



PO Box 32, Wekweètì NT X0E 1W0
Tel: 867-713-2500 Fax: 867-713-2502

#1-4905 48th Street, Yellowknife NT X1A 3S3
Tel: 867-765-4592 Fax: 867-765-4593
www.wlwb.ca

January 24, 2021

File: W2021L8-0003

Dawn Kiem

Crown-Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation Division
Box 1500

Yellowknife, NT X1A 2R3

Sent by email

Dear Dawn Kiem,

Re: Colomac– Issuance Package – Water Licence W2021L8-0003 – Miscellaneous – Colomac Mine Site, NT

The Wek'èezhì Land and Water Board (Board) met on January 24, 2021 and considered the Application Package from Crown-Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation Division (CIRNAC-CARD) for Water Licence (Licence) W2021L8-0003 and Land Use Permit W2021X0003 for the Colomac Remediation Project (Project) in accordance with the *Mackenzie Valley Resource Management Act* (MVRMA).

The Board has approved Water Licence W2021L8-0003 (attached) for a term of twenty-five (25) years, effective January 26, 2022 and expiring January 25, 2047. The Licence is supported by the Board's Reasons for Decision. These documents are posted to the Board's Public Registry.¹

Submission Requirements

The Board's decisions on submissions that were considered in conjunction with the Application Package are set out below.

¹ See WLWB (www.wlwb.ca) Online Registry for [W2021L8-0003](#)

Management Plans – Approved

The Board has approved the following Plans:

Condition Number	Title of Plan (Version)
Part B, Condition 12	Engagement Plan (V3.0) ²
Part D, Condition 2	Waste Management Plan (V3.0) ³

When these Plans are next revised and submitted, the Plans must include the changes detailed in the Reasons for Decision.

Management Plans – Not Approved

The Board did not approve the Version 9.0 of the Spill Contingency Plan⁴ submitted with the Application Package as explained in the Reasons for Decision. The Board requires the Version 9.1 of the Spill Contingency Plan be submitted, for approval, as soon as possible. The Licensee may not commence Project activities until the revised Plan is approved.

Inspectors

The Inspectors referred to in the Licence can be contacted at the following office:

Crown-Indigenous Relations and Northern Affairs
P.O. Box 1500
4923 – 52nd Street
Yellowknife NT X1A 2R3
Phone: 867-669-2442 or 867-669-2466
Fax: 867-669-2702

Analyst

The Analyst referred to in the Surveillance Network Program annexed to the Licence can be contacted at the Taiga Environmental Laboratory.⁵

Licence Processes and Additional Information

Sections 5 and 6 of the Board's *Guide to the Water Licensing Process*⁶ (Guide) contain detailed information on licence enforcement and potential post-issuance processes, such as amendments to conditions, and

² See WLWB Online Registry for [Colomac – Engagement Plan – Version 3.0 – Oct 8 21](#)

³ See WLWB Online Registry for [Colomac – Waste Management Plan – Version 3.0 – Oct 8 21](#)

⁴ See WLWB Online Registry for [Colomac – Spill Contingency Plan – Version 9.0 – Oct 8 21](#)

⁵ See GNWT-ENR Taiga Environmental Laboratory webpage (<https://www.enr.gov.nt.ca/en/services/taiga-environmental-laboratory>) for contact information.

⁶ See WLWB Policies and Guidelines webpage for MVLWB [Guide to the Water Licensing Process](#).

assignment to another company. Please be familiar with these sections of the Guide and reach out to Board staff with any questions about Board processes related to the Licence.

Full cooperation of CIRNAC-CARD is anticipated and appreciated. Please contact Anneli Jokela at (867) 765-4588 with any questions or concerns regarding this letter.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Mason Mantla', written in a cursive style.

Mason Mantla
Chair, Wek'èezhìi Land and Water Board

BCC'd to: Wek'èezhìi Distribution List
 Tim Morton – Inspector, CIRNAC
 Mike Roesch, CIRNAC
 Jessica Wilson, CIRNAC-CARD
 Beth Cowan, CIRNAC-CARD

Attached: Water Licence W2021L8-0003



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**Crown-Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation Division
 Water Licence W2021L8-0003**

Pursuant to the *Mackenzie Valley Resource Management Act* and Mackenzie Valley Federal Areas Waters Regulations, the Wek'èezhii Land and Water Board grants this Water Licence to:

Crown-Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation
 Division

(Licensee)

of Box 1500, Yellowknife, NT, X1A 2R3

(Mailing Address)

hereinafter called the Licensee, to proceed with the following undertaking, subject to the annexed definitions and conditions contained therein:

Location:	Colomac Remediation Project
Water Management Area:	Northwest Territories 01
Purpose:	Miscellaneous – Remediation and Reclamation of former Colomac Mine Site
Type:	Type B
Quantity of Water not to be exceeded:	Not applicable
Effective Date:	January 26, 2022
Expiry Date:	January 25, 2047

**Mason Mantla, Chair
 Wek'èezhii Land and Water Board**

Meaghan MacIntyre-Newell, Witness

Part A: Scope and Definitions

1. Scope

- a) This Licence entitles Crown-Indigenous Relations and Northern Affairs Canada – Contaminants and Remediation Directorate (CIRNAC-CARD), to dispose of Waste for the long-term water management and environmental monitoring activities associated with the Remediation and Reclamation of the abandoned mining and milling operations at the Colomac Mine, located at Baton Lake near Indin Lake, Northwest Territories (Latitude 64° 23' 42" N and Longitude 115° 07' 16"W) and along the Kim-Cass access road.
- b) This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of Waste of any type in any Waters or in any place under any conditions where such Waste or any other Waste that results from the deposits of such Waste may enter any Waters. Whenever new Regulations are made or existing Regulations are amended by the Governor in Council under the *Waters Act*, or other statutes imposing more stringent conditions relating to the quantity or type of Waste that may be so deposited or under which any such Waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be automatically amended to conform with such Regulations.
- c) Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. Definitions

"Act" means the *Waters Act*.

"Analyst" means an Analyst designated by the Minister under section 65(1) of the *Act*.

"Board" means the Wek'èezhìi Land and Water Board established under section 57.1 of the *Mackenzie Valley Resource Management Act*.

"Construction" means any activities undertaken to construct or build any components of, or associated with, the development of the Project.

"Dam Safety Guidelines" means the Canadian Dam Association's (CDA) *Dam Safety Guidelines* (DSG), 2007, or subsequent editions. The scope and applicability of the DSG referred to in this Licence, is presented in section 1 of the DSG.

"Discharge" means the direct or indirect release of any water or Waste to the Receiving Environment.

"Earthworks" are Engineered Structures that are constructed with or require excavation into one or more of the following unconsolidated materials: Waste Rock, Tailings, overburden, sand, silt, clay, gravel, till, soil, or any other borrow material.

"Effluent Quality Criteria" means a Waste meeting a quality that will be Discharged into a Receiving Environment, for this Licence, Effluent Quality Criteria is defined under Part D, Condition 4.

"Engineered Structure" means any structure or facility related to the deposit of Waste that is, or normally

would be, designed and approved by a Professional Engineer.

“Inspector” means an Inspector designated by the Minister under section 65(1) of the *Act*.

“Licensee” means the holder of this Licence.

“Maximum Average Concentration” means the moving average of any four consecutive analytical results submitted to the Board in accordance with the sampling and analysis requirements specified in the Surveillance Network Program.

“Minister” means a duly appointed member of the Executive Council who is responsible for the *Act* or the department responsible for administering that *Act*.

“Modification” in respect of an Engineered Structure, means a change, other than an expansion, that does not alter the purpose or function of a structure.

“Professional Engineer” means a person who is registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists in accordance with the *Engineering and Geoscience Professions Act*, as a professional Engineer.

“Project” means the undertaking described in Part A, Condition 1.

“Receiving Environment” means, for the purpose of this Licence, the natural environment that receives any deposit or Discharge of Waste, including Seepage or runoff, from the Project.

“Reclamation” means activities which facilitate the return of areas affected by the Project to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment, human activities, and the surrounding environment.

“Regulations” means Regulations proclaimed pursuant to section 63 of the *Act*.

“Remediation” means the removal, reduction or neutralization of substances, Wastes or hazardous materials from a site so as to prevent or minimize any adverse effects on the environment now or in the future.

“Remediation Plan” means the document entitled *“Colomac Site Remediation Plan - Final Report”* dated March 2004 and prepared by the Contaminated Sites Office (CSO), including all supporting documents submitted with the Plan and filed with the Board at that time, as well as the supplemental information submitted by the CSO in the August 9, 2004, letter consisting of: notes from community consultation (Lafferty report, May 2004); baseline environmental conditions in North Pond and L-Shaped Lake (Rescan report); risk assessment of candidate effluent quality criteria for Tailings Lake discharge (SENES report); and evaluation of candidate effluent quality criteria (MESL report).

“Seepage” includes water or Waste that drains through or escapes from any structure designed to contain, withhold, divert or retain water or Waste.

“Surveillance Network Program” means a monitoring program established to define environmental sampling and analysis requirements, to collect water quality data, and to assess Discharge quality, Licence compliance, and potential for impact to the environment.

“Tailings” means material rejected from the mill after the recoverable valuable minerals have been extracted.

“Tailings Containment Area” comprises the Tailings containment basins consisting of Tailings Lake, Spruce

Lake and Fuscum Lake and their associated dams and/or dykes.

“Unauthorized Discharge” is a Discharge of any water or Waste not authorized under this Licence.

“Waste” means Waste as defined by section 1 of the *Act*.

“Wastewater” means water that is generated by Project activities or originates on site that contains Waste, and includes, but is not limited to runoff, Seepage, minewater and effluent.

“Waste Rock” means all unprocessed rock that is produced as a result of mining operations.

“Waters” mean any waters as defined by section 1 the *Act*.

Part B: General Conditions

1. The Licensee shall ensure that a copy of this Licence is maintained at the Project site at all times.
2. The Licensee shall take every reasonable precaution to protect the environment.
3. No later than May 31st of the year following the calendar year reported, the Licensee shall file an **Annual Report** with the Board which shall contain the information set out in Schedule 1, Condition 1.
4. The Licensee shall operate in accordance with any plans approved pursuant to the conditions of this Licence and with any revisions to such plans, as may be made from time to time pursuant to the conditions of this Licence and as approved by the Board. If any plan is not approved by the Board, the Licensee shall revise the plan according to the Board's direction and re-submit it to the Board for approval.
5. The Licensee shall comply with the Schedules which form part of this Licence.
6. The Schedules may be amended at the discretion of the Board through a process which shall include public notice of the Board's intention to consider a change, such notice to be provided to the Licensee, the Minister, regional CIRNAC officials and other affected or interested stakeholders. Any such notice shall be accompanied by an explanation of the proposed change to a Schedule and reasonable opportunity shall be provided for comments to be submitted by interested parties, and considered by the Board, before a decision is made.
7. The matter for which flexibility is required by the Board and where amendments to the Schedules may be made by the Board from time to time under Part B, Condition 5, include the following:
 - Schedule 1: General Conditions
 - Schedule 2: Construction and Maintenance
 - Schedule 3: Post-Closure Monitoring
8. The Licensee shall comply with the Surveillance Network Program annexed to this Licence, and any amendments to the Surveillance Network Program as may be made by the Board.
9. The Surveillance Network Program and any compliance dates specified in the Licence may be amended at the discretion of the Board.
10. The Licensee shall post and maintain signs necessary to identify the stations of the Surveillance Network Program in a manner satisfactory to an Inspector.
11. Meters, devices or other such methods used for measuring the volumes of Waste Discharged shall be installed, operated and maintained by the Licensee to the satisfaction of an Inspector.
12. The Licensee shall adhere to the approved **Engagement Plan**. The Plan shall be in accordance with the Mackenzie Valley Land and Water Board's *Engagement Guidelines for Applicants and Holders of Land Use Permits and Water Licences*, 2014, or subsequent versions.
13. The Licensee shall review the **Engagement Plan** annually and shall submit updates to the Board for approval at the following times:

- a) a minimum of 60 days prior to any proposed changes to the approve Plan; and,
 - b) upon the request of the Board.
14. All revised management plans submitted to the Board shall include a brief summary of the changes made to the plan.
 15. In conducting its activities under this Licence, the Licensee shall make best efforts to consider and incorporate any scientific information and traditional knowledge that is made available to the Licensee.
 16. In each submission required by this Licence or by any directive from the Board, the Licensee shall identify all recommendations based on Traditional Knowledge received, describe how the recommendations were incorporated into the submission, and provide justification for any recommendation not adopted.
 17. All references to policies, guidelines, codes of practice, statues, regulations, or other authorities shall be read as a reference to the most recent versions, unless otherwise noted.
 18. The Licensee shall ensure all submission to the Board:
 - a. Are in accordance with the *MVLWB Document Submission Standards*;
 - b. include a conformity statement or table which identifies where the requirements of this Licence, or other directives from the Board, are addressed; and
 - c. include any additional information requested by the Board.
 19. If any date for any submission falls on a weekend or holiday, the Licensee may submit the item of the following business day.
 20. The Licensee shall comply with all directives issued by the Board in respect of the implementation of the conditions of this Licence.
 21. The Licensee shall immediately provide written notification to the Board and an Inspector of any non-compliance with the conditions of this Licence.
 22. The Licensee shall immediately provide written notification to the Board of any non-compliance with a Board directive issued in respect of the implementation of the conditions of this Licence.
 23. The Licensee shall ensure that a copy of any written authorization issued to the Licensee by an Inspector is provided to the Board.

Part C: Conditions Applying to Water Use

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Part D: Conditions Applying to Water and Waste Management

1. The Licensee shall manage waters and Waste with the objective of minimizing the effects of Project activities on the quantity and quality of Waters in the Receiving Environment through the use of appropriate mitigation measures, monitoring, and follow-up actions.
2. The Licensee shall operate in accordance with the approved **Waste Management Plan**. The Plan shall be in accordance with the Mackenzie Valley Land and Water Board’s *Guidelines for Developing a Waste Management Plan*, 2011, or subsequent editions.
3. The Licensee shall review the **Waste Management Plan** annually and shall submit updates to the Board for approval at the following times:
 - a) a minimum of 60 days prior to any proposed changes to the approve Plan; and,
 - b) upon request of the Board.
4. **Effluent Quality Criteria:**
 - a) All Wastes Discharged by the Licensee from Tailings Lake to the Receiving Environment (Point of Compliance), namely Surveillance Network Program Station 1563-39, shall meet the following effluent quality requirements:

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Conventional Variables		
Total Suspended Solids	15	30
Nutrients		
Total Ammonia (as N)	5.0	10.0
Nitrite (as N)	0.4	0.8
Nitrate (as N)	5	10
Total Phosphorous (as P) ¹	0.22	0.44
Metals		
Total Aluminum	0.4	0.8
Total Arsenic	0.04	0.08
Total Copper	0.010	0.020
Total Lead	0.010	0.020
Total Nickel	0.05	0.10
Total Selenium	0.005	0.010
Total Silver	0.002	0.004
Total Zinc	0.020	0.040
Cyanide Species		
Total Cyanide	0.10	0.20
Weak Acid Dissociable (WAD) Cyanide	0.025	0.050
Thiocyanate	3	6

- b) The Waste Discharged shall have a pH between 6.5 and 8.5, and no visible sheen of oil or grease.

5. If Water quality data from any sample collected at Surveillance Network Program stations 1563-39 exceeds the EQC specified in Part F, Condition 20, the Licensee shall:
 - a) Notify the Board and an Inspector immediately;
 - b) Report the spill immediately in accordance with the Spill Contingency Plan referred to in Part H, Condition 1; and
 - c) Within 30 days of initially reporting the incident, or within a timeframe authorized by an Inspector, submit a detailed report on the occurrence, including a summary of corrective actions taken, to the Board and an Inspector.

6. The Tailings Containment Area and Zone 2.0 Pit shall be operated and maintained to engineering standards such that:
 - a) Seepage from the Tailings Containment Area is minimized; and
 - b) erosion of containment structures facilities is addressed immediately.

7. The Licensee shall collect, intercept, treat and discharge hydrocarbon contaminated water and soil in accordance with section 5.10.1 of the *Colomac Site Remediation Plan Final Report March 2004* and the letter submitted to the Board dated August 30, 2004. Any changes to the approved methods as outlined in the *Colomac Site Remediation Plan* will be submitted to the Board for approval. The details of the hydrocarbon remediation activities are described in the Hydrocarbon Remediation Program, Colomac Mine Site: Final Remedial Action Plan 2005-2007 (April 2005), and subsequent annual updates.

8. Absorbent material used to collect hydrocarbon contaminated Seepage shall be disposed of in accordance with the approved **Waste Management Plan**.

9. The Licensee shall notify an Inspector and take necessary corrective action to mitigate any erosion problem to the satisfaction of an Inspector.

10. The Licensee shall minimize erosion by implementing suitable erosion control measures that shall be located and maintained to the satisfaction of an Inspector.

Part E: Conditions Applying to Construction and Maintenance

1. The Licensee shall ensure that all structures intended to contain, withhold, divert, or retain water or Waste are designed, constructed, and maintained to prevent escape of Waste to the Receiving Environment.
2. The Licensee shall ensure that all Engineered Structures intended to contain, withhold, divert, or retain water or Waste that meet the definition of a dam under the *Dam Safety Guidelines*, are designed, constructed, and maintained to meet or exceed the *Dam Safety Guidelines*.
3. Prior to commencement of any non-routine maintenance work, the Licensee shall notify the Inspector and the Board.
4. A minimum of 10 days prior to commencement of Construction the Licensee shall provide written notification to the Board and an Inspector.
5. At least 45 days prior to the start of Construction of any Engineered Structures, the Licensee shall submit a **Construction Plan** to the Board which shall contain the information set out in Schedule 2, Condition 1, for approval.
6. The Licensee shall ensure that all Engineered Structures are constructed and maintained in accordance with the recommendations of the Professional Engineer responsible for the design, including but not limited to recommendations regarding field supervision and inspection requirements.
7. The Licensee shall implement best practices for erosion control during Construction and maintenance work, to the satisfaction of an Inspector.
8. Within 90 days of completion of all Engineered Structures, the Licensee shall provide final as-built drawings stamped by a Professional Engineer of the Engineered Structures referred to in Part E, Condition 5, including rationale for any changes from the original design, and submitted to the Board.
9. At least 90 days prior to the demolition of any structure or facility related to deposit of Waste, the Licensee shall submit a **Demolition Plan** outlining the process and timelines to the Board for approval.

Part F: Conditions Applying to Modifications

1. The Licensee may, without written approval from the Board, carry out Modifications to Engineered Structures provided the following requirements are met:
 - a) at least 60 days prior to beginning the Modifications, the Licensee has notified the Board and Inspector, in writing, of the proposed Modifications;
 - b) the Modifications do not place the Licensee in contravention of the Licence, the Act, or Federal, Territorial or Municipal Legislation;
 - c) the Board has not, during the 60 days following notification of the proposed Modifications, informed the Licensee that further information is required or that review of the proposal will require more than 60 days;
 - d) an Inspector has authorized the proposed Modifications and provided a letter of notification to the Board; and,
 - e) the Board has not rejected the proposed modifications.
2. Modifications for which all of the conditions referred to in Part F, Condition 1 have not been met, may be carried out only with written approval from the Board.
3. Within 90 days of the completion of Modifications referred to in Part F, Condition 1, the Licensee shall provide as-built plans and drawings stamped by a Professional Engineer to the Board.

Part G: Conditions Applying to Post-Closure Monitoring

1. The Licensee shall operate in accordance with the approved **Post-Closure Monitoring and Maintenance Plan**.
2. The Licensee shall annually review the **Post-Closure Monitoring and Maintenance Plan** and shall submit updates to the Board for approval at the following times:
 - a) a minimum of 60 days prior to any proposed changes to the approved Plan; and,
 - b) upon the request of the Board.
3. The Licensee shall ensure that all Earthworks including, but not limited to, Dam 1/1B, the Dyke 7 Spillway, the Tailings Cap, the Primary Crusher Cap, the Steeves Shoreline Restoration, the Zone 2.5 Landfill, and Dam 2 undergo a physical and geotechnical inspection at the frequency identified in the approved **Post-Closure Monitoring and Maintenance Plan**. The Licensee shall:
 - a) provide written notification to an Inspector a minimum of two weeks prior to each inspection; and,
 - b) within 90 days of completing all inspections conducted by a Professional Engineer, submit:
 - i. the Professional Engineer's full **Physical and Geotechnical Inspection Report** to the Board. The report shall contain the information set out in Schedule 3, Condition 2; and,
 - ii. an implementation plan outlining how the Licensee will respond to each recommendation in the Professional Engineer's Report, including a rationale for any decisions that deviate from the Professional Engineer's recommendations.
4. The Licensee shall conduct Dam Safety Reviews of all structures which meet the definition of a dam under the *Dam Safety Guidelines* at the frequency outlined in the approved **Post Closure Monitoring and Maintenance Plan**. Dam Safety Reviews will be conducted by a Professional Engineer in accordance with the *Dam Safety Guidelines*. The timing of the Dam Safety Review inspection will be at the discretion of the Professional Engineer conducting the inspection. Within 90 days of completing a Dam Safety Review, the Licensee shall submit to the Board:
 - a) the Professional Engineer's Dam Safety Review report; and,
 - b) an implementation plan outlining how the Licensee will respond to each recommendation in the Professional Engineer's Dam Safety Review report, including a rationale for any decisions that deviate from the Professional Engineer's recommendations.
5. No later than March 31, 2018 and every 5 years thereafter, or as directed by the Board, the Licensee shall submit a **Performance Assessment Report** to the Board for approval. The **Report** shall contain the information set out in Schedule 3, Condition 3.

Part H: Conditions Applying to Contingency Planning

1. The Licensee shall operate in accordance with the approved **Spill Contingency Plan**. The Plan shall be in accordance with the Indian and Northern Affairs Canada *Guidelines for Spill Contingency Planning, 2007*, or subsequent editions.
2. The Licensee shall ensure that Unauthorized Discharges associated with the Project do not enter and Waters.
3. The Licensee shall ensure that spill prevention infrastructure and spill response equipment is in place prior to commencement of the Project.
4. The Licensee shall review the **Spill Contingency Plan** annually and shall submit updates to the Board for approval at the following times:
 - a) a minimum of 60 days prior to any proposed changes to the approve Plan; and,
 - b) upon the request of the Board.
5. If, during the period of this Licence, a spill or Unauthorized Discharge of Waste occurs, or is foreseeable, the Licensee shall:
 - a) implement the **Spill Contingency Plan**;
 - b) report the incident immediately to the 24-hour Spill Report Line (867) 920-8130 in accordance with instructions contained in Spill Report Form NWT 1752/0593 or subsequent editions;
 - c) report each spill and Unauthorized Discharge of Waste to the Board (867) 765-4592 and an Inspector (867) 669-2442, within 24 hours; and,
 - d) within 30 days of a spill or Unauthorized Discharge reported under Part H, Condition 2b), the Licensee shall submit a detailed report to the Board and an Inspector.
6. All spills and Unauthorized Discharges of water or Waste shall be cleaned up and the affected area reclaimed to the satisfaction of an Inspector.

Schedule 1

Part B: General Conditions

1. The **Annual Report** referred to in Part B, Condition 2, shall include, but not be limited to, the following information:
 - a) the monthly and annual quantities in cubic metres of each and all Wastes Discharged;
 - b) all information required under Part A, Condition 2 of the Surveillance Network Program;
 - c) a summary of all Modifications, Construction, repairs, and maintenance work carried out at the site during the previous calendar year and a description of any work planned by the Licensee for the upcoming year;
 - d) annual total volumes of Seepage from the Tailings Containment Area and Seepage to and from the Zone 2.0 Pit;
 - e) a list of all Unauthorized Discharges and a summary of all associated Remediation activities;
 - f) a summary and an analysis of all results obtained from monitoring conducted under the **Post-Closure Monitoring and Maintenance Plan** during the calendar year reported;
 - g) a summary of any studies requested by the Board that relate to Waste disposal or post-closure monitoring, and a brief description of any future studies planned;
 - h) descriptions of engagement and community participation in monitoring from the calendar year reported;
 - i) a summary of how Traditional Knowledge was incorporated into decision making;
 - j) any other details on Waste disposal, or post-closure monitoring requested by the Board or an Inspector by November 1st of the year being reported; and
 - k) a map depicting all active SNP stations.

Schedule 2

Part E: Construction and Maintenance

1. A **Construction Plan** referred to in Part E, Condition 5 shall include, but not be limited to, the following details:
 - a) a description of the work to be carried out;
 - b) the proposed location of the Engineered Structure;
 - c) a schedule for the Construction;
 - d) drawings of all Engineered Structures stamped by a Professional Engineer;
 - e) any potential impacts to the Receiving Environment;
 - f) a detailed description of any measures used to prevent or mitigate impacts to the Receiving Environment; and,
 - g) a description of any monitoring including, but not limited to, sampling locations, parameters measured and frequencies of sampling to be carried out during Construction to determine impacts to the Receiving Environment.

Schedule 3

Part G: Post-Closure Monitoring

1. The **Post-Closure Monitoring and Maintenance Plan** referred to in Part G, Condition 2, shall include, but not be limited to the following:
 - a) current classifications for all structures that meet the definition of a dam, in the *Dam Safety Guidelines*; for each structure that meets the definition of a dam, the report shall include:
 - i. a description of the dam;
 - ii. a consequence assessment; and,
 - iii. the classification of the dam;The consequence assessment and dam classifications shall be in accordance with the *Dam Safety Guidelines*. Provide a rationale for any structures intended to contain, withhold, divert, or retain water or Waste that have not been classified as a dam.
 - b) a description of the frequency at which the Licensee will conduct a Dam Safety Review of each of the structures classified in Condition 1a), to meet or exceed the frequency in the *Dam Safety Guidelines*;
 - c) a section titled 'Maintenance' which includes the following details:
 - i. a description and schedule of routine maintenance work to be conducted at the site;
 - ii. a description of reasonably likely non-routine maintenance work that may be required, including a description of the work to be carried out at Steeves Lake Shoreline;
 - iii. a description of how the Licensee will notify the Board and the Inspector of the any non-routine maintenance work;
 - iv. any potential impacts to the Receiving Environment;
 - v. a detailed description of any measures used to prevent or mitigate impacts to the Receiving Environment during routine maintenance work; and,
 - vi. a description of any monitoring including, but not limited to, sampling locations, parameters measured and frequencies of sampling to be carried out during maintenance activities to determine impacts to the Receiving Environment.
 - d) any additional proposed updates, at the discretion of the Licensee.
2. The **Physical and Geotechnical Inspection Report** referred to in Part G, Condition 4 shall include, but not be limited to the following:
 - a) documentation of the inspection locations and methodologies;
 - b) the results of the inspection and all problems identified;
 - c) remedial measures recommended; and,
 - d) the status of any remedial measures recommended in the previous year's report with an explanation regarding any recommendations not implemented.

3. **The Performance Assessment Report** referred to in Part G, Condition 6, shall include, but not be limited to the following:
- a) a summary and analysis of all results collected as part of the monitoring program outlined in the **Post-Closure Monitoring and Maintenance Plan** since implementation of the Plan;
 - b) a detailed comparison of the conditions at the site as described in Condition 3a), against the monitoring endpoints that are described in the **Post-Closure Monitoring and Maintenance Plan**; and,
 - c) updated photographs of all structures and monitored components.

Surveillance Network Program (Amended February 27, 2019)
Annexed to Water Licence W2014L8-0003

Part A: Reporting Requirements

1. The Surveillance Network Program (SNP) is effective on the effective date of the Licence.
2. The Licensee shall submit the following information in electronic and printed formats as part of the **Annual Report** required in Part B, Condition 2 of the Licence:
 - a) All laboratory results and analysis of all data collected during each SNP sampling period for the previous year;
 - b) Tabular summaries of all data and information generated under Part B and C of the SNP;
 - c) Rationale for any SNP sites where samples were not collected;
 - d) Quality Assurance/Quality Control results and interpretations, in accordance the approved **Quality Assurance/Quality Control Plan**.
 - e) Any interpretive comments and calculations;
 - f) Identification of any anomalies and trends;
 - g) If any SNP sites were established, activated, or moved during the period being reported, the coordinates for each site and an updated map identifying the locations all the SNP sites.

Part B: Water Level, Flow and Volume Measurements

The Licensee shall measure the water levels of Tailings Lake, Zone 2.0 Pit, Zone 2.5 Pit, and Zone 3.0 pit twice per year, once in the fall and once in the spring (after freshet).

Part C: Site Descriptions and Sampling Requirements

1. All analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater* or by such other methods as may be approved by an Analyst.
2. All analyses shall be performed in a laboratory accredited by the Canadian Association for Laboratory Accreditation (CALA) for the specific analyses to be performed or as approved by an Analyst.
3. The Licensee shall have a **Quality Assurance/Quality Control Plan** which includes both field and laboratory requirements and which must meet with the approval of an Analyst.
4. The Licensee shall annually review the approved **Quality Assurance/Quality Control Plan** and shall submit updates to the Board for approval at the following times:
 - c) a minimum of 60 days prior to any proposed changes to the approve Plan; and,
 - d) upon the request of the Board.
5. The **Quality Assurance/Quality Control Plan** shall be implemented as approved by an Analyst.

SNP Site Quick Reference Table

SNP Site #	Description	Status	Sampling Frequency
1563-2	Outlet from Steeves Lake – South end	Active	Biannually between June and October
1563-26	Zone 2.0 Pit	Active	Biannually between June and October
1563-39	Tailings Lake at Discharge Channel – POINT OF COMPLIANCE	Active	Biannually between June and October

For the purposes of this Water Licence, the sampling parameters have been grouped into the following categories:

Cyanide1 = Total Cyanide (TCN);

Cyanide Suite = Total Cyanide (TCN), Weak Acid Dissociable Cyanide (WAD CN) Thiocyanate (SCN);

Dissolved Metals = Total elemental analysis by ICP-Metal Scan of: Silver (Ag), Arsenic (As), Aluminum (Al), Barium (Ba), Cadmium (Cd), Cobalt (Co), Copper (Cu), Chromium (Cr), Iron (Fe), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Lead (Pb), Selenium (Se), Strontium (Sr) and Zinc (Zn).

Hydrocarbons = Extractable Hydrocarbons (ExtHC), and Benzene, Toluene, Ethyl-benzene, and Xylene (BTEX);

in situ Ecological = field multiprobe tests at one metre depth intervals for Temperature (T), Conductivity, pH, Redox Potential (Eh), and Dissolved Oxygen;

Major Ions = Alkalinity (Alk), Calcium (Ca), Chloride (Cl), Hardness, Magnesium (Mg), Potassium (K), Sodium (Na), and Sulphate (SO₄);

Microbiological = BOD₅, Faecal Coliforms

Nutrients = Total Ammonia (NH₃ + NH₄⁺ - N), Total Nitrate + Nitrite (NO₃⁻ + NO₂⁻), Total Phosphorous (TP), and Total Organic Carbon (TOC);

Solids = Total Suspended Solids (TSS) and Total Dissolved Solids (TDS);

Standard = pH, Temperature (T), and Conductivity (Cond). These parameters should be measured both in the field as well as in the laboratory.

Total Metals = Total elemental analysis by ICP-Metal Scan of: Silver (Ag), Arsenic (As), Aluminum (Al), Barium (Ba), Cadmium (Cd), Cobalt (Co), Copper (Cu), Chromium (Cr), Iron (Fe), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Lead (Pb), Selenium (Se), Strontium (Sr) and Zinc (Zn).

Note: If any sampling requirement falls within two (2) required sampling categories, it need only be sampled once.

Note: Where metals are analyzed, hardness must be analyzed as well.

Note: Standard suite must be analyzed for all field samples.

ACTIVE STATIONS

Surveillance Network Program (SNP) Station 1563-39 (active): Point of Compliance.

Description:	Tailings Lake surface, immediately prior to Discharge through the Tailings Lake Discharge Channel at Dam 2.
Location:	64°26.944' N, 115°04.502 W
Sampling Frequency:	Biannually between June and October
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, Total and Dissolved Metals
Rationale for Station:	Point of compliance under Part D, Condition 4 of the Water Licence. To determine and compare water quality effluent from Tailings Lake prior to Discharge to CCME Criteria for Protection of Freshwater Aquatic Life. To verify the predictions of the SENES Risk Assessment of Candidate Effluent Quality Criteria for Tailings Lake Discharge Colomac Mine Site July of 2004.

Surveillance Network Program (SNP) Station 1563-2 (active)

Description:	Outlet from Steeves Lake at the south end
Location:	64°22.816'N 115°08.008'W
Sampling Frequency:	Biannually between June and October
Sampling Parameters:	Standard, Solids Major Ions, Nutrients, Total and Dissolved Metals
Rationale for Station:	To provide information on water quality of Steeves Lake outflow.

Surveillance Network Program (SNP) Station 1563-26 (active)

Description:	Zone 2.0 Pit: one sample in mixed zone (above thermocline) and one sample in unmixed zone (below thermocline)
Location:	64°23.956' N 115°05.227' W
Sampling Frequency:	Biannually between June and October
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, In Situ Ecological, and Total Metals and dissolved metals

Rationale for Station:	To determine the extent of cyanide natural degradation throughout the water column, the effects of chemical precipitation, the presence of thermoclines/chemoclines, and the fate of contaminants.
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INACTIVE STATIONS

Surveillance Network Program (SNP) Station 1563-1 (inactive)

Description:	Freshwater intake from Steeves Lake
Location:	64°24.610'N 115°05.834'W
Sampling Frequency:	Monthly
Sampling Parameters:	Standard, Turbidity, Total Coliform, and E-Coli
Rationale for Station:	To determine the potability of Steeves Lake water, the regulation of which falls within the jurisdiction of the Stanton Regional Health Board.
Rationale for Status:	Camp has been demolished, therefore potable water is no longer obtained from this location.

Surveillance Network Program (SNP) Station 1563-3 (inactive)

Description:	Outlet of Dyke Lake
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Station:	Dyke Lake no longer contains water.

Surveillance Network Program (SNP) Station 1563-4 (inactive)

Description:	Inlet to Steeves Lake from Truck Lake
Location:	64°24.221'N 115°06.215'W
Sampling Frequency:	Monthly during periods of open water
Sampling Parameters:	Standard, Solids, Major Ions, Total Ammonia (NH ₃ + NH ₄ ⁺ - N), Nitrate, Total Metals and Hydrocarbons
Rationale for Station:	To monitor water quality of Baton-Spot-Truck Lake outflow & Steeves Lake.
Rationale for Status:	Water quality at this location has been consistent with parameters in other Steeves Lake locations and remediation of this area has removed potential contaminant sources.

Surveillance Network Program (SNP) Station 1563-5 (inactive)

Description:	Seepage from Tailings Containment Area Dam 1
Location:	64°26.437'N 115°02.893'W
Sampling Frequency:	Monthly
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, and Total Metals
Rationale for Station:	To monitor water quality of Dam 1 Seepage.
Rationale for Status:	Location buried from Construction of Dam 1B.

Note: Flow rates and volume of Seepage returned to the Tailings Containment Area shall be monitored daily.

Surveillance Network Program (SNP) Station 1563-6 (inactive)

Description:	Seepage from Dam 2
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Status:	Dam 2 no longer functions as a water-containing structure.

Surveillance Network Program (SNP) Station 1563-7 (inactive)

Description:	Seepage from Dam 3
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Status:	Dam 3 was never built.

Surveillance Network Program (SNP) Station 1563-8 (inactive)

Description:	Seepage from Dam 4
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A

Rationale for Status:	Dam 4 was never built.
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Surveillance Network Program (SNP) Station 1563-9 (inactive)

Description:	Seepage from Dam 5
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Status:	Dam 5 was never built.

Surveillance Network Program (SNP) Station 1563-10 (inactive)

Description:	Fuscum Lake at intake, prior to Discharge; at end of Discharge pipe during periods of Discharge.
Location:	64°25.923'N 115°03.938'W End of pipe coordinates TBD
Sampling Frequency:	Once prior to commencement of Discharge; weekly during Discharge, or daily if conductivity increases; and once on the last day of Discharge.
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, Total Metals,
Rationale for Station:	To monitor the degradation of ammonia and determine if water quality is adequate for Discharge. Weekly to coincide with scheduled flights off site.
Rationale for Status:	Discharge from Fuscum Lake has been discontinued and monitoring is no longer necessary.

Note: Water from Fuscum Lake shall be sampled once a year prior to Discharge to the environment and the samples will be provided to the Environmental Protection Branch of Environment Canada for the purpose of performing a static "pass/fail" bioassay for both rainbow trout *Oncorhynchus mykiss* and cladoceran crustacean *Daphnia magna* (as per Environment Canada's Environmental Protection Series Biological Test Method EPS/1/RM/14);

Surveillance Network Program (SNP) Station 1563-11 (inactive)

Description:	Effluent from the Sewage Disposal Facilities
Location:	Upstream at culvert inlet or downstream at toe of road embankment
Sampling Frequency:	Weekly during decant
Sampling Parameters:	Standard, Solids, Total Ammonia (NH ₃ + NH ₄ ⁺ - N), Microbiological, and if there is a visible sheen, Oil & Grease and Hydrocarbons
Rationale for Status:	Decant will not be necessary due to the low volume of sewage. Site has been remediated, no sewage being produced.

Surveillance Network Program (SNP) Station 1563-12 (inactive)

Description:	Cone Pond at the creek inlet at south shore
Location:	64°25.876'N 115°04.502'W
Sampling Frequency:	Once every two weeks during Fuscum Lake Discharge, and monthly otherwise during periods of open water
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, Total Metals.
Rationale for Station:	To monitor downstream effects of Fuscum Lake Discharge on water quality.
Rationale for Status:	Discharge from Fuscum Lake has been discontinued and monitoring is no longer necessary.

Surveillance Network Program (SNP) Station 1563-13 (inactive)

Description:	Creek downstream of Tailings Containment Area Dam 1
Location:	64°26.467'N 115°02.221'W
Sampling Frequency:	Monthly during periods of open water
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, and Total Metals
Rationale for Station:	To detect any downstream movement of containments from Dam 1 Seepage.
Rationale for Status:	Since the completion of Dam 1, consistently acceptable results have been collected since 2007, and low water volumes indicate

	that the contribution to downstream impacts is low. Therefore, monitoring is no longer necessary.
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Note: Flow rates at SNP Station 1563-13 shall be estimated at the time of sampling and recorded in a logbook.

Surveillance Network Program (SNP) Station 1563-14 (inactive)

Description:	Inflow to North Pond downstream of Tailings Containment Area Dam 2
Location:	64°27.005'N 115°02.824'W
Sampling Frequency:	Monthly during periods of open water
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite and Total Metals.
Rationale for Station:	To monitor a potential Discharge path in the Remediation Plan.
Rationale for Status:	Due to health and safety concerns, monitoring of the Tailings Lake Discharge will continue at Station #39; if water quality results continue to meet Discharge criteria at this location, then water quality results at this down-gradient location can only be less concentrated.

Surveillance Network Program (SNP) Station 1563-15 (inactive)

Description:	Runoff from toe of waste rock storage areas
Location:	6424.021'N 11506.055'W
Sampling Frequency:	Once in the spring and once in the fall following a spring freshet/rain event
Sampling Parameters:	Standard, Solids, Major Ions, Total Ammonia (NH ₃ + NH ₄ ⁺ - N), Nitrate, and Dissolved Metals
Rationale for Station:	To determine the presence of acid/alkaline rock drainage.
Rationale for Status:	Colomac rock did not produce acid/alkaline rock drainage.

Surveillance Network Program (SNP) Station 1563-16 (inactive)

Description:	Runoff from ore storage areas
Location:	N/A

Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Status:	There is minimal ore on site.

Surveillance Network Program (SNP) Station 1563-17 (inactive)

Description:	Reclaim water
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Status:	The mill will not be in operation.

Surveillance Network Program (SNP) Station 1563-18 (inactive)

Description:	Mill tailings taken at mill
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Status:	The mill will not be in operation.

Surveillance Network Program (SNP) Station 1563-19 (inactive)

Description:	Creek between Duck Pond and Cone Lake downstream of culverts under tailings line road
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Status:	Not specifically relevant to the operation as it currently stands.

Surveillance Network Program (SNP) Station 1563-20 (inactive)

Description:	Steeves Lake shoreline below mill site where surface runoff enters Steeves Lake
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Location:	6424.301'N 11507.153'W
Sampling Frequency:	Monthly during periods of open water
Sampling Parameters:	Hydrocarbons
Rationale for Station:	To monitor hydrocarbons entering Steeves Lake from tank farm Seepage.
Rationale for Status:	This location is south of where the known hydrocarbon concentration have been measured. No hydrocarbons were measured at this location for three years prior to discontinuation of sampling.

Surveillance Network Program (SNP) Station 1563-21 (inactive)

Description:	Interception trench between fuel tank farm and Steeves Lake
Location:	64°24.471'N 115°05.970'W
Sampling Frequency:	Once in the spring and once in the fall, or at periods of water collection
Sampling Parameters:	Hydrocarbons
Rationale for Station:	To monitor hydrocarbons moving through the overburden between the tank farm and Steeves Lake.
Rationale for Status:	Station destroyed during remediation of soil.

Surveillance Network Program (SNP) Station 1563-22 (inactive)

Description:	Minewater pumped from open pit
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Status:	No minewater is being pumped from the open pit.

Surveillance Network Program (SNP) Station 1563-23 (inactive)

Description:	East shore of Truck Lake near toe of embankment
Location:	64°24.172'N 115°06.004'W
Sampling Frequency:	Annually

Sampling Parameters:	Standard, Solids, Major Ions, Total Ammonia (NH ₃ + NH ₄ ⁺ - N), Nitrate, and Dissolved Metals
Rationale for Station:	To capture surface run-off and Seepage from waste rock dump and Zone 2.0 Pit.
Rationale for Status:	Concentrations of monitored contaminants have been consistently below EQCs and Water Quality Guidelines for Freshwater Aquatic Life for this location. Any input from Zone 2.0 Pit would be a small fraction of the total volume passing through this lake. Therefore, monitoring is no longer required.

Surveillance Network Program (SNP) Station 1563-24 (inactive)

Description:	Tailings Lake: one in mixed zone (above thermocline) and one in unmixed zone (below thermocline)
Location:	64°26.599' N 115°03.395' W
Sampling Frequency:	Four times a year including the approximate spring turnover, summer stratification, fall turnover, and winter stratification, if safe to do so.
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, In Situ Ecological, and Total Metals
Rationale for Station:	To determine the extent of cyanide natural degradation throughout the water column, the effects of chemical precipitation, the presence of thermoclines/chemoclines, and the fate of contaminants.
Rationale for Status:	Tailings Lake water quality is below effluent requirements and is only monitored at the outlet.

Surveillance Network Program (SNP) Station 1563-25 (inactive)

Description:	Supernatant Discharge to Pit
Location:	64°22.816' N 115°07.153' W
Sampling Frequency:	Weekly during transfer of supernatant.
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, Dissolved Metals
Rationale for Station:	To determine the quality of water transferred to the Zone 2.0 Pit and permit the estimation of total loading of contaminants.

Rationale for Status:	Supernatant is no longer Discharged to Zone 2.0 Pit.

Surveillance Network Program (SNP) Station 1563-27 (inactive)

Description:	Surface of Dyke Lake
Location:	64°23.228' N 115°06.198' W
Sampling Frequency:	Once a Year in August
Sampling Parameters:	Standard, Solids, Major Ions, Total Ammonia (NH ₃ + NH ₄ ⁺ - N), Nitrate, Dissolved Metals
Rationale for Station:	Although Dyke Lake rarely contains water, it can provide information regarding waste rock runoff.
Rationale for Status:	Results from this station have been very consistent and there has been no indication that run-off from the waste rock piles will be detrimental to the environment.

Surveillance Network Program (SNP) Station 1563-28 (inactive)

Description:	North end of Baton Lake near foot of the waste rock pile
Location:	N/A
Sampling Frequency:	N/A
Sampling Parameters:	N/A
Rationale for Status:	Historically, Licence limits have been met and results are similar to SNP 1563-30. The site infrastructure this station was used to monitor has been removed.

Surveillance Network Program (SNP) Station 1563-29 (inactive)

Description:	Baton Lake at mid lake: one sample in mixed zone (above thermocline) and one sample in unmixed zone (below thermocline)
Location:	64°23.665' N 115°04.883' W
Sampling Frequency:	Once a year in August.
Sampling Parameters:	Standards, Solids, Major Ions, Total Ammonia (NH ₃ + NH ₄ ⁺ - N), Nitrate, In Situ Ecological, Total Metals

Rationale for Station:	To ensure contaminated water from the Zone 2.0 Pit is not reaching Baton Lake, by comparing background with detectable change; and to detect/monitor waste rock runoff.
Rationale for Status:	Based on relatively low volume of input from Zone 2.0 Pit, the marginal concentrations of contaminants in Zone 2.0 Pit, the untraceable sub-surface route of Discharge from Zone 2.0 Pit to Baton Lake and the massive volume of water diluting Pit effluent, it would not be analytically possible to detect the effects of effluent from Zone 2.0 Pit on Baton Lake. Therefore, monitoring is no longer required.

Surveillance Network Program (SNP) Station 1563-30 (inactive)

Description:	Spot Lake
Location:	64°24.279' N 115°05.513' W
Sampling Frequency:	Quarterly
Sampling Parameters:	Standard, Solids, Major Ions, Total Ammonia (NH ₃ + NH ₄ ⁺ - N), Nitrate, Dissolved Metals
Rationale for Station:	To detect Zone 2.0 Pit tailings water migration; and/or detect/monitor waste rock runoff.
Rationale for Status:	Little evidence of either acid rock drainage or Seepage from Zone 2.0 Pit. Impacts would be detected at SNP 1563-4. The site infrastructure this station was used to monitor has been removed.

Surveillance Network Program (SNP) Station 1563-31 (inactive)

Description:	Inflow to Paddle Lake
Location:	64°26.365' N 115°01.698' W
Sampling Frequency:	Quarterly during periods of open water & twice during the winter
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, Total Metals
Rationale for Station:	To monitor Dam 1 Seepage effects on the Indin River system.
Rationale for Status:	Removal of Station #31 does not reduce the ability to detect adverse impacts from drainage occurring from Tailings Lake.

Surveillance Network Program (SNP) Station 1563-32 (inactive)

Description:	Surface of Lake 315
Location:	64°25.242' N 115°00.770' W
Sampling Frequency:	Once a year in August
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide 1 and Total Metals
Rationale for Station:	To determine final water quality before reaching the Indin River system & to assess impacts.
Rationale for Status:	All parameters of concern concentrations for 2013 were similar in value to those from the previous 5 years, falling below CCME FAL guidelines with the majority of the concentrations either near or below analytical laboratory detection limits.

Surveillance Network Program (SNP) Station 1563-33 (inactive)

Description:	Spanner Lake, upstream of the Tailings Containment Area
Location:	64°27.796' N 115°03.374' W
Sampling Frequency:	Once a year in August.
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide 1, Total Metals
Rationale for Station:	To monitor as a control to provide background quality of water entering the Indin River system for water quality comparison.
Rationale for Status:	Water samples have been collected for over 15 years of reference data. The value of the data would not be improved by continuing to monitor this location. Therefore, monitoring is no longer required.

Surveillance Network Program (SNP) Station 1563-34 (inactive)

Description:	A natural depression immediately u/s of the North Pond, or at approximate inflow into North Pond
Location:	Coordinates TBD
Sampling Frequency:	Weekly during spring freshet only
Sampling Parameters:	Standard, Solids, Total Ammonia (NH ₃ + NH ₄ ⁺ - N)
Rationale for Station:	To monitor the water quality Discharged from the Tailings Lake North diversion ditch.

Rationale for Status:	As a result of discontinued dewatering at Fuscum Lake, diversion systems from the Tailings Lake North diversion ditch is no longer required.
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Surveillance Network Program (SNP) Station 1563-35 (inactive)

Description:	Heart Lake Discharge at the inlet to Whaletail Bay.
Location:	64°25.467' N 115°05.761' W
Sampling Frequency:	Quarterly.
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients and Total Metals.
Rational for Station:	To determine the final water quality entering Steeves Lake from Fuscum Lake.
Rationale for Status:	Discharge from Fuscum Lake has been discontinued and monitoring is no longer necessary.

Surveillance Network Program (SNP) Station 1563-36 (inactive)

Description:	Indin River East of Colomac above the confluence of the outflow from Lake 315.
Location:	64°27.339' N 115°58.155' W
Sampling frequency:	Once a year in August
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide 1, and Total Metals
Rationale for Station:	To provide additional background knowledge of water quality in the Indin River and determine downstream effects.
Rationale for Status:	All concentrations were below laboratory detection limits and the CCME FAL guideline limit and have been consistent since 2008.

Surveillance Network Program (SNP) Station 1563-37 (inactive)

Description:	Indin Lake approximately 3 km south of Leta Arm
Location:	64°13.910' N 115°13.459' W
Sampling Frequency:	Once a year in August.

Sampling Parameters:	Standard, Solids, Major Ions, Nutrients and Total Metals
Rationale for Station:	To provide additional background knowledge of water quality in the Indin River and determine downstream effects.
Rationale for Status:	All concentrations for total metals were below CCME FAL guideline limits. Total cyanide concentrations were below laboratory detection limits and the CCME FAL guideline limit. These trends have been consistent since 2008.

Surveillance Network Program (SNP) Station 1563-38 (inactive)

Description:	North end of 'Dragon Lake', which is located between Baton Lake and Lake 315
Location:	6425.557' N 11502.572' W
Sampling Frequency:	Once a year (spring)
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide 1, and Total Metals
Rationale for Station:	To detect major Seepage from Tailings Lake and/or Spruce Lake porewater into another watershed.
Rationale for Status:	Lack of evidence for Seepage from Tailings Lake or Spruce Lake and is unlikely to occur in the future.

Surveillance Network Program (SNP) Station 1563-40 (inactive)

Description:	L-shaped Lake, immediately after wetlands Discharge
Location:	64°27.474' N 115°02.146' W
Sampling Frequency:	Monthly, during periods of Discharge
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, Total Metals
Rationale for Station:	To monitor reactions within the mixing zone.
Rationale for Status:	Access to location is a health and safety concern and parameters of concern were below CCME FAL guideline limits.

Surveillance Network Program (SNP) Station 1563-41 (inactive)

Description:	Outlet of L-shaped Lake
Location:	Coordinates TBD
Sampling Frequency:	Monthly, during periods of Discharge
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, Total Metals
Rationale for Status:	Previous Point of Compliance. Access to Station #41 is a health and safety concern and it is determined that Station #39 is an acceptable up-gradient Point of Compliance replacement for Station #41.

Surveillance Network Program (SNP) Station 1563-42 (inactive)

Description:	Steeves Lake surface, outside of former boom area; a minimum of three locations (1563-42south, 1563-42 central, 1563-42north)
Location:	Steeves Lake
Sampling Frequency:	Monthly during periods of open water
Sampling Parameters:	Standard, Hydrocarbons
Rationale for Station:	To monitor for the presence of potential hydrocarbons within Steeves Lake adjacent to the former Fuel Tank Farm.
Rational for Status:	Sampling has consistently returned hydrocarbon concentrations below quantifiable limits. Sentinel wells along the shoreline will continue to monitor hydrocarbon loading into Steeves Lake. Therefore, monitoring is no longer required at this station.

Surveillance Network Program (SNP) Station 1563-43 (inactive)

Description:	Tailings Lake North; one sample in mixed zone (above thermocline); one sample in unmixed zone (below thermocline)
Location:	Coordinates TBD
Sampling Frequency:	Four times a year including the approximate spring turnover, summer stratification, fall turnover, and winter stratification, if safe to do so
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, In Situ Ecological, and Total Metals

Rationale for Station:	To determine the extent of cyanide natural degradation throughout the water column, the effects of chemical precipitation, the presence of thermoclines/chemoclines, and the fate of contaminants.
Rationale for Status:	Tailings Lake water quality is below effluent requirements and is only monitored at the outlet.

Surveillance Network Program (SNP) Station 1563-44 (inactive)

Description:	Outfall of Dyke 7 spillway into Tailings Lake
Location:	Coordinates TBD
Sampling Frequency:	Monthly during periods of open water
Sampling Parameters:	Standard, Solids, Major Ions, Nutrients, Cyanide Suite, and Dissolved Metals
Rationale for Station:	To monitor for the water quality from Spruce Lake entering Tailings Lake via the Dyke.
Rationale for Status:	Discharge limit exceedances for cyanide at this location have corresponded to exceedances at Tailings Lake Discharge (Station #39), indicating that attenuation of the cyanide is effectively occurring in Tailings Lake.

Surveillance Network Program (SNP) 1563-45 at diversion ditch outflow to Duck Pond (inactive)

Description:	A natural depression immediately upstream of the Duck Pond, or at approximate inflow into North Pond
Location:	Coordinates TBD
Sampling Frequency:	Weekly during spring freshet only
Sampling Parameters:	Standard, Solids, Total Ammonia (NH ₃ + NH ₄ ⁺ - N)
Rationale for Station:	To monitor the water quality Discharged from the Tailings Lake North diversion ditch.
Rationale for Status:	As a result of discontinued dewatering at Fuscum Lake, diversion systems from the Tailings Lake North diversion ditch is no longer required.

Surveillance Network Program (SNP) 1563- 46, 47, 48 & 49 (inactive)

Description:	Lake samples from the former Zone 2.0 Pit Groundwater Monitoring Plan.
Location:	64°24.009'N, 115°06.344 W; 64°23.762'N, 115°06.514 W; 64°23.690'N, 115°06.601 W; 64°23.494'N, 115°06.815 W.
Sampling Frequency:	Quarterly
Sampling Parameters:	Standard, Solids, Major Ions, Total Ammonia (NH ₃ + NH ₄ ⁺ - N), Nitrate, Total Metals
Rationale for Station:	To monitor potential impacts of Zone 2.0 Pit water within Steeves Lake
Rationale for Status:	There has been no evidence that a connection exists between the Zone 2.0 Pit and Steeves Lake, after 15 years of monitoring. The water quality of Zone 2.0 Pit is very close to guidelines, so any contaminant of concern would be sufficiently diluted that it would not be detectable in Steeves Lake. Therefore, monitoring is no longer required.

Surveillance Network Program (SNP) 1563- 50, 51, 52 & 53 (inactive)

Description:	Groundwater samples from the Groundwater Monitoring Plan as per Part D, Condition 12 of MV2000L2-0018 includes "W1, W2, W3, W4" monitoring wells
Location:	Coordinates TBD
Sampling Frequency:	Quarterly
Sampling Parameters:	Standard, Solids, Major Ions, Total Ammonia (NH ₃ + NH ₄ ⁺ - N), Nitrate, Dissolved Metals
Rationale for Station:	To monitor the potential ingress of Zone 2.0 pit water prior to Steeves Lake.
Rationale for Status:	Groundwater wells remain frozen throughout the year and movement is minimal between Zone 2 Pit and Steeves Lake.