

Yellow highlights: Board staff seeking input

Green highlights: to be finalized by the Board

Land and Water Boards of the Mackenzie Valley



Standard Water Licence Conditions Template

Type A Water Licence MV2020L8-0012

Pine Point Mining Limited – Confirmation and Exploration Program

DRAFT

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Part A: Scope and Defined Terms

Scope:

1. This Licence entitles the Licensee to use Water and deposit Waste for miscellaneous activities at the Pine Point Confirmation and Exploration Program. **SCOPE**

The scope of this Licence includes the following:

- a) Withdrawal of Water for mineral exploration drilling, camp use, dust control, metallurgical testing, hydrogeological testing;
- b) Drawdown of surface Water pit lakes to nearby pit lakes for hydrogeological testing;
- c) Drawdown of Groundwater from one aquifer to the same aquifer or a nearby aquifer for hydrogeological testing;
- d) Depositing of Wastewater to Sewage Treatment Plant;
- e) Depositing of Waste Rock for bulk sampling;
- f) Construction, operation, and maintenance of temporary watercourse crossings;
- g) Use and storage of fuel;
- h) Use of heavy machinery and vehicles;
- i) Handling, use, and storage of explosives;
- j) Construction, operation, and maintenance of a camp;
- k) Construction, operation, and maintenance of trails, access roads, and haul roads; and
- l) Progressive Reclamation and associated Closure and Reclamation activities.

Commented [JH1]: PPML did not specify the type of temporary crossing. Board staff are seeking input on whether to include this in the scope.

2. The scope of this Licence is as described in the Preliminary Screening for Licence MV2020L8-0012, dated April 13, 2021. **SCOPE – PRELIMINARY SCREENING**
3. This Licence is issued subject to the conditions contained herein with respect to the use of Water and the deposit of Waste 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. Any change made to the *Waters Act* and/or the *Waters Regulations* that affects licence conditions and defined terms will be deemed to have amended this Licence. **LEGISLATION SUBJECT TO CHANGE**
4. Compliance with this Licence does not relieve the Licensee from responsibility for compliance with the requirements of any applicable federal, territorial, or municipal legislation. **LEGISLATIVE COMPLIANCE**

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Defined Terms:

Acid Rock Drainage – acidic Water, often with elevated sulphate concentrations, that occurs as a result of oxidation of sulphide minerals contained in rock or other materials that are exposed as a result of natural weathering processes, Construction, or Project activities.

Action Level – a predetermined qualitative or quantitative trigger which, if exceeded, requires the Licensee to take appropriate actions.

Analyst – an Analyst designated by the Minister under subsection 65(1) of the *Waters Act*.

Artesian Aquifer – a Water-bearing stratum which, when encountered during drilling operations, produces a pressurized flow of Groundwater that reaches an elevation above the Water table or above the ground surface.

Average Concentration – the arithmetic mean/discrete average of four consecutive analytical results, [or if less than four analytical results, the arithmetic mean/discrete average of the analytical results collected during a batch decant.] as submitted to the Board in accordance with the sampling and analysis requirements specified in the Surveillance Network Program.

Board – the Mackenzie Valley Land and Water Board established under subsection 99(1) of the *Mackenzie Valley Resource Management Act*.

Closure Cost Estimate - an estimate of the cost to close and reclaim the Project.

Closure and Reclamation – the process and activities that facilitate the return of areas affected by the Project to viable and, wherever practicable, self-sustaining ecosystems that are compatible with a healthy environment and human activities.

Closure and Reclamation Plan (CRP) – a document, developed in accordance with this Licence and the MVLWB/AANDC *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*, that clearly describes the Closure and Reclamation for the Project.

Component-Specific Closure and Reclamation Plan (Component-Specific CRP) – a document, developed in accordance with this Licence and the MVLWB/AANDC *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*, that clearly describes the Closure and Reclamation for a component of the Project.

Construction – any activities undertaken during any phase of the Project to construct or build any structures, facilities or components of, or associated with, the development of the Project.

Discharge – a direct or indirect deposit or release of any Water or Waste to the Receiving Environment.

Drawdown – the partial removal of water from an existing Watercourse, or portion thereof, by pumping.

Drilling Waste – Waste material specifically produced from drilling activity.

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Effluent – a Wastewater Discharge.

Effluent Quality Criteria (EQC) – numerical or narrative limits on the quality or quantity of the Waste deposited to the Receiving Environment.

Engagement Plan – a document, developed in accordance with the MVLWB *Engagement and Consultation Policy* and the *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*, that clearly describes how, when, and which engagement activities will occur with an affected party during the life of the Project.

Engineered Structure – any structure or facility related to Water Use or the deposit of Waste that is designed by a Professional Engineer, including but not limited to the Sewage Treatment Plant associated with the Project.

Greywater – all liquid Waste from showers, baths, sinks, kitchens, and domestic washing facilities, but does not include Toilet Waste.

Groundwater – as defined in section 1 of the Waters Regulations: all water in a zone of saturation below the land surface, regardless of its origin.

Hazardous Waste - a Waste which, because of its quantity, concentration, or characteristics, may be harmful to human health or the environment when improperly treated, stored, transported, or discharged.

Inspector – an Inspector designated by the Minister under subsection 65(1) of the *Waters Act*.

Licensee – the holder of this Licence.

Maximum Average Concentration – the concentration of a parameter that cannot be exceeded by the **running average of any four consecutive analytical results**.

Maximum Grab Concentration – the concentration of a parameter that cannot be exceeded in any one analytical result.

Metal Leaching – the release of metals and metalloids in leachate, Seepage, or drainage from rock or other materials associated with the Project.

Minewater – Groundwater, surface Water, or any Water that is pumped, seeps, or flows out of any underground mine working or open pit.

Minister – the Minister of the Government of the Northwest Territories (GNWT) – Environment and Natural Resources.

Ordinary High-Water Mark – the usual or average level to which a Watercourse rises at its highest point and remains for sufficient time so as to change the characteristics of the land. In flowing Watercourses (rivers, streams), this refers to an active channel/bank-full level, which is often the 1:2-year flood flow return level. In inland lakes, wetlands or marine environments, it refers to those parts of the Watercourse bed and banks that are frequently flooded by Water so as to leave a mark

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on the land and where the natural vegetation changes from predominantly aquatic vegetation to terrestrial vegetation (excepting Water tolerant species). For reservoirs, this refers to normal high operating levels (full supply level).

Professional Engineer – a person registered with the Northwest Territories and Nunavut Association of Professional Engineers and Geoscientists to practice as a Professional Engineer in the Northwest Territories as per the territorial *Engineering and Geoscience Professions Act* and whose professional field of specialization is appropriate to address the components of the Project at hand.

Progressive Reclamation – Closure and Reclamation activities conducted during the operating phase of the Project.

Project – the undertaking described in Part A, Conditions SCOPE and SCOPE – PRELIMINARY SCREENING.

Receiving Environment – the natural environment that, directly or indirectly, receives any deposit of Waste from the Project.

RECLAIM – the Government of the Northwest Territories' model for estimating Closure and Reclamation costs.

Reclamation Research – literature reviews, laboratory or pilot-scale tests, engineering studies, and other methods of resolving uncertainties and answering questions pertaining to environmental risks for the purpose of providing data and information that will reduce uncertainties for closure options, selected closure activities, and/or closure criteria.

Response Framework – a systematic approach to responding to the results of a monitoring program through adaptive management actions.

Runoff – the overland flow of Water or Wastewater that occurs when precipitation, meltwater, or other Water is not absorbed by the land.

Seepage – any Water or Waste that drains, passes through, or escapes from any structure designed to contain, withhold, divert, or retain Water or Waste.

Sewage – all Toilet Wastes and Greywater.

Sewage Treatment Plant – the area(s) and structures designated to contain and treat Sewage.

Spill Contingency Plan (SCP) – a document developed for the Project in accordance with INAC's *Guidelines for Spill Contingency Planning*.

Sump – a human-made excavation or a natural depression designated for depositing Water and/or Waste.

Surveillance Network Program (SNP) – a monitoring program required by this Licence and detailed in Annex A.

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Toilet Wastes – all human excreta and associated products, not including Greywater.

Traditional Knowledge – the cumulative, collective body of knowledge, experience and values built up by a group of people through generations of living in close contact with nature. It builds upon the historic experiences of a people and adapts to social, economic, environmental, spiritual, and political change.

Unauthorized Discharge – a Discharge of any Water or Waste not authorized under this Licence

Waste – as defined in section 1 of the *Waters Act*:

- a) a substance that, if added to water, would degrade or alter or form part of a process of degradation or alteration of the quality of the water to an extent that is detrimental to its use by people or by an animal, fish or plant or
- b) water that contains a substance in such a quantity or concentration, or that has been so treated, processed or changed, by heat or other means, that it would, if added to other water, degrade or alter or form part of a process of degradation or alteration of the quality of that water to the extent described in paragraph (a),

and includes

- c) a substance or water that, for the purposes of the *Canada Water Act*, is deemed to be waste,
- d) a substance or class of substances prescribed by regulations made under subparagraph 63(1)(b)(i),
- e) water that contains a substance or class of substances in a quantity or concentration that is equal to or greater than a quantity or concentration prescribed in respect of that substance or class of substances by regulations made under subparagraph 63(1)(b)(ii), and
- f) water that has been subjected to a treatment, process or change prescribed by regulations made under subparagraph 63(1)(b)(iii).

Waste Disposal Facilities – the area(s) and structures designated for the disposal of Waste, including, but not limited to, the Sewage Treatment Plant.

Waste Management Plan (WMP) – a document, developed in accordance with the MVLWB *Guidelines for Developing a Waste Management Plan*, that describes the methods of Waste management for the Project from Waste generation to final disposal.

Waste Rock – all rock materials, except ore, which are produced as a result of exploration activities.

Wastewater – any Water that is generated by Project activities or originates on-site, and which contains Waste, and may include, but is not limited to, Runoff, Seepage, Sewage, Minewater, and Effluent.

Water – as defined in section 1 of the *Waters Act*: water under the administration and control of the Commissioner, whether in a liquid or frozen state, on or below the surface of land.

Watercourse – as defined in section 1 of the *Waters Regulations*: a natural watercourse, body of Water or Water supply, whether usually containing Water or not, and includes Groundwater, springs, swamps, and gulches.

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Water Management Area – a geographical area of the Northwest Territories established by section 2 and Schedule A of the Waters Regulations.

Waters Regulations – the regulations proclaimed pursuant to section 63 of the *Waters Act*.

Water Supply Facilities – the area(s) and structures designed to collect and supply Water for the Project.

Water Use – as defined in section 1 of the *Waters Act*: a direct or indirect use of any kind, including, but not limited to,

- a) a diversion or obstruction of waters,
- b) an alteration of the flow of waters, and
- c) an alteration of the bed or banks of a river, stream, lake or other body of water, whether or not the body of water is seasonal, but does not include a use connected with shipping activities that are governed by the *Canada Shipping Act, 2001*.

Water Use Fee – the fee for use of Water as per the Waters Regulations pursuant to section 63 of the *Waters Act* and the MVLWB *Water Use Fee Policy*.

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Part B: General Conditions

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| 1. | The Licensee shall ensure a copy of this Licence is maintained on site at all times. | COPY OF LICENCE |
| 2. | The Licensee shall take every reasonable precaution to protect the environment. | PRECAUTION TO PROTECT ENVIRONMENT |
| 3. | In conducting its activities under this Licence, the Licensee shall make every reasonable effort to consider and incorporate any scientific information and Traditional Knowledge that is made available to the Licensee. | INCORPORATE SCIENTIFIC INFORMATION AND TRADITIONAL KNOWLEDGE |
| 4. | 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. | IDENTIFY TRADITIONAL KNOWLEDGE |
| 5. | All references to policies, guidelines, codes of practice, statutes, regulations, or other authorities shall be read as a reference to the most recent versions, unless otherwise noted. | REFERENCES |
| 6. | The Licensee shall ensure all submissions to the Board:
a) Are in accordance with the MVLWB <i>Document Submission Standards</i> ;
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. | SUBMISSION FORMAT AND CONFORMITY |
| 7. | The Licensee shall ensure management plans are submitted to the Board in a format consistent with the MVLWB <i>Standard Outline for Management Plans</i> , unless otherwise specified. | MANAGEMENT PLAN FORMAT |
| 8. | The Licensee shall comply with all plans and programs, including revisions, approved pursuant to the conditions of this Licence. | COMPLY WITH SUBMISSIONS AND REVISIONS |
| 9. | The Licensee shall conduct an annual review of all plans and programs and make any revisions necessary to reflect changes in operations, contact information, or other details. No later than March 31 each year, the Licensee shall send a notification letter to the Board, listing the documents that have been reviewed and do not require revisions. | ANNUAL REVIEW |
| 10. | The Licensee may propose changes at any time by submitting revised plans and programs to the Board, for approval, a minimum of 90 days prior to the proposed implementation date for the changes. The Licensee shall not implement the changes until approved by the Board. | REVISIONS |

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| 11. | The Licensee shall revise any submission and submit it as per the Board’s directive. | REVISE AND SUBMIT |
| 12. | If any date for any submission falls on a weekend or holiday, the Licensee may submit the item on the following business day. | SUBMISSION DATE |
| 13. | The Licensee shall comply with the Schedules , which are annexed to and form part of this Licence, and any updates to the Schedules as may be made by the Board. | COMPLY WITH SCHEDULE(S) |
| 14. | The Licensee shall comply with the Surveillance Network Program , which is annexed to and forms part of this Licence, and any updates to the Surveillance Network Program as may be made by the Board. | COMPLY WITH SURVEILLANCE NETWORK PROGRAM |
| 15. | The Schedules, the Surveillance Network Program, and any compliance dates specified in this Licence may be updated at the discretion of the Board. | UPDATES TO COMPLIANCE DATE(S) |
| 16. | The Licensee shall comply with all directives issued by the Board in respect of the implementation of the conditions of this Licence. | COMPLY WITH BOARD DIRECTIVES |
| 17. | The Licensee shall ensure signs are posted for all active Surveillance Network Program stations. All sign(s) shall be located and maintained to the satisfaction of an Inspector. | POST SURVEILLANCE NETWORK PROGRAM SIGN(S) |
| 18. | The Licensee shall install, operate, and maintain meters, devices, or other such methods for measuring the volumes of Water used and Waste discharged to the satisfaction of an Inspector. | MEASURE WATER USE AND WASTE DISCHARGED |
| 19. | Beginning March 31, 2022, and no later than every March 31 thereafter, the Licensee shall submit an Annual Water Licence Report to the Board and an Inspector. The Report shall be in accordance with the requirements of Schedule 1, Condition 1. | ANNUAL WATER LICENCE REPORT |
| 20. | The Licensee shall comply with the Engagement Plan , once approved. | ENGAGEMENT PLAN |
| 21. | Within 90 days following the effective date of this Licence, the Licensee shall submit to the Board, for approval, a revised Engagement Plan. The Licensee shall not commence Project activities prior to Board approval of the Plan. | ENGAGEMENT PLAN – REVISED |
| 22. | A minimum of ten days prior to the initial commencement of Project activities, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the commencement date, and the name and contact information for the individual responsible for overseeing the Project. Written notification shall be provided to the Board and an Inspector if any changes occur. | NOTIFICATION – COMMENCEMENT |
| 23. | A minimum of ten days prior to re-commencement of Project activities following a temporary shut-down period, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the commencement date, and the name and contact information for the individual responsible for | NOTIFICATION – RE-COMMENCEMENT |

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overseeing the Project. Written notification shall be provided to the Board and an Inspector if any changes occur.

24. The Licensee shall immediately provide written notification to the Board and an Inspector of any non-compliance with the conditions of this Licence.
25. 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.
26. The Licensee shall ensure that a copy of any written authorization issued to the Licensee by an Inspector is provided to the Board.
27. The Licensee shall submit a current Project schedule to the Board and an Inspector upon request.

NOTIFICATION – NON-COMPLIANCE WITH CONDITIONS

NOTIFICATION – NON-COMPLIANCE WITH DIRECTIVES

COPY – WRITTEN AUTHORIZATION

SUBMIT CURRENT PROJECT SCHEDULE

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Part C: Security

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| 1. | The Licensee shall post and maintain a security deposit with the Minister in accordance with Schedule 2. The Licensee shall not commence Project activities until the security deposit has been accepted by the Minister. | POST SECURITY DEPOSIT |
| 2. | Upon request of the Board, the Licensee shall submit an updated Closure Cost Estimate using the current version of RECLAIM or another method acceptable to the Board. | UPDATE CLOSURE COST ESTIMATE |
| 3. | The amount of the security deposit required by Part C, Condition POST SECURITY DEPOSIT may be adjusted by the Board:
a) Based on an updated Closure Cost Estimate as per Part C, Condition UPDATE CLOSURE COST ESTIMATE; or
b) Based on such other information as may become available to the Board. | ADJUSTED SECURITY AMOUNT |
| 4. | If the amount of the security deposit is adjusted by the Board as per Part C, Condition ADJUSTED SECURITY AMOUNT, the Licensee shall post the adjusted amount with the Minister within the timeframe set by the Board. The Licensee shall not commence any new activities associated with a security adjustment until the additional security deposit has been accepted by the Minister. | POST ADJUSTED SECURITY AMOUNT |
| 5. | Unless otherwise approved by the Board, the Licensee may not submit security adjustment requests except with any of the following submissions:
a) Closure and Reclamation Plans;
b) Closure and Reclamation Completion Reports; or
c) Performance Assessment Reports. | SECURITY ADJUSTMENT REQUESTS |

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Part D: Water Use

1. The Licensee shall comply with the **Water Withdrawal Plan**, once approved.
2. Within 90 days following the effective date of this Licence, the Licensee shall submit to the Board, for approval, a revised **Water Withdrawal Plan**. The Licensee shall not commence Project activities prior to Board approval of the Plan.
3. The Licensee shall only obtain Water for the Project from the Tables in the approved **Water Withdrawal Plan**. The Licensee may withdraw up to the Maximum Quantity as set out in the following table.

WATER WITHDRAWAL PLAN

REVISED WATER WITHDRAWAL PLAN

WATER SOURCE AND MAXIMUM VOLUME

Water Sources or Table Referenced in the Approved Water Withdrawal Plan	Purpose of Water Use	Maximum Quantity (m ³ per day)
Tables 1, 2, 3, and 4	Drilling, dust suppression, and Metallurgical sampling	324
Great Slave Lake	Camp Use	56
Tables 1, 2, and Sulphur Point and Pine Point Formation Aquifers	Hydrogeological Testing	15,000

4. In any single ice-covered season, the Licensee shall not withdraw greater than the annual withdrawal limit identified in the approved **Water Withdrawal Plan**.
5. The Licensee shall only withdraw Water using the Water Supply Facilities, unless otherwise authorized temporarily in writing by an Inspector.
6. Prior to withdrawing Water from an approved Water source, the Licensee shall post sign(s) to identify the intake for the Water Supply Facilities. All sign(s) shall be located and maintained to the satisfaction of an Inspector.
7. The Licensee shall construct and maintain the Water intake(s) with a screen designed to prevent impingement or entrapment of fish.
8. Prior to locating a Water intake in a fish-bearing Watercourse, the Licensee shall obtain written authorization for the location from an Inspector.
9. Prior to withdrawing Water from Water sources in Tables 2 and 4 of the approved **Water Withdrawal Plan**, and within 500 m of Water sources

MAXIMUM UNDER-ICE WATER WITHDRAWAL VOLUME

WATER WITHDRAWAL – FACILITIES

POST WATER INTAKE SIGN(S)

WATER INTAKE SCREEN

WATER INTAKE LOCATION – AUTHORIZATION

FIELD CONFIRMATION – AUTHORIZATION

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identified in Tables 2 and 4 of the approved **Water Withdrawal Plan**, the Licensee shall:

- a) Complete field confirmation in accordance with the Board's *Method for Determining Winter Water Source Capacity for Small-Scale Development*; and
- b) Obtain written authorization from an Inspector.

10. Each year, prior to the **enter Licence effective date** and in advance of any Water use, the Licensee shall pay the Water Use Fee in accordance with the *MVLWB Water Use Fee Policy*.

WATER USE FEE

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Part E: Construction

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| 1. | The Licensee shall ensure that all structures intended to contain, withhold, divert, or retain Water or Waste are designed, constructed, and maintained to minimize the escape of Waste to the Receiving Environment. | OBJECTIVE –
CONSTRUCTION |
| 2. | 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. | ENGINEERED STRUCTURES
– GENERAL |
| 3. | The Licensee shall only use material that is clean and free of contaminants and is from a source that has been authorized in writing by an Inspector. | CONSTRUCTION MATERIAL
– SOURCE(S) |
| 4. | The Licensee shall maintain records of Construction materials for all structures and make them available at the request of the Board or an Inspector. | CONSTRUCTION RECORDS |
| 5. | Unless otherwise authorized in writing by an Inspector, a minimum of 90 days prior to the commencement of Construction of all structures, excluding Engineered Structures, intended to contain, withhold, divert, or retain Water or Wastes, the Licensee shall submit to the Board, for approval, a Structure Description and Construction Plan . The Plan shall be in accordance with the requirements of Schedule 3, Condition 1. The Licensee shall not commence Construction of the structure(s) prior to Board approval of the Plan. | STRUCTURE DESCRIPTION
AND CONSTRUCTION PLAN |
| 6. | A minimum of 90 days prior to the commencement of Construction of any Engineered Structures not referred to in Part E, Condition DESIGN AND CONSTRUCTION PLAN – SEWAGE TREATMENT PLANT, the Licensee shall submit to the Board, for approval, a Design and Construction Plan . The Plan shall be in accordance with the requirements of Schedule 3, Condition 2. The Licensee shall not commence Construction of the Engineered Structure(s) prior to Board approval of the Plan. | DESIGN AND
CONSTRUCTION PLAN |
| 7. | A minimum of 90 days prior to the commencement of Construction of any Engineered Structures not referred to in Part E, Condition DESIGN AND CONSTRUCTION PLAN – SEWAGE TREATMENT PLANT, the Licensee shall submit to the Board, Design Drawings stamped and signed by a Professional Engineer. A minimum of 90 days prior to implementing any proposed changes to the Design Drawings, the Licensee shall submit revised Design Drawings to the Board. | DESIGN DRAWINGS |
| 8. | A minimum of 90 days prior to the commencement of Construction of the Sewage Treatment Plant, the Licensee shall submit to the Board, for approval, a Design and Construction Plan . The Plan shall be in accordance with the requirements of Schedule 3, Condition 2. The Licensee shall not | DESIGN AND
CONSTRUCTION PLAN –
SEWAGE TREATMENT
PLANT |

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commence Construction of the Engineered Structure prior to Board approval of the Plan.

9. A minimum of 90 days prior to the commencement of Construction of a Sewage Treatment Plant, the Licensee shall submit to the Board, **Design Drawings** stamped and signed by a Professional Engineer. A minimum of 90 days prior to implementing any proposed changes to the Design Drawings, the Licensee shall submit revised Design Drawings to the Board.
10. A minimum of ten days prior to the commencement of Construction of any Engineered Structure(s), the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the Construction commencement date, and the name and contact information for the individual responsible for overseeing Construction. Written notification shall be provided to the Board and an Inspector if any changes occur.
11. A minimum of ten days prior to the commencement of Construction of any structure(s) intended to contain, withhold, divert, or retain Water or Wastes, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the Construction commencement date, and the name and contact information for the individual responsible for overseeing the Construction. Written notification shall be provided to the Board and an Inspector if any changes occur.
12. The Licensee shall ensure that all structures intended to contain, withhold, divert, or retain Water or Wastes, excluding Engineered Structures, are constructed in accordance with the approved **Structure Description and Construction Plan(s)**.
13. The Licensee shall ensure that all Engineered Structures are constructed in accordance with the **Design Drawings** and approved **Design and Construction Plans**.
14. Within 90 days of the completion of the Construction of each Engineered Structure, the Licensee shall submit to the Board, an **As-Built Report** stamped and signed by a Professional Engineer, which shall include, but not be limited to, the following information:
 - a) final as-built drawings of the Engineered Structure(s), stamped and signed by a Professional Engineer;
 - b) documentation, with rationale, of field decisions that deviate from the **Design and Construction Plans** and **Design Drawings**; and
 - c) any data used to support these decisions.

**DESIGN DRAWINGS –
SEWAGE TREATMENT
PLANT**

**NOTIFICATION –
CONSTRUCTION –
ENGINEERED STRUCTURES**

**NOTIFICATION –
CONSTRUCTION**

**CONSTRUCT AS DESIGNED
– STRUCTURE(S)**

**CONSTRUCT AS DESIGNED
– ENGINEERED
STRUCTURE(S)**

**AS-BUILT REPORT –
ENGINEERED
STRUCTURE(S)**

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Part F: Waste and Water Management

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| 1. | The Licensee shall manage Waste and Water with the objective of minimizing the impacts of the Project on the quantity and quality of Water in the Receiving Environment through the use of appropriate mitigation measures, monitoring, and follow-up actions. | OBJECTIVE – WASTE AND WATER MANAGEMENT |
| 2. | The Licensee shall minimize erosion by implementing suitable erosion control measures that shall be located and maintained to the satisfaction of an Inspector. | EROSION CONTROL |
| Management and Monitoring Plans | | |
| 3. | The Licensee shall comply with the Waste Management Plan , once approved. The Plan shall be in accordance with the <i>MVLWB Guidelines for Developing a Waste Management Plan</i> . | WASTE MANAGEMENT PLAN |
| 4. | Within 30 days following the effective date of this Licence, the Licensee shall submit to the Board, for approval, a revised Waste Management Plan . The Plan shall be in accordance with the requirements of <i>MVLWB Guidelines for Developing a Waste Management Plan</i> . The Licensee shall not commence Project activities prior to Board approval of the Plan. | WASTE MANAGEMENT PLAN – REVISED |
| 5. | The Licensee shall comply with the Water Management Plan , once approved. The Plan shall be in accordance with the requirements of Schedule 4, Condition 1. | WATER MANAGEMENT PLAN |
| 6. | Within 90 days following the effective date of this Licence , the Licensee shall submit to the Board, for approval, a revised Water Management Plan . The Plan shall be in accordance with the requirements of Schedule 4, Condition 1. The Licensee shall not commence activities described in the Plan prior to Board approval of the Plan. | WATER MANAGEMENT PLAN – REVISED |
| 7. | The Licensee shall comply with the Bedrock Sampling Management Plan , once approved. The Plan shall be in accordance with the requirements of Schedule 4, Condition 2. | BEDROCK SAMPLING MANAGEMENT PLAN |
| 8. | A minimum of 90 days prior to commencement of activities, the Licensee shall submit to the Board, for approval, a revised Bedrock Sampling Management Plan . The Plan shall be in accordance with the requirements of Schedule 4, Condition 2. The Licensee shall not commence activities described in the Plan prior to Board approval of the Plan. | BEDROCK SAMPLING MANAGEMENT PLAN – REVISED |
| Operation of Structures and Facilities | | |
| 9. | The Licensee shall construct, operate, and maintain the Sewage Treatment Plant to the design specifications and engineering standards, such that: | SEWAGE TREATMENT PLANT |

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Green highlights: to be finalized by the Board

- a) The specifications described in the Sewage Treatment **Design and Construction Plan**, referred to in Part E, Condition DESIGN AND CONSTRUCTION PLAN – SEWAGE TREATMENT PLANT are maintained at all times;
- b) Any Effluent from the facility to the Receiving Environment that does not meet Effluent Quality Criteria, as specified in Part F, Condition EFFLUENT QUALITY CRITERIA shall be collected and returned to the Sewage Treatment Plant;
- c) Any deterioration or erosion of constructed structures/facilities shall be reported immediately to an Inspector;
- d) Any deterioration or erosion of constructed structures/facilities that requires repair shall be reported to an Inspector and the Board, and repaired immediately;
- e) Monitoring of the facility is sufficient to ensure that:
 - i. Performance design criteria, as described in the **Design and Construction Plan**, referred to in Part E, Condition DESIGN AND CONSTRUCTION PLAN – SEWAGE TREATMENT PLANT are being met; and
 - ii. Necessary changes in operation of the facility, including any additional mitigations, are identified.

10. The Licensee shall operate and maintain the Sewage Treatment Plant to prevent structural failure and to the satisfaction of an Inspector.

PREVENT STRUCTURAL FAILURE

Inspection of Structures and Facilities

11. The Licensee shall conduct [enter frequency] inspections of the Sewage Treatment Plant or as otherwise directed by an Inspector or the Board. Records of these inspections shall be made available to the Board or an Inspector upon request.

[FREQUENCY] INSPECTION OF SEWAGE TREATMENT PLANT

Commented [JH2]: Board staff seeking input on the frequency of inspection.

12. The Licensee shall conduct daily erosion inspections of Discharge locations, with the exception of [enter Discharge location(s)], during periods of Discharge, or more frequently as directed by an Inspector. Records of these inspections shall be made available to the Board or an Inspector upon request.

DAILY INSPECTIONS OF DISCHARGE LOCATIONS

Discharge and Disposal Locations and Rates

13. The Licensee shall deposit all Waste as described in the approved **Waste Management Plan**.

ALL WASTE – WASTE MANAGEMENT PLAN

14. The Licensee shall discharge all Effluent from the Sewage Treatment Plant as described in the approved Sewage Treatment Plant Design and Construction Plan referred to in Part E, Condition DESIGN AND CONSTRUCTION PLAN – SEWAGE TREATMENT PLANT.

EFFLUENT DISCHARGE – SEWAGE TREATMENT PLANT

Yellow highlights: Board staff seeking input
 Green highlights: to be finalized by the Board

- 15. A minimum of ten days prior to depositing any Waste into a licenced municipal facility, the Licensee shall provide written notification to the Board and an Inspector.
- 16. The Licensee shall not discharge Waste, including Wastewater, to any Watercourse, or to the ground surface within 100 metres of the Ordinary High-Water Mark of any Watercourse.

NOTIFICATION – WASTE DEPOSIT

DISCHARGE LOCATION – ORDINARY HIGH-WATER MARK

Effluent Quality Criteria

- 17. The Licensee shall ensure that Sewage Effluent from Sewage Treatment Plant at Surveillance Network Program station 1 has a pH value between **x** and **y** and meets the following Effluent Quality Criteria (EQC):

EFFLUENT QUALITY CRITERIA

Parameter	EQC		
	mg/L		mg
	Maximum Average Concentration	Maximum Grab Concentration	Annual Loading Limit
	---	---	
	---	---	

- 18. The Licensee shall ensure that Discharge from the hydrogeological testing at Surveillance Network Program station 2 and 3 meets the compatibility criteria described in the approved **Water Management Plan**.
- 19. The Licensee shall ensure that Discharge to existing pits described in the approved **Water Management Plan** shall not be acutely toxic to aquatic life as determined at SNP station 2 by the test methods referenced in Part B of the Surveillance Network Program.
- 20. A minimum of **x** days prior to commencing or resuming hydrogeological testing, the Licensee shall submit Water quality data for the samples collected in accordance with the approved **Water Management Plan** to the Board and an Inspector. The Licensee shall not commence or resume the

COMPATIBILITY CRITERIA – WATER MANAGEMENT PLAN

TOXICITY – HYDROGEOLOGICAL TESTING

TESTING BEFORE DISCHARGE – HYDROGEOLOGICAL

TESTIN Commented [JH3]: Board staff are seeking input on the timeline for this condition.

Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

Hydrogeological testing until an Inspector has provided written authorization.

21. The Licensee shall submit Water quality data for samples collected from Surveillance Network Program station 4 (Sewage Treatment Plant)] to the Board and an Inspector as follows:
- a) A minimum of five days prior to commencing or resuming Discharge of Effluent to location identified in the approved Design and Construction Plan; and
 - b) A minimum of five days prior to commencing or resuming Discharge of Effluent to location identified in the approved Design and Construction Plan following an exceedance of the EQC specified in Part F, Condition EFFLUENT QUALITY CRITERIA (the table).

**TESTING BEFORE
DISCHARGE – SEWAGE
TREATMENT PLANT**

The Licensee shall not commence or resume the Discharge until the EQC are met and an Inspector has provided written authorization.

22. If Water quality data from any sample collected at Surveillance Network Program station 4 exceeds the EQC specified in Part F, Condition EFFLUENT QUALITY CRITERIA, the Licensee shall:
- a) Cease the Discharge;
 - b) Notify the Board and an Inspector immediately;
 - c) Report the spill immediately in accordance with the **Spill Contingency Plan** referred to in Part G, Condition SPILL CONTINGENCY PLAN;
 - d) Comply with the approved Spill Contingency Plan referred to in Part G, Condition SPILL CONTINGENCY PLAN; and
 - e) 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.

**EFFLUENT QUALITY
CRITERIA – EXCEEDANCE –
SEWAGE TREATMENT
PLANT**

Other

23. If an Artesian Aquifer is encountered and producing Water at the ground surface, the Licensee shall:
- a) Implement the Spill Contingency Plan;
 - b) Within 48 hours, notify the Board and an Inspector, in writing, including the flow rate in cubic metres;
 - c) Deposit Artesian Aquifer Water to a snow-bermed or self-contained area, unless otherwise authorized by an Inspector;
 - d) Collect a sample of no less than ten litres of Artesian Aquifer Water, provide five litres of the sample to an Inspector for analysis, analyze the remaining sample as set out for SNP station 1, and provide the analytical results to the Board and an Inspector;
 - e) Seal the borehole to permanently prevent any further outflow of water and to the satisfaction of an Inspector; and

REPORT ARTESIAN

AQUIFER

Commented [JH4]: Board staff are seeking input on whether SNP station is required for this condition. See Annex A for SNP requirements.

Yellow highlights: Board staff seeking input

Green highlights: to be finalized by the Board

- f) Within 24 hours following cessation of the flow of Artesian Aquifer Water, submit a detailed report of the event to the Board and an Inspector, including the total amount of Water in cubic metres that has been released, and the total amount of Water in cubic metres stored in the snow-bermed, or otherwise approved, storage area.

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Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

Part G: Spill Contingency Planning

- | | | |
|----|--|--|
| 1. | The Licensee shall ensure that Unauthorized Discharges associated with the Project do not enter any Waters. | OBJECTIVE – PREVENT
WASTE INTO WATER |
| 2. | The Licensee shall comply with the Spill Contingency Plan , once approved. | SPILL CONTINGENCY PLAN |
| 3. | Option 1:
Within 90 days [enter either: following the effective date of this Licence OR prior to the commencement of activities], the Licensee shall submit to the Board, for approval, a revised Spill Contingency Plan . The Licensee shall not commence Project activities prior to Board approval of the Plan.

OR
Option 2:
A minimum of 90 days prior to the commencement of [enter Project-specific activity], the Licensee shall submit to the Board, for approval, a revised Spill Contingency Plan . The Licensee shall not commence [enter Project-specific activity] prior to Board approval of the Plan. | SPILL CONTINGENCY PLAN
– REVISED |
| 4. | If a spill or an Unauthorized Discharge occurs or is foreseeable, the Licensee shall:

a) Implement the approved Spill Contingency Plan referred to in Part G, Condition SPILL CONTINGENCY PLAN;
b) Report it immediately using the NU-NT Spill Report Form by one of the following methods: <ul style="list-style-type: none">• Telephone: (867) 920-8130• Fax: (867) 873-6924• E-mail: spills@gov.nt.ca• Online: Spill Reporting and Tracking Database
c) Notify the Board and an Inspector immediately; and
d) Within 30 days of initially reporting the incident, or within a timeframe authorized by an Inspector, submit a detailed report to the Board and an Inspector, including descriptions of causes, response actions, and any changes to procedures to prevent similar occurrences in the future. Written notification shall be provided to the Board and an Inspector if any changes occur. | REPORT SPILLS |
| 5. | The Licensee shall ensure that spill prevention infrastructure and spill response equipment is in place prior to commencement of the Project. | SPILL PREVENTION AND
RESPONSE EQUIPMENT |
| 6. | The Licensee shall restore all areas affected by spills and Unauthorized Discharges to the satisfaction of an Inspector. | CLEAN UP SPILLS |

Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

7. The Licensee shall not establish any fuel storage facilities or refueling stations, or store chemicals or Wastes within 100 metres of the Ordinary High-Water Mark of any Watercourse.

**MATERIAL STORAGE –
ORDINARY HIGH-WATER
MARK**

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Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

Part H: Closure and Reclamation

- | | | |
|----|--|---|
| 1. | Within 24 months following the effective date of this Licence, the Licensee shall submit to the Board, for approval, a Closure and Reclamation Plan . | CLOSURE AND RECLAMATION PLAN |
| 2. | Every three years following the previous approval, or as directed by the Board, the Licensee shall submit to the Board, for approval, a revised Closure and Reclamation Plan . | CLOSURE AND RECLAMATION PLAN – REVISED |
| 3. | Three years prior to the expiry date of this Licence, or a minimum of two years prior to the end of operations, whichever occurs first, the Licensee shall submit to the Board, for approval, a final Closure and Reclamation Plan . | CLOSURE AND RECLAMATION PLAN – FINAL |
| 4. | The Licensee shall endeavor to carry out approved Progressive Reclamation as soon as is reasonably practicable. | PROGRESSIVE RECLAMATION |
| 5. | The Licensee shall not conduct Progressive Reclamation except as approved by the Board. | PROGRESSIVE RECLAMATION – CARRY OUT AS APPROVED |
| 6. | Beginning [enter date, including the year] and no later than every [enter date] thereafter, the Licensee shall provide written notification to the Board and an Inspector of any approved Progressive Reclamation that will be conducted in the upcoming year. Notification shall include the name and contact information for the individual responsible for overseeing the Progressive Reclamation. Written notification shall be provided to the Board and an Inspector if any changes occur. | PROGRESSIVE RECLAMATION – NOTIFICATION |
| 7. | Within 90 days of completing Closure and Reclamation of any specific component of the Project, the Licensee shall submit to the Board a Closure and Reclamation Completion Report . The Report shall be in accordance with the MVLWB/AANDC <i>Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories</i> . | CLOSURE AND RECLAMATION COMPLETION REPORT |
| 8. | Within X months of completing Closure and Reclamation of any specific component of the Project, the Licensee shall submit to the Board for approval, a Performance Assessment Report . The Report shall be in accordance with the MVLWB/AANDC <i>Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories</i> . The Licensee shall submit subsequent Reports as directed by the Board. | PERFORMANCE ASSESSMENT REPORT – COMPONENT-SPECIFIC |

Signed on behalf of the [Enter Name of BOARD]

[Enter NAME Chair], Chair

[Enter NAME of Witness], Witness

Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

Schedule 1: Annual Water Licence Report

1. The **Annual Water Licence Report** referred to in Part B, Condition ANNUAL WATER LICENCE REPORT of this Licence shall include, but not be limited to, the following information about activities conducted during the previous calendar year:
 - a) A brief summary of Project activities including, but not limited to **drill sites, roads, trails, boreholes, sumps, and any other** disturbances;
 - b) An updated Project schedule;
 - c) A summary of the calibration and status of the meters and devices referred to in Part B, Condition MEASURE WATER USE AND WASTE DISCHARGED of this Licence;
 - d) A summary of engagement activities conducted in accordance with the approved **Engagement Plan**, referred to in Part B, Condition ENGAGEMENT PLAN of this Licence;
 - e) A summary of how Traditional Knowledge was incorporated into decision making;
 - f) A summary of activities conducted in accordance with the approved **Water Withdrawal Plan**, referred to in Part D, Condition WATER WITHDRAWAL PLAN, including but not limited to:
 - i. The monthly and annual quantities in cubic metres of Water obtained from all sources referred to in Part D, Condition WATER SOURCE AND MAXIMUM VOLUME;
 - ii. The monthly and annual quantities of Water, in cubic metres, used for dust control;
 - iii. A summary of field confirmation completed as referred to in Part D, Condition FIELD CONFIRMATION – AUTHORIZATION; and
 - iv. A summary of approved updates or changes to the **Water Withdrawal Plan**;
 - g) A summary of Construction activities conducted in accordance with Part E of this Licence;
 - h) A summary of major maintenance activities conducted in accordance with this Licence;
 - i) A summary of activities conducted in accordance with the approved **Waste Management Plan**, referred to in Part F, Condition WASTE MANAGEMENT PLAN of this Licence, including, but not limited to:
 - i. A summary of approved updates or changes to the process or facilities required for the management of Waste;
 - ii. Monthly and annual quantities, in cubic metres, of Hazardous Waste discharged, by location;
 - iii. Monthly and annual quantities, in cubic metres, of solid Waste discharged, by location;
 - iv. Monthly and annual quantities of Greywater discharged, by location;
 - v. Monthly and annual quantities of ammonium nitrate vehicle wash Runoff, discharged, by location;
 - vi. Monthly and annual quantities of drilling cuttings discharged, by location;
 - vii. Monthly and annual quantities, in cubic metres, of treated Sewage from the Sewage Treatment Plant;
 - viii. Monthly and annual quantities, in cubic metres, of Sewage solids removed from the existing Sewage Treatment Plant identified by disposal location; and
 - ix. A map depicting the location of the Sumps, **including soil conditions and type of drilling** Waste.

Commented [JH5]: Recommended by KFN.

Commented [JH6]: Recommended by DKFN.

Yellow highlights: Board staff seeking input

Green highlights: to be finalized by the Board

- j) A summary of activities conducted in accordance with the approved **Water Management Plan**, referred to in Part F, Condition WATER MANAGEMENT PLAN of this Licence, including:
- i. A summary of hydrogeological testing locations including a map and geographic coordinates;
 - ii. A record of dates, duration, and flow rates of the Hydrogeological testing;
 - iii. Total Water Drawdown quantity, in cubic metres, identified by Drawdown location;
 - iv. Total Water discharged, in cubic metres, identified by Discharge location;
 - v. The Water quality data for samples collected for the Hydrogeological testing, identified by Drawdown and Discharge locations, including tabular summaries of all data and information generated and graphical summaries of parameters, in Excel format;
 - vi. The Water quality criteria compatibility test results for the Hydrogeological testing conducted;
 - vii. A summary and interpretation of monitoring results, including any Action Level exceedances; and
 - viii. A description of actions taken in response to any Action Level exceedances.
- k) A summary of activities conducted in accordance with the approved **Bedrock Sampling Management Plan** referred to in Part F, Condition BEDROCK SAMPLING MANAGEMENT PLAN of this Licence, including:
- i. A summary of approved updates or changes to the process or facilities required for the management of bedrock, ore, overburden, and till;
 - ii. Monthly and annual quantities, in cubic metres and tonnes, of each type of Waste Rock placed into bedrock sampling pits, including a map or diagram of the locations and types of Waste Rock deposited;
 - iii. The size, depth, and/or area of the bedrock sampling pit;
 - iv. Monthly and annual quantities by location of metallurgical samples collected under the Plan;
 - v. A summary of approved updates or changes to the types of explosives to be used or the facilities to be used for management and storage of explosives; and
 - vi. Monthly and annual quantities by location of explosives managed under the Plan.
- l) A summary of the results and any actions taken as a result of the following inspections:
- i. Inspections conducted to fulfill **Part E and Part F** of this Licence;
 - ii. Inspection conducted under the Part F, Condition INSPECTION OF SEWAGE TREATMENT PLANT; and
 - iii. Inspections conducted under the **Design and Construction Plan** required under Part E of this Licence.
- m) A summary of activities conducted in accordance with the approved **Spill Contingency Plan**, referred to in Part G, Condition SPILL CONTINGENCY PLAN of this Licence, including:
- i. A list and description for all Unauthorized Discharges, including the date, NWT spill number, volume, location, summary of the circumstances and follow-up actions taken, and status (i.e., open or closed), in accordance with the reporting requirements in Part G, Condition REPORT SPILLS of this Licence; and
 - ii. An outline of any spill training carried out.

Commented [JH7]: Recommended by GNWT.

Yellow highlights: Board staff seeking input

Green highlights: to be finalized by the Board

- n) A summary of activities conducted in accordance with the **Closure and Reclamation Plan**, referred to in Part H, Condition CLOSURE AND RECLAMATION PLAN of this Licence, including:
- i. Details of any Progressive Reclamation undertaken;
 - ii. A discussion on whether planning and implementation remains on schedule, and a summary of any new scheduling setbacks;
 - iii. A summary of Reclamation Research completed;
 - iv. A summary of engagement conducted regarding Closure and Reclamation;
 - v. A list of any factors that would increase or decrease the Closure Cost Estimate the next time the Estimate is updated; and
 - vi. **[enter a list of any specific information required]**.
- o) Tabular summaries of all data and information generated under the SNP annexed to this Licence and graphical summaries of parameters with EQC referred to in Part F, Condition EFFLUENT QUALITY CRITERIA, at the point of compliance (SNP Station 4), in Excel format.
- p) A list of any non-compliance(s) with the conditions of this Licence or any directive from the Board pursuant to the conditions of this Licence;
- q) A summary of actions taken to address concerns, non-conformances, or deficiencies in any reports filed by an Inspector; and
- r) Any other details requested by the Board by **[enter date]** of the year being reported.

Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

Schedule 2: Security

1. The amount of security referred to in Part C, Condition POST SECURITY DEPOSIT, shall total \$XX.

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Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

Schedule 3: Construction

1. The **Structure Description and Construction Plan** referred to in Part E, Condition STRUCTURE DESCRIPTION AND CONSTRUCTION PLAN shall include, but not be limited to, the following:
 - a) Information regarding the facilities:
 - i. A description of the facilities to be constructed, including the purpose of the facilities;
 - ii. The proposed location(s) of the facilities, with GPS coordinates and a map to scale;
 - iii. Relevant background information for the area beneath the footprint of the facilities, including the results of any investigations;
 - iv. Construction specifications and performance parameters;
 - v. A description of any operations and maintenance requirements associated with the facilities; and
 - vi. An explanation of why the facilities do not need to be designed by a Professional Engineer.
 - b) Information regarding the Construction of the facilities:
 - i. A Construction schedule, including sequencing information;
 - ii. A description of the materials required for Construction, including, but not limited to:
 - a. sources;
 - b. quantities;
 - c. physical characteristics; and
 - d. geochemical characteristics.
 - iii. A description of any potential effects on the Receiving Environment associated with Construction of the facilities; and
 - iv. A description of any mitigation measures that will be undertaken to minimize the potential impacts identified as per (b)(iii).
 - c) Information regarding monitoring during Construction, including:
 - i. A description of any monitoring that will be conducted to determine the potential impacts to the Receiving Environment and the effectiveness of the mitigation measures described as per (b)(iv), including, but not limited to:
 - a. locations;
 - b. parameters;
 - c. frequencies; and
 - d. rationale.
 - ii. Linkages to other monitoring programs required in this Licence.
 - d) A description of how monitoring will be evaluated and what actions may be taken in response to monitoring results.
2. The **Design and Construction Plans** referred to in Part E, Conditions DESIGN AND CONSTRUCTION PLAN and DESIGN AND CONSTRUCTION PLAN – SEWAGE TREATMENT PLANT shall include, but not be limited to, the following:
 - a) Information regarding the design of the facilities:
 - i. A description of the facilities to be constructed;
 - ii. The proposed location(s) of the facilities, with GPS coordinates and a map to scale;
 - iii. Relevant background information for the area beneath the footprint of the facilities, as deemed adequate by the Professional Engineer responsible for the design, including:
 - a. the results and data from geotechnical and geochemical investigations, hydrogeological investigations, and programs to characterize soil, rock, Groundwater, ground ice, and ground temperature conditions to the depth expected to be affected by the facilities; and
 - b. any other relevant information.

Yellow highlights: Board staff seeking input

Green highlights: to be finalized by the Board

- iv. A design alternatives analysis;
 - v. Design specifications and performance parameters;
 - vi. Stability analyses;
 - vii. A description of how the design has been optimized for Closure and Reclamation;
 - viii. A description of how climate change projections and considerations have been incorporated into the design;
 - ix. A description of any instrumentation that will be installed as part of the facilities, including locations and rationale; and
 - x. A description of any operations and maintenance requirements associated with the design of the facilities.
- b) Information regarding the Construction of the facilities:
- i. A Construction schedule, including sequencing information;
 - ii. A description of the materials required for Construction, including, but not limited to:
 - a. sources;
 - b. quantities;
 - c. physical characteristics; and
 - d. geochemical characteristics.
 - iii. A description of any potential effects on the Receiving Environment associated with Construction of the facilities; and
 - iv. A description of any mitigation measures that will be undertaken to minimize the potential impacts identified above.
- c) Information regarding monitoring during Construction and operation, including:
- i. A description of any monitoring that will be conducted to detect potential impacts to the Receiving Environment and evaluate the effectiveness of the mitigation measures described above, including, but not limited to:
 - a. locations;
 - b. parameters;
 - c. frequencies; and
 - d. rationale.
 - ii. Linkages to other monitoring programs required in this Licence.
- d) Information regarding responses to monitoring results during Construction and operation, including:
- i. Definitions, with rationale, for Action Levels applicable to the performance of the mitigation measures; and
 - ii. For each Action Level, a description of how exceedances of the Action Level will be assessed and, generally, which types of actions may be taken by the Licensee if the Action Level is exceeded.
- e) A **Quality Control Plan** stamped by a Professional Engineer, a component of which includes a plan for a Professional Engineer to supervise and field check Construction activities.

Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

Schedule 4: Waste and Water Management

1. The **Water Management Plan** referred to in Part F, Condition WATER MANAGEMENT PLAN of this Licence shall include, but not be limited to the following information:
 - a) Information regarding hydrological conditions:
 - i. A description of the underlying and surrounding hydrogeology, including appropriate maps and flow diagrams that depict seasonal variations and/or interactions between Groundwater and surface Water;
 - ii. A summary of baseline data including baseline data collected to date, identification of baseline data gaps and a description of methods for filling in baseline data gaps or methods for approximating baseline conditions if necessary; and
 - iii. A summary of new baseline data collected prior to hydrogeological testing.
 - b) Information regarding using pit water for dust suppression:
 - i. A description of Water quality parameters monitored including physio-chemical parameters, conventional parameters, major ions, nutrients, and total and dissolved metals prior to using pit water for dust suppression;
 - ii. A description of management and mitigation measure used to minimize environmental impact of using pit water for dust suppression considering the following conditions:
 - a. Proximity to Water;
 - b. Application rate near sensitive environments;
 - c. Areas of road that may be subject to flooding;
 - d. Application when precipitation is imminent;
 - e. Response to the Spill if any dust suppressant migrates off the road; and
 - f. Toxicity testing conducted.
 - c) Information regarding the hydrogeological testing methods:
 - i. A schedule for the hydrogeological testing, including duration and flow rate;
 - ii. A description of each hydrogeological testing method including Drawdown and Discharge locations and equipment required;
 - iii. Detailed description of the Water quality compatibility assessment for each testing method, including the following:
 - a. The method for developing the Water quality compatibility criteria;
 - b. The Water compatibility assessment process including flow charts; and
 - c. Rationale that the pit compatibility assessment process meets the objectives listed in Part F, Condition OBJECTIVE – WASTE AND WATER MANAGEMENT.
 - d) Information regarding pits with chemocline:
 - i. The method for identifying chemocline in the pits;
 - ii. The method for developing and validating the total dissolved solid concentration and specific conductivity relationship;
 - iii. The method for developing depth-average total dissolved solid concentrations, including the number and depth of samples at the Drawdown and Discharge pits;
 - iv. The method for developing the Water quality compatibility criteria; and
 - v. The pit compatibility assessment process including flow charts.
 - e) Information regarding fish-bearing pits:
 - i. Description of the method for determining fish presence at Drawdown and Discharge locations;
 - ii. Description of hydrogeological testing methods;

Commented [JH8]: As recommended in ENR's Response to Undertaking, the draft Licence contains conditions regarding the use of pit water for dust suppression management. Board staff are seeking input on the schedule requirement.

Yellow highlights: Board staff seeking input

Green highlights: to be finalized by the Board

- iii. Description of toxicity test method and its associated compatibility criteria for discharging in fish-bearing pits; and
 - iv. The compatibility assessment process including flow charts.
- f) Information regarding monitoring;
- i. A description of Water quality parameters monitored at Drawdown and Discharge locations including physio-chemical parameters, conventional parameters, major ions, nutrients, and total and dissolved metals;
 - ii. Identification, with rationale, of parameters of concern that should be used as indicators of potential impacts from Project-related activities on the aquatic Receiving Environment;
 - iii. A description, including detailed rationale, of the site-specific Hydrogeological testing activities required;
 - iv. A description of monitoring protocols, methodologies, parameters, and frequencies specific to each type of monitoring identified prior to, during, and after the hydrogeological testing;
 - v. A description of monitoring to verify the total dissolved solids and conductivity relationship;
 - vi. A description of the quality assurance and quality control measures followed for each monitoring type;
 - vii. Linkages to other monitoring programs required under this Licence; and
 - viii. Any other information about the monitoring that will be performed to meet the objectives listed in Part F, Condition OBJECTIVE – WASTE AND WATER MANAGEMENT.
- g) Information regarding contingency options including:
- i. A description of contingency options for hydrogeological testing and the compatibility criteria assessment, should the compatibility criteria not be met for a proposed Water transfer;
 - ii. Any criteria and events triggering the use of each contingency option;
 - iii. A description of the series of events and sampling required to use the proposed contingency option; and
 - iv. Any other information required to describe the Water management of the contingency options.
- h) Information regarding the Response Framework that will be implemented during the hydrogeological testing to link the monitoring results to those corrective actions necessary to ensure that the objectives referred in Part F, Condition OBJECTIVE – WASTE AND WATER MANAGEMENT of this Licence are met, including:
- i. Definition, with rationale for Action Levels applicable to the hydrogeological testing; and
 - ii. For each action level, a description of how exceedance of the Action Level will be assessed, and which types of actions may be taken if the Action Level is exceeded.

Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

2. The **Bedrock Sampling Management Plan** referred to in Part F, Condition BEDROCK SAMPLING MANAGEMENT PLAN of this Licence shall include, but not be limited to the following information:

- a) Information regarding Bedrock sampling, including:
 - i. A description of the purpose and scope of bedrock sampling including a description of the management and storage of Bedrock, ore, overburden, and till, appropriate maps or diagrams and descriptions of the methods that will be used to limit Acid Rock Drainage and/or Metal Leaching;
 - ii. An annual schedule for till storage, ore stockpiling, and production, over the term of this Licence, including the sources, tonnage, volume and destination of each rock type;
 - iii. A description of geochemical characterization, including a characterization of rock types (mineralogy and geology of typical rock units) and potential for Acid Rock Drainage and Metal Leaching;
 - iv. A description of Seepage management for test pitting in the event of precipitation; and
 - v. Any other information required to describe how test pitting and bedrock sampling will be managed such that the objectives listed in Part F, Condition OBJECTIVE – WASTE AND WATER MANAGEMENT will be met.
- b) A description of explosives management, including, but not limited to:
 - i. A description of the type of explosives to be used;
 - ii. A description of the facilities to be used for management and storage of explosives, including appropriate maps and diagrams;
 - iii. A description of the mitigation approaches to be employed with respect to storage, handling, blasting, disposal, and spills;
 - iv. The predicted ammonium nitrate dissolution rate; and
 - v. Any other information required to describe how explosives will be managed such that the objectives listed in Part F, Condition OBJECTIVE – WASTE AND WATER MANAGEMENT will be met.

Commented [KM9]: Schedule item based on technical session discussions (Day 2).

Commented [KM10]: Schedule items based on NRCan's comments at the technical session (Day 1) about if PPML will be using packaged explosives or will manufacture explosives (to determine if an application is required under the Explosives Act).

Yellow highlights: Board staff seeking input
Green highlights: to be finalized by the Board

Annex A – Surveillance Network Program (SNP)

Part A: Station Description and Monitoring Requirements

1. The location of sampling stations and specific monitoring requirements are as follows:

SNP station Quick Reference Table

SNP station #	Description
1	Water quantity for all Water use as per Part D, Condition WATER SOURCE AND MAXIMUM VOLUME
2	Withdrawal location for Hydrogeological testing as per Part F, Condition COMPATIBILITY CRITERIA – WATER MANAGEMENT PLAN
3	Discharge location for Hydrogeological testing as per Part F, Condition COMPATIBILITY CRITERIA – WATER MANAGEMENT PLAN
4	Sewage Treatment Plant as per Part F, Condition EFFLUENT QUALITY CRITERIA
5	Artesian Aquifer Outflow as per Part F, Condition REPORT ARTESTIAN AQUIFER
6	Dust Suppression

Yellow highlights: Board staff seeking input
 Green highlights: to be finalized by the Board

SNP Station 1:

Description:	The quantity of water used at approved Water sources as per Part D, Conditions WATER SOURCE AND MAXIMUM VOLUME
Location:	As described in the approved Water Withdrawal Plan
Sampling Frequency:	Daily when pumping in progress
Sampling Parameters:	Flow – Meter (cubic metres per day)
Rationale:	Compliance monitoring sites, in accordance with daily quantity Water Use limits identified in of this Part D, WATER SOURCE AND MAXIMUM VOLUME Condition of this Licence. To monitor the quantity of daily Water Use.
Status:	Active

SNP Station 2:

Description:	The pit water quality at the withdrawal location for hydrogeological testing as per Part F, Condition COMPATIBILITY CRITERIA – WATER MANAGEMENT PLAN
Location:	To be updated with the revised Water Management Plan
Sampling Frequency:	To be updated with the revised Water Management Plan
Sampling Parameters:	pH, dissolved oxygen, temperature, and conductivity, hardness, acidity, total alkalinity, total dissolved solids (measured and calculated ¹), total suspended solids, turbidity, colour, major ions ² , nutrients ³ , CCMS scan ⁴ (total and dissolved); total mercury, toxicity test ⁵
Rationale:	To determine if the water quality in the pit water at the withdrawal and Discharge locations meet the compatibility criteria described in the approved Water Management Plan
Status:	Active during hydrogeological testing

SNP Station 3:

Description:	The pit water quality at the Discharge location for hydrogeological testing as per Part F, Condition COMPATIBILITY CRITERIA – WATER MANAGEMENT PLAN
Location:	To be updated with the revised Water Management Plan
Sampling Frequency:	To be updated with the revised Water Management Plan
Sampling Parameters:	pH, dissolved oxygen, temperature, and conductivity, hardness, acidity, total alkalinity, total dissolved solids (measured and calculated ¹), total suspended solids, turbidity, colour, major ions ² , nutrients ³ , CCMS scan ⁴ (total and dissolved), total mercury
Rationale:	To determine if the water quality at the pit water at the withdrawal and Discharge locations meet the compatibility criteria described in the approved Water Management Plan
Status:	Active during hydrogeological testing

Yellow highlights: Board staff seeking input
 Green highlights: to be finalized by the Board

SNP Station 4:

Description:	Sewage Effluent discharged from Sewage Treatment Plant as per Part F, Condition EFFLUENT QUALITY CRITERIA		
Location:	To be updated as per the Design and Construction Plan as per Part E, Condition DESIGN AND CONSTRUCTION PLAN – SEWAGE TREATMENT PLANT		
Sampling Frequency:	Continuously, by in-line monitoring during periods of flow	Weekly during Discharge	Monthly during Discharge
Sampling Parameters:	Flow, pH, temperature, conductivity, and turbidity	Total dissolved solids (measured and calculated ¹), nutrients ³ , total suspended solids, turbidity, conductivity, faecal coliforms, total petroleum hydrocarbons	Total dissolved solids (measured and calculated ¹), nutrients ³ , total suspended solids, turbidity, conductivity, faecal coliforms, major ions ² , CCMS scan ⁴ (total only), total petroleum hydrocarbons,, <i>E. Coli</i> , oil and grease, carbonaceous biological oxygen demand
Rationale:	Water Licence Compliance Monitoring in accordance with Part F, Condition EFFLUENT QUALITY CRITERIA		
Status:	Active when Sewage Treatment Plant is operating		

SNP Station 5:

Description:	Artesian Aquifer Outflow as per Part F, Condition REPORT ARTESTIAN AQUIFER
Location:	As directed by the Inspector when an Artesian Aquifer is encountered
Sampling Frequency:	As directed by the Inspector when an Artesian Aquifer is encountered
Sampling Parameters:	Turbidity, total suspended solids, total dissolved solids (measured and calculated ¹), conductivity, pH, major ions ² , CCMS scan ⁴ (dissolved only), toxicity test
Rationale:	To ensure Part F, Condition OBJECTIVE – WASTE AND WATER MANAGEMENT is met
Status:	Active when an Artesian Aquifer is encountered

SNP Station 6:

Description:	The pit water quality used for Dust Control described in the approved Water Management Plan
Location:	Pit Water sources described in the approved Water Withdrawal Plan
Sampling Frequency:	
Sampling Parameters:	pH, dissolved oxygen, temperature, and conductivity, hardness, acidity, total alkalinity, total dissolved solids (measured and calculated ¹), total suspended solids, turbidity, and colour, major ions ² , nutrients ³ , CCMS scan ⁵ (total and dissolved); toxicity test
Rationale:	To ensure Part F, Condition OBJECTIVE – WASTE AND WATER MANAGEMENT is met
Status:	Active when pit water is used for dust control

Yellow highlights: Board staff seeking input

Green highlights: to be finalized by the Board

Footnotes:

¹ Total dissolved solids (calculated) shall be calculated as per the American Public Health Association's *Standard Methods for the Examination of Water and Wastewater, 21st Edition (2005)*:

$$\text{TDS}_{\text{calc}} (\text{mg/L}) = (0.6 \times \text{Total Alkalinity as CaCO}_3) + \text{Na}^+ + \text{Mg}^+ + \text{K}^+ + \text{Ca}^{2+} + \text{SO}_4^- + \text{Cl}^- + \text{NO}_3^- + \text{F}^- + \text{SiO}_3^{2-}$$

² Major Ions shall include the following parameters: Bicarbonate (HCO₃), Bromide (Br), Calcium (Ca), Carbonate (H₂CO₃), Chloride (Cl), Magnesium (Mg), Fluoride (F), Sulphate (SO₄²⁻), Sodium (Na), Potassium (K).

³ Nutrients shall include the following parameters: Ammonia (NH₃), Nitrite (NO₂-N), Nitrate (NO₃-N), Total Kjeldahl Nitrogen (TKN), total Phosphorus (P), dissolved Phosphorous (P), Orthophosphate (PO₄³⁻), Dissolved Organic Carbon (DOC).

⁴ Collision Cell Inductively Coupled Plasma Mass Spectrometry (CCMS) or equivalent shall include at a minimum, the following parameters: Aluminum (Al), Antimony (Sb), Arsenic (As), Barium (Ba), Beryllium (Be), Boron (B), Cadmium (Cd), Cobalt (Co), Copper (Cu), Chromium (Cr), Cesium (Cs), Iron (Fe), Lead (Pb), Lithium (Li), Manganese (Mn), Molybdenum (Mo), Nickel (Ni), Rubidium (Rb), Selenium (Se), Silicon (Si), Silver (Ag), Strontium (Sr), Sulphur (S), Titanium (Ti), Tin (Sn), Thallium (Tl), Uranium (U), Vanadium (V), Zinc (Zn). Total metals shall be analyzed in an unfiltered sample and dissolved metals shall be analyzed after passing an unpreserved sample through a 0.45 micron filter.

⁵ Toxicity test for Surveillance Network Program 2 shall include:

Environment Canada. 2000. *Biological Test Method: Acute Lethality of Effluents to Daphnia Magna*. Method Development and Applications Section. Reference Method EPS 1/RM/14. December 2000.

Environment Canada. 2007. *Biological Test Method - Acute Lethality Test Using Rainbow Trout*. Method Development and Applications Section. Report EPS 1/RM/13. December 2000 (with May 2007 amendments).

2. The location of sampling sites is subject to approval of an Inspector.
3. More frequent sample collection may be required at the request of an Inspector.
4. All sample collection, preservation, and analyses shall be conducted in accordance with methods prescribed in the current edition of American Public Health Association's (APHA) *Standard Methods for the Examination of Water and Wastewater* at the time of analysis, or by such other methods approved by an Analyst.
5. 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.
6. A **Quality Assurance/Quality Control Plan (QA/QC Plan)** which includes both field and laboratory requirements shall be submitted to an Analyst, for approval, not less than sixty (60) days in advance of any sampling conducted.
7. The Licensee shall act in accordance with the approved QA/QC Plan and shall review the Plan annually or as directed by the Board and make any necessary revisions to reflect changes in operations. Revisions to the Plan shall be submitted to an Analyst, for approval.
8. If the Quality Assurance and Quality Control Plan is not approved by the Analyst, the Licensee shall revise the Plan according to the Analyst's direction and re-submit it to the Analyst for a decision.

Yellow highlights: Board staff seeking input

Green highlights: to be finalized by the Board

Part B: Flow and Volume Measurements

1. All flow and volume measurements shall be measured and recorded continuously (i.e., using electronic data storage chips or equivalent) during periods of flow or pumping and reported on a monthly basis in cubic metres (m³) as per Annex A, Part C, Condition 1 of this Annex:
 - a) The daily volume of Water pumped from Water sources described in the approved **Water Withdrawal Plan** for all purposes (Surveillance Network Program station 1);
 - b) The daily volume of Water pumped for hydrogeological testing described in the approved **Water Management Plan** (Surveillance Network Program station 2); and
 - c) The daily volume of Water discharged from the Sewage Treatment Plant to the Discharge location (Surveillance Network Program station 4).

2. The following Water level measurements shall be made and recorded:

- a) Water level in pits at Surveillance Network Program stations 2 and 3 during hydrogeological testing; and
- b)

Commented [JH11]: Board staff are seeking input on any other flow and volume measurements.

Part C: Reporting Requirements

1. The Licensee shall, within thirty (30) days following the month being reported, submit to the Board and an Inspector, in electronic formats acceptable to the Board, all data and information required by the Surveillance Network Program, including the results of the approved QA/QC program and any interpretive comments and calculations. Monthly **Surveillance Network Program Reports** should also include:
 - a) Water used as per Part D, Condition WATER SOURCE AND MAXIMUM VOLUME;
 - b) Water level in pits during hydrogeological testing as per Annex A, Part B, Condition 2(a); and
 - c) For parameters regulated under Part F, Condition EFFLUENT QUALITY CRITERIA of this Licence, graphs showing trends in parameter concentrations in the Effluent compared to Effluent Quality Criteria.