporation
           P.O. Box 12
           Likely, British Columbia
           V0L 1N0

for work located at the:

Mount Polley Mine

Amended at Victoria, British Columbia this 23rd day of June in the year 2016.

[Signature]

Al Hoffman, P.Eng.
Chief Inspector of Mines
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PREAMBLE

An application entitled “Mount Polley Mine Return to Full Operations” (document 1), prepared by Mount Polley Mining Corporation, dated November 6, 2015 was submitted to the Chief Inspector of Mines (Chief Inspector) on November 6, 2015, in accordance with Section 10.1.2 of the Health Safety and Reclamation Code (Code).

The following supporting information also forms part of the application:

- “Mine Reclamation and Closure Plan Update November 2015” dated November 6, 2015 by Mount Polley Mining Corporation (document 2);
- “Mount Polley Mine Return to Restricted Operations: Mine Plan Synopsis” dated May 21, 2015 by Mount Polley Mining Corporation (document 3);
- “Tailings Storage Facility Detailed Design to Elevation 970m” dated November 3, 2015 by Golder Associates (document 4);
- “Tailings Storage Facility Life of Mine Feasibility Design” dated November 3, 2015 by Golder Associates (document 5);
- “Cariboo-Springer Pit Phase 4 Water Management Plan (TSF 970m Design)” dated November 2, 2015 by Golder Associates (document 6);
- “Response to BCMEM Screening Comments – Quantitative Performance Objectives”, dated January 27, 2016 by Golder Associates (document 7);
- “Review of Cariboo Pit Slope Design” dated January 31, 2014 by Golder Associates (document 8);
- “MPMC-SOP-016: ABA and Soil Sampling” dated March 23, 2016 by Mount Polley Mining Corporation (document 9);
- “MPMC-WORK-016: ABA and Soil Sampling” dated March 23, 2016 by Mount Polley Mining Corporation (document 10);
- “Water Management Plan and System Review” dated March 31, 2016 by Mount Polley Mining Corporation (document 11); and,
- “Permit amendment application to discharge treated water to Quesnel Lake via Hazeltine Creek” dated September 25, 2015 by Mount Polley Mining Corporation (document 12).

The above information was submitted to the Chief Inspector to support the request for approval to return to full mining operations and use the repaired tailings storage facility, following the breach that occurred on August 4, 2014. A long-term water management and discharge plan is currently under development as a requirement of the Environmental Management Act Permit (PE11678) held by Mount Polley Mining Corporation. Remediation works related to the area impacted by the tailings dam breach are being carried out under the regulatory authority of the Ministry of Environment.
The Application was referred to the Cariboo Mine Development Review Committee (CMDRC) on February 2, 2016 in accordance with Part 10.3.1 of the Health, Safety and Reclamation Code for Mines in British Columbia (Code). The application was discussed during meetings of the CMDRC on February 4, 2016, March 17, 2016, April 15, 2016 and May 16, 2016. The Application was subject to a 30 day public consultation period and was discussed at community meetings in Likely (January 19, 2016); Williams Lake (January 20, 2016); Quesnel (January 21, 2016); and, with the Williams Lake Indian Band and Xat'sull First Nation (Soda Creek Indian Band) during community meetings on January 28, 2016; March 16, 2016; and, May 18, 2016.

This permit contains the requirements of the Ministry of Energy and Mines. It is also 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.

Decisions made pursuant to this permit by staff of the Ministry of Energy and Mines will be made following consultation with the Williams Lake Indian Band, Xat’sull First Nation (Soda Creek Indian Band), other provincial ministries and federal departments and agencies, as appropriate, within reasonable timeframes.

Pursuant to Section 9 of the Mines Act, the CMDRC will serve as the ongoing advisory committee to the Chief Inspector. The Committee Chair is appointed by the Chief Inspector pursuant to Section 9 of the Mines Act. Terms of Reference and Operating Procedures for the CMDRC are established by the Committee Chair in consultation with the Committee members. The Committee will include representatives from the Ministry of Energy and Mines, Ministry of Environment, Ministry of Forests, Lands, and Natural Resources Operations, Williams Lake Indian Band, Xat’sull First Nation, local government (Cariboo Regional District and City of Williams Lake), the Community of Likely, and other government agencies such as the Environmental Assessment Office. The owner, agent or manager (Permittee) and other agencies will be invited to participate as appropriate. The Committee Chair will be responsible for maintaining an up-to-date contact list for Committee members and providing this to the Permittee as required.

The mine is located in the asserted traditional territory of the Williams Lake Indian Band and Xat’sull First Nation. Representatives of the Williams Lake Indian Band and Xat’sull First Nation participated in the CMDRC meetings and extensive discussions of the application.
CONDITIONS

The Chief Inspector hereby approves the application subject to compliance with the following conditions:

A. General

1. Compliance with Mines Act and Code

All work shall be in compliance with all sections and parts of the Mines Act and the Code and the Permittee shall obey all orders issued by the Chief Inspector or his delegate.

2. Departure from Approval

The Permittee shall notify the Chief Inspector in writing of any intention to depart from either the plan of the work system or the program for the protection and reclamation of the surface of the land and watercourses to any substantial degree, and shall not proceed to implement the proposed changes without the written authorization of the Chief Inspector.

3. Requirements of Approval

(a) All construction shall be completed by or under the supervision of a qualified professional and shall include sufficient field reviews to ensure that all subgrade, excavations, structures, slopes, and facilities are built in conformance with the designs, accepted engineering practices, and the Code.

(b) Any written recommendations made by a qualified professional relating to stability, health and safety, or environment, shall be followed unless a suitable alternative written recommendation is provided by a qualified professional.

(c) All designs, work plans, and reports required under this permit shall be made available to any Mine Inspector upon request.

4. Permit Amendment Approval

(a) The proposed use of the tailings storage facility is authorized.

(b) The approved milling rate is a maximum of 8.2 million tonnes per year (an average of 22,450 tonnes per day).
5. Permit

This permit is not transferrable or assignable.

6. Sharing of Mines Act Permit Condition Deliverables

Unless otherwise requested, the Permittee shall provide the Williams Lake Indian Band, Xat’sull First Nation, Cariboo Regional District, and the community of Likely through the Likely and District Chamber of Commerce, with all deliverables that are required to be submitted to the Chief Inspector under conditions of this permit.

B. Health and Safety

1. Mine Emergency Response Plan

An updated Mine Emergency Response Plan (ERP) shall be provided to the Chief Inspector by July 31, 2016. This plan shall follow the Canadian Dam Association Dam Safety Guidelines and Ministry of Energy and Mines guidance available at: http://www.empr.gov.bc.ca/Mining/HealthandSafety/EmergencyPreparedness/Documents/MERPGuidelines(V1.2).pdf and shall be developed with input from the First Nations the Cariboo Regional District, and the community of Likely through the Likely and District Chamber of Commerce.

C. Geotechnical

1. General

(a) All designs, work plans, and reports required to be prepared under this permit shall be prepared by, and sealed by a qualified professional. The Chief Inspector requires that pursuant to Section 6.1.1(3) of the Code the qualified person under 6.1.1 of the Code be a Professional Engineer.

(b) A geotechnical incident report shall be submitted to the Chief Inspector for any dangerous occurrence (as defined by the section 1.7.3 of Code) or any other incident as described in the current “Ministry of Energy and Mines Advice of a Geotechnical Incident”.
2. **Tailings Storage Facility (TSF)**

   (a) **Engineer of Record**

   (i) The manager shall ensure that a Professional Engineer is retained as the Engineer of Record for each tailings storage facility and dam under their management.

   (ii) The Engineer of Record, as a Professional Engineer, has professional responsibility for assuring that a tailings storage facility or dam has been designed and constructed in accordance with the applicable guidelines, standards and regulations.

   (iii) The manager shall notify the Chief Inspector of the retained Engineer of Record, or of any changes to the Engineer of Record, and the notification shall include an acknowledgement by the Engineer of Record.

   (b) **Design**

   (i) The TSF design presented in the report "Tailings Storage Facility Detailed Design to Elevation 970m", dated November 3, 2015 (document 4) is authorized.

   (ii) The Permittee shall appoint a TSF qualified person to be responsible for the coordination of activities related to planning, design, operation, construction, maintenance and surveillance of the TSF and associated site-wide water management. This person shall be identified in writing to the Chief Inspector on receipt of this permit.

   (iii) A design for an emergency spillway, acceptable to the Chief Inspector, shall be prepared by a qualified professional prior to commencement of any construction work that raises the freshet embankment height. Material required for construction of an emergency spillway shall be available at site prior to commencement of any construction work that raises the freshet embankment height.

   (iv) The Mine shall complete the additional investigations of sub-surface along the South Embankment and Perimeter Embankment as recommended by the Engineer of Record. The results of the investigation shall be provided to the Chief Inspector by March 31, 2017.
(v) The Mine shall complete a stress deformation analysis of the TSF that utilizes the 1:2475 seismic event. The results of the analysis shall be provided the Chief Inspector by March 31, 2017.

(c) Construction

The tailings storage facility shall be constructed in accordance with the authorized design and under the supervision of the Engineer of Record.

(d) Operation

The tailings storage facility shall be operated in accordance with the authorized design and the Operation, Maintenance, and Surveillance (OMS) Manual.

(e) Monitoring

The tailings storage facility shall be monitored in accordance with the OMS Manual and the Quantitative Performance Objectives set forth in the report “Response to BCMEM Screen Comments – Quantitative Performance Objectives” (document 7 and Appendix 1 of this permit).

(f) Reporting

(i) An annual dam safety inspection (DSI) for all dams and water management facilities on the mine site shall be completed by a Professional Engineer and submitted to the Chief Inspector by March 31 of the year following the inspection. The report shall follow the current Ministry of Energy and Mines guidelines for DSI reports.

(ii) The Permittee shall submit an as-built report and as-built construction drawings to the Chief Inspector prior to March 31, following the year of construction.

(iii) An updated OMS Manual and Emergency Preparedness Plan (EPP) shall be prepared in accordance with accepted industry practice (e.g. current Canadian Dam Association and Mining Association of Canada Guidelines). The updated reports shall consider the comments and recommendations in the report “Mount Polley Mine Tailings Storage Breach Investigation Report of the Chief Inspector of Mines”. The reports shall be submitted to the Chief Inspector by December 31, 2016. The OMS, EPP and ERP shall be reviewed annually and updated to reflect changes in status as the facility develops.
3. Open Pit

(a) Design

The Permittee shall submit to the Chief Inspector the pit slope design report for the C2 Pit and Boundary Zone Pit for review prior to pit development.

(b) Monitoring

(i) Geological, geotechnical, and hydrological conditions encountered during pit development shall be assessed to detect early signs of instability and to confirm design basis assumptions. The frequency of assessment shall be determined by a Professional Engineer.

(ii) A pit wall monitoring program shall be implemented to verify acceptable performance, detect early signs of instability, and confirm design basis assumptions. The program should be based on the recommendations of the pit design engineer. The monitoring program shall include details of instrumentation, monitoring frequency, trigger thresholds, and trigger response criteria.

(iii) A Ground Control Log Book, or equivalent, shall be maintained at the mine. At a minimum, the Ground Control Log Book shall include the following information:

- dangerous conditions such as working ground or unstable ground;
- unusual or unexpected geological, hydrogeological, geotechnical conditions;
- records of uncontrolled falls of ground; and,
- rehabilitation requirements.

The Ground Control Log Book shall be read and signed each shift by the shift boss and the Mine Manager or other designated person.

(c) Reporting

Annual inspections of pit slopes shall be undertaken by a Professional Engineer, and an annual report submitted to the Chief Inspector by March 31 of the year following the inspection. At a minimum the report shall include the following information:
- all pits other than those fully reclaimed;
- observations made during the inspections;
- summary of monitoring and instrumentation data;
- assessment of design versus actual bench and pit performance;
- updated pit plans; and,
- conclusions and recommendations.

4. **Underground**

(a) **Monitoring**

A Ground Control Log Book or equivalent shall be maintained at the mine. At a minimum, the Ground Control Log Book shall include the following information:

- dangerous conditions such as working ground or unstable ground;
- unusual or unexpected geological, hydrogeological, geotechnical conditions;
- records of uncontrolled falls of ground;
- areas left unsupported at the end of a shift;
- areas of damaged, loaded, or failed support;
- areas with support not meeting design standards; and,
- rehabilitation requirements.

The Ground Control Log Book shall be read and signed each shift by the shift boss and the Mine Manager or other designated person.

(b) **Reporting**

Annual inspections of underground workings shall be undertaken by a Professional Engineer and an annual report submitted to the Chief Inspector by March 31 of the year following the inspection. At a minimum the report shall include the following information:

- observations made during the inspections;
- summary of monitoring and instrumentation data;
- assessment of excavation stability and effectiveness of the ground control management plan;
- updated mine plans; and,
- conclusions and recommendations.
D. Protection of Land and Watercourses

1. Mined Materials Stockpiles

   (a) This permit approves the northwest potentially acid generating (PAG) waste rock stockpile to a maximum mass of 24,250,000 tonnes.

   (b) The Permittee shall assess and define contingency reclamation plans for the ore stockpiles in the event they remain in place at closure. These plans shall be presented in detail in the updated Reclamation and Closure Plan in accordance with permit condition E.9.

2. Metal Leaching (ML) and Acid Rock Drainage (ARD) Monitoring

   The Permittee shall maintain an inventory of all mined materials and tailings products stored on site, including information on source, composition, quantity of material, elevation (metres), disposal location, and date of placement. This inventory shall be kept on site and available to any Mine Inspector upon request.

3. Mine Site Water Management and Monitoring

   (a) The Mine Site Water Management Plan shall be updated to reflect changing site conditions and management requirements. Any changes to the Mine Site Water Management Plan shall be provided to the Chief Inspector.

   (b) An updated mine water quality and quantity monitoring program, shall be provided to the Chief Inspector by June 30, 2016. The program shall include water quality, water quantity, and seepage monitoring locations, sampling frequency and parameters, and reporting frequency for all mine areas.

4. Water Quality Predictions

   (a) Updated water quality predictions shall be submitted with the “Draft Technical Assessment Report for the Long-Term Water Management Plan (LTWMP)” due to be submitted to the Ministry of Environment by June 30, 2016.

   (b) The water quality predictions shall be updated as necessary to reflect changes to the mine plan, and to support Reclamation and Closure Plans for the mine, including mitigation design and engineering.
5. Reporting

(a) The Permittee shall provide a weekly report of Springer Pit Lake water level elevation to the Chief Inspector of Mines until such time that written consent to cease reporting is received.

(b) The Permittee shall ensure that the Annual Reclamation Report includes analytical data collected in accordance with ML/ARD Material Monitoring, Characterization and Management Program, along with a table that compares relevant monitoring and testwork data to source term concentrations used in water quality predictions.

(c) Monitoring results and interpretation of surface water quality and quantity monitoring, groundwater monitoring, and seepage monitoring shall be kept up to date in a dedicated database and available to any Mine Inspector on request. The information shall also be reported in the Annual Reclamation Report. Any significant changes or trends in monitored parameters shall be discussed, and those that require additional evaluation and management shall be identified in the report. This work shall be prepared by a qualified professional with experience in assessment of water quality and quantity monitoring data.

(d) The implications of ML/ARD materials monitoring, surface water, and groundwater quality monitoring results for source term refinement, water quality mitigation and adaptive management shall be discussed in the Annual Reclamation Report.

(e) The Permittee shall review the Mine Site Water Management Plan at least annually. All review, inspection, monitoring and maintenance activities associated with the Mine Site Water Management Plan shall be reported in the Annual Reclamation Report.

6. Ecological Risk Assessment

The Permittee shall develop and implement a plan to conduct an ecological risk assessment to evaluate the pathways for uptake of metals for receptors relevant to the end land use objectives for the site, and identify any closure remediation activities and long-term monitoring requirements needed to address potential risks identified. This plan shall be developed in consultation with MOE, Williams Lake Indian Band and Xat’sull First Nation. The ecological risk assessment results and interpretations shall be used to inform closure requirements and shall be included in the Reclamation and Closure Plan required under permit condition E.9.
7. **Ongoing Reclamation Research**

(a) The Permittee shall develop and implement a reclamation research program that utilizes an adaptive management approach, with results summarized in the Annual Reclamation Report. The scope of the program shall include, but not be limited to, the following considerations:

(i) geometric landform and run-off modeling assessments in order to identify opportunities to shape landforms in a manner that optimizes surface water pathways and soil moisture regimes, reduces infiltration where appropriate, and enhances erosion protection and habitat function and connectivity;

(ii) evaluation of the viability of using culturally important species in revegetation prescriptions, where possible, based on land capability modeling;

(iii) evaluation of opportunities for amending growth medium to enhance the suitability for reclamation, if necessary, based on land capability modeling;

(iv) testwork to determine soil replacement depths and locations required to achieve the end land use and land capability objectives;

(v) testwork to develop effective methods for achieving land use and land capability targets for the tailings impoundment, in particular for successful revegetation of tailings sand/beach areas; and,

(vi) assessment of de-compaction and surface preparation technologies to ensure that the relative compaction is effectively addressed and soil covered surfaces are prepared in a manner intended to achieve end land use, land capability, and erosion control objectives.

(b) The Permittee shall update the reclamation success monitoring program for the mine to ensure that it is tailored to the Reclamation and Closure Plan required under permit condition E.9. The monitoring program shall include sampling parameters and measurable performance criteria to evaluate the success of revegetation, habitat restoration, and erosion control prescriptions for achieving the end land use and land capability objectives.

(c) The Permittee shall evaluate potential contingency options that could be implemented if results of the reclamation success monitoring program indicate
that site-specific end land use objectives may not be fully achieved and include the analysis of the options as part of the Reclamation and Closure Plan required in E.9.

E. Reclamation and Closure Program

1. Reclamation Security

(a) The Permittee shall cause to be deposited with the Minister of Finance additional security in the amount of Six Million Six Hundred Eighty One Thousand, Eight Hundred dollars ($6,681,800.00) bringing the total security for this permit to Thirty One Million Three Hundred and Fifty Thousand, Six Hundred and Eleven dollars ($31,350,611.00). 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. The Permittee shall deposit the additional security on the installment schedule set out below:

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(b) Over the life of the mine, the security will be adjusted to cover all the costs associated with carrying out all the conditions of this permit. Upon application by the Permittee, the amount of security in condition D.1.(a) may be reduced if mining or development work will create less disturbance and liability, or to reflect reduced liability due to reclamation work completed.
(c) The Permittee shall submit a “Draft Technical Assessment Report for the Long-Term Water Management Plan (LTWMP)” to the Ministry of Environment by June 30, 2016. If the document does not address the information requirements summarized in Appendix 2 of this permit to the satisfaction of the Chief Inspector, the Permittee shall cause to be deposited with the Minister of Finance additional security in the amount of Three Million Eight Hundred Thousand dollars ($3,800,000.00).

(d) If the updated site-wide Reclamation and Closure Plan is not submitted by January 15, 2017, and does not include the information required in the table of concordance as per permit conditions E.9 (a) and (b) to the satisfaction of the Chief Inspector, the Permittee shall cause to be deposited with the Minister of Finance additional security in the amount of Three Million Eight Hundred Thousand dollars ($3,800,000.00).

(e) An updated assessment of the assets included under the asset security agreement shall be provided with the Reclamation and Closure Plan due by January 15, 2017.

2. **Land Use**

The Permittee shall develop an End Land Use Plan based on pre-mining land use and post-mining land capability modeling as per permit condition E.3 as part of the Reclamation and Closure Plan required under permit condition E.9. The End Land Use Plan and capability modeling shall be used to inform the development of site-specific reclamation prescriptions.

3. **Capability**

(a) The Permittee shall prepare and include in the Reclamation and Closure Plan required under permit condition E.9, a quantitative inventory with maps of pre- and post-mining land capability. The inventory and mapping shall specify the site series with the ecosystem classifications.

(b) For each site series targeted and inventoried for the post-closure landscape, the Permittee shall provide descriptions of the parent materials, surface soil properties and depth, slope and slope position, aspect, available moisture holding capacity, capability objective, and revegetation prescription in the Reclamation and Closure Plan required under permit condition E.9.
4. **Revegetation**

The Permittee shall restore land capability, ecosystem function, and traditional aboriginal uses where appropriate. Revegetation practices shall be conducted with the intent of establishing appropriate species and densities that are similar to naturally occurring ecosystems at similar elevations, aspects, and climatic conditions. Details of the proposed re-vegetation programs, including species and densities prescribed for specific areas, and sources of revegetation supplies, shall be included in the Reclamation and Closure Plan required under permit condition E.9.

5. **Growth Medium**

Permit conditions D.2.(a) to (c) of the July 25, 2013 *Mines Act* permit amendment are rescinded and replaced with the following conditions:

(a) On all lands to be revegetated, the growth medium shall satisfy end land use, land capability, and water quality objectives.

(b) The Permittee shall develop a site-specific soil replacement plan designed to achieve land capability and land use targets defined as per the End Land Use Plan under permit condition E.2 and post-closure land capability modeling under permit condition E.3.

(c) The Permittee shall ensure that opportunities to reduce infiltration through waste rock and ore stockpiles that will be reclaimed are evaluated concurrent to development of the soil replacement plan.

(d) An assessment shall be conducted in order to identify contingency options (i.e., alternatives to soil previously stockpiled or salvaged from disturbance footprints approved in this amendment) that can be implemented in the event that soil volumes available on site are insufficient to source the soil replacement plan. This shall include a survey and assessment of additional resources of soil materials that could be used.

(e) Soil replacement operations that occur shall be monitored 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 and capability objectives. All results must be presented in the Annual Reclamation Report.
(f) Surface preparation shall occur in a manner and extent that ameliorates the severity of compaction that exists prior to, and after, placement of growth medium, and addresses end land use, land capability, and erosion control objectives.

6. Erosion Control

Permit condition D.3(b) of the July 25, 2013 Mines Act permit amendment is rescinded and replaced with the following condition:

The Permittee shall ensure that erosion potential is minimized to the extent practicable through landform configuration, appropriate surface preparation, development of maintenance-free vegetation covers, and self-sustaining drainage control features and watercourses.

7. Tailings Storage Facility

An assessment shall be conducted to evaluate the options available for reclamation and closure designs of the TSF. The assessment shall evaluate options for maximizing long-term stability, minimizing long-term monitoring and maintenance requirements, and integrating site-wide land capability and land use objectives. The assessment and results shall be included in the Reclamation and Closure Plan required under permit condition E.9, and shall be used to establish proposed reclamation prescriptions, post-closure monitoring programs and the liability cost estimate provided in that report.

8. Underground Openings

An assessment shall be conducted to evaluate the options available for closure designs of the underground openings. The assessment shall evaluate options for maximizing long-term stability, minimizing long-term monitoring and maintenance requirements, and consider end land use objectives. The assessment and results shall be included in the Reclamation and Closure Plan required under permit condition E.9, and shall be used to establish proposed closure prescriptions, post-closure monitoring programs and the liability cost estimate provided in that report.

9. Reclamation and Closure Plan

(a) The Permittee shall develop a table of concordance in support of the updated site-wide Reclamation and Closure Plan in consultation with the Chief Inspector, Williams Lake Indian Band and Xat’sull First Nation. The final version of this document shall be submitted to the Chief Inspector by July 31, 2016.
On or before January 15, 2017, the Permittee shall submit a site-wide Reclamation and Closure Plan. At a minimum, the plan shall include the following information:

- an updated land use plan and land capability inventory;
- an updated reclamation program with detailed site-specific reclamation prescriptions, including soil replacement and revegetation;
- closure objectives and criteria for each mine component/reclamation unit;
- the current status of the mine plan and reclamation obligations;
- a compilation and interpretation of all monitoring including MI/ARD characterization, water quality and quantity;
- an updated site-wide water quality and quantity predictions that have been used to inform reclamation and closure planning;
- a reclamation research program;
- closure and maintenance activities;
- contingency plans;
- a detailed schedule outlining when the reclamation activities for each component of the reclamation prescription for each reclamation unit will be conducted;
- a breakdown of outstanding liabilities and associated costs; and,
- an update to the table of concordance required under permit condition E.9.(a) that references the location of required information within the Reclamation and Closure Plan.

All other terms and conditions remain.
Table 1: TSF Quantitative Performance Objectives during Normal Operation

<table>
<thead>
<tr>
<th>Quantitative Performance Objective</th>
<th>Value</th>
<th>Source / Comment / Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Impoundment Filling Schedule</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TKF Capacity</td>
<td>979 m Tailings</td>
<td>27.8 million tonnes</td>
</tr>
<tr>
<td>Elevation</td>
<td></td>
<td>20.6 million m³ at 1.35 tonnes / m³ and 1.0 % deposition angle.</td>
</tr>
<tr>
<td>Impoundment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Filling Schedule</td>
<td></td>
<td></td>
</tr>
<tr>
<td>970 m Tailings Elevation</td>
<td>Q1 2020</td>
<td>Mine plan (MPMC 2015a). Based on deposition starting on May 2018 and a 22.000 tonnes/day nominal tailings production rate.</td>
</tr>
<tr>
<td><strong>Beach Width</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inspect frequency</td>
<td>Daily</td>
<td></td>
</tr>
<tr>
<td>Normal Operating Zone</td>
<td>&gt; 100 m</td>
<td>Minimum during normal operating conditions after beach developed along Corner 1 embankment.</td>
</tr>
<tr>
<td>Concern Zone</td>
<td>60 to 100 m</td>
<td>Increase pumping from TSF to other facilities and increase monitoring frequency of beach width and freeboard, particularly in areas of reduced beach widths.</td>
</tr>
<tr>
<td>Buffer Zone</td>
<td>20 to 50 m</td>
<td>Maximize pumping from TSF to other facilities and increase monitoring frequency of beach width and freeboard and paremeters, particularly in area of reduced beach widths.</td>
</tr>
<tr>
<td>Unsafe or Out of</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance Operating Zone</td>
<td>0 to 20 m</td>
<td>Some action as for Buffer Zone. Suspend slurry deposition activities if reduced beach width is unrelated to freshet event or IDF. Freshet generally expected each year between March and July.</td>
</tr>
</tbody>
</table>

**TSF Water Management**

| Operating Pond Storage Volume    | Minimum          | 1 million m³ | Provided by MPMC. |
|                                  | Maximum          | 1.5 million m³ | Based on maintaining 100 m beach width. |
| Pond depth                       | Minimum          | 3 m           | Provided by MPMC. Minimum pond depth at base location. |
|                                  | Maximum          | 4 m           | Based on maintaining 100 m beach width. |
| Freeboard                        |                  |               |                                                                                           |
| Inspect frequency                | Daily            |                                                                                           |
| Normal Operating Zone            | ≥ 1.1 m          | Inflow design flow (IDF) based on the probable maximum precipitation (PMP) 24-hour event combined with the 1 in 2 year storm. (Golder 2016). |
| Concern Zone                     | 1.0 to 1.1 m     | Increase pumping from TSF to other facilities and increase monitoring frequency of freeboard and beach width, particularly in areas of reduced beach width. |
| Buffer Zone                      | 0.5 to 1.0 m     | Maximize pumping from TSF to other facilities and increase monitoring frequency of freeboard, beach width and paremeters, particularly in areas of reduced beach width. |
| Unsafe or Out of                  |                  |                                                                                           |
| Compliance Operating Zone        | < 0.5 m          | Same actions as for Buffer Zone. Suspend slurry deposition activities if reduced freeboard is unrelated to freshet event or IDF. Freshet generally expected each year between March and July. |

**Construction Materials and Schedule**

| Construction Schedule            | To elevation 970 m | Year 2 |                                                                                           |
| TST (Zone D)                     | 73,569 m³ (to El. 970) | As needed for construction | Sourced from specific borrow areas or from the excavation of water management structures. |
| Transition (Zone T),             | Filter (Zone F),   | 69,230 m³ (to El. 970) | 10,000 to 20,000 tonnes/day | Sourced from crushing waste rock (including operations or waste rock dumps) or from screening waste rock and filter from borrow sources. |
| Filter and Fill Sand             |                  |                  |                                                                                           |
| Upstream fill                    |                  |                  |                                                                                           |
| (Zone U) -                     |                  |                  |                                                                                           |
| Tailings Back or Rockfill        |                  |                  |                                                                                           |
| Rockfill (Zone C)                |                  |                  |                                                                                           |
| 1,134,300 m³ (to El. 970)       | 11 million tonnes/year (direct haul run-of-mine waste rock) | Provided by MPMC. Sourced from direct haul run-of-mine waste rock. Additional rock available from dump/stockpiles. |

Golder Associates
## APPENDIX 1 CONTINUED: QPO PAGE 2 OF 3

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Threshold Levels for Response to Instability</th>
<th>Source / Comment / Action</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Datum Stability</strong></td>
<td><strong>Trigger Points</strong></td>
<td><strong>Observation</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Normals 06</strong></td>
<td><strong>Normals 05</strong></td>
</tr>
<tr>
<td><strong>Consort Zone</strong></td>
<td><strong>Onset of 12 mm/week</strong></td>
<td><strong>Onset of 10 mm/week</strong></td>
</tr>
<tr>
<td><strong>Buffer Zone</strong></td>
<td><strong>Onset of 8 mm/week</strong></td>
<td><strong>Onset of 6 mm/week</strong></td>
</tr>
<tr>
<td><strong>Wall/Substructure</strong></td>
<td><strong>Onset of 10 mm/week</strong></td>
<td><strong>Onset of 8 mm/week</strong></td>
</tr>
</tbody>
</table>

**Survey Measurements**

- **Datum Stability**: Normal, Datum, Vertical Displacement, Horizontal Displacement, Decline.
- **Normal Opening Zone**: Datum, Decline, Vertical Displacement, Horizontal Displacement.
- **Consort Zone**: Datum, Decline, Vertical Displacement, Horizontal Displacement.
- **Buffer Zone**: Datum, Decline, Vertical Displacement, Horizontal Displacement.
- **Wall/Substructure**: Datum, Decline, Vertical Displacement, Horizontal Displacement.

**Sign Indicators**

- **Surface Slope**: Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern, Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern, Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern.
- **Surface Water**: Surplus activities in area of concern and suspect pumping from TFS and other facilities, Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern, Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern, Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern.

**Point Monitors**

- **Surface Slope**: Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern, Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern, Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern, Increase in monitoring frequency of slope instabilities, SAs, survey monuments, and plumb lines around the area of concern.
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## APPENDIX 1 CONTINUED: QPO PAGE 3 OF 3

Table 2: TSF Piezometer Trigger Values during Construction

<table>
<thead>
<tr>
<th>Quantitative Performance Objective</th>
<th>Value</th>
<th>Source / Comment / Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal Operating Zone</td>
<td>Increase of piezometric levels equivalent to a B-bar value &lt; 0.30 at Corner 1 Upper GLU unit (equivalent to 8.6 m for a 13 m embankment raise)</td>
<td>The piezometric levels reported in the 2015 annual dam safety inspection are to be used as baseline. The piezometric levels will take time to return to baseline levels after construction to raise or buttress the embankments. A copy of the figures presenting the piezometric baseline readings is attached.</td>
</tr>
<tr>
<td></td>
<td>Increase of piezometric levels equivalent to a B-bar value &lt; 0.1 at Corner 1 till or glaciofluvial units (equivalent to 2.9 m for a 13 m embankment raise)</td>
<td>Increase monitoring frequency of piezometers, slope inclinometers, SAAs, and survey monuments around the area of concern. Install in-place inclinometer in nearby slope inclinometer if available. Complete inspection of embankment near the area of concern.</td>
</tr>
<tr>
<td>Concern Zone</td>
<td>Increase of piezometric levels equivalent to a B-bar value between 0.3 and 0.45 and at Corner 1 Upper GLU unit (equivalent to 8.6 to 12.9 m for a 13 m embankment raise)</td>
<td>Suspend activities in area of concern and maximize pumping from TSF to other facilities. Increase monitoring frequency of all slope inclinometers, SAAs, survey monuments, and piezometers. Install in-place inclinometer in nearby slope inclinometer if available. Complete inspection of TSF embankments.</td>
</tr>
<tr>
<td></td>
<td>Increase of piezometric levels equivalent to a B-bar value between 0.1 and 0.2 at Corner 1 till or glaciofluvial units (equivalent to 2.9 to 5.7 m for a 13 m embankment raise)</td>
<td>Same actions as for Buffer Zone and suspend slurry deposition and any other activities in the TSF.</td>
</tr>
<tr>
<td>Buffer Zone</td>
<td>Increase of piezometric levels equivalent to a B-bar value between 0.45 and 0.5 at Corner 1 Upper GLU unit (equivalent to 12.9 to 14.3 m for a 13 m embankment raise)</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX 2: INFORMATION REQUIRED FOR DRAFT LONG TERM WATER TREATMENT PLAN – PAGE 1 OF 2

IR.1 Produces a draft long-term water treatment plan that includes a description of projected water treatment needs and availability that is consistent with the long-term water treatment needs of the proposed mine. The long-term water treatment plan should be consistent with the estimated water demands of the total mine operation.

IR.2 Develop a water demand analysis, including a description of the water requirements for each operational unit, including water requirements for each process and each department. The water demand analysis should be consistent with the long-term water treatment needs of the proposed mine.

IR.3 Develop a water supply analysis, including a description of the available water resources, including groundwater and surface water. The water supply analysis should be consistent with the long-term water treatment needs of the proposed mine.

IR.4 Develop a water quality analysis, including a description of the water quality standards that apply to the proposed mine. The water quality analysis should be consistent with the long-term water treatment needs of the proposed mine.

IR.5 Develop a water management plan, including a description of the water management practices that will be implemented. The water management plan should be consistent with the long-term water treatment needs of the proposed mine.

IR.6 Develop a water treatment plan, including a description of the water treatment processes that will be implemented. The water treatment plan should be consistent with the long-term water treatment needs of the proposed mine.

IR.7 Develop a water discharge plan, including a description of the water discharge points and the water quality standards that apply. The water discharge plan should be consistent with the long-term water treatment needs of the proposed mine.

IR.8 Develop a water conservation plan, including a description of the water conservation measures that will be implemented. The water conservation plan should be consistent with the long-term water treatment needs of the proposed mine.

IR.9 Develop a water emergency plan, including a description of the procedures that will be implemented in the event of a water emergency. The water emergency plan should be consistent with the long-term water treatment needs of the proposed mine.

IR.10 Develop a water monitoring plan, including a description of the water monitoring procedures that will be implemented. The water monitoring plan should be consistent with the long-term water treatment needs of the proposed mine.

IR.11 Develop a water reporting plan, including a description of the water reporting procedures that will be implemented. The water reporting plan should be consistent with the long-term water treatment needs of the proposed mine.

IR.12 Develop a water audit plan, including a description of the water audit procedures that will be implemented. The water audit plan should be consistent with the long-term water treatment needs of the proposed mine.

IR.13 Develop a water education plan, including a description of the water education programs that will be implemented. The water education plan should be consistent with the long-term water treatment needs of the proposed mine.

IR.14 Develop a water research plan, including a description of the water research projects that will be implemented. The water research plan should be consistent with the long-term water treatment needs of the proposed mine.

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