



Mackenzie Valley Land and Water Board
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September 9, 2019

File: MV2019L2-0006

Mr. David Harpley
Canadian Zinc Corporation
SUITE 1710-650 West Georgia Street
Vancouver BC V6B 4N9

Email: David.Harpley@norzinc.com

Dear Mr. Harpley:

**Issuance of Type B Water Licence
Mineral Exploration, Prairie Creek Mine, NT**

Attached is Water Licence MV2019L2-0006 granted by the Mackenzie Valley Land and Water Board (MVLWB or the Board) in accordance with the *Mackenzie Valley Resource Management Act* and *Waters Act*. This Licence has been approved for a period of seven years effective September 9, 2019 and expiring September 8, 2026.

Preliminary Screening Exemption Confirmation

Based on the evidence provided, the Board has also confirmed that the Application is exempt from preliminary screening as per Schedule 1, Paragraph 2 of the Exemption List Regulations of the MVRMA which states:

A development, or part thereof, for which renewal of a permit, licence or authorization is requested that

- a) Has not been modified; and
- b) Has fulfilled the requirements of the environmental assessment process established by the *Mackenzie Valley Resource Management Act*, the *Canadian Environmental Assessment Act* or the *Environmental Assessment Review Process Guidelines Order*.

Conditions and General Procedures

Please read all the conditions carefully. For the purpose of submitting plans in accordance with this Licence, the date of this letter September 9, 2019, is the date of issuance. Also attached is a copy of the General Procedures for the Administration of Licences in the Northwest Territories. Please review these carefully and address any questions to the Board's office.

Reclamation Security

In accordance with Water Licence condition Part C, Condition 1, a security deposit in the amount of \$210,648 shall be posted with the Minister and copied to the Board within 90 days of the effective date of the Licence, pursuant to section 35 of the *Waters Act*. Submit payment of the security, made out to the **Government of the Northwest Territories**, in the amount of \$210,648, to: Government of the Northwest Territories, Box 1320, Yellowknife, NT, X1A 2L9, Attention: Director, Water Resources. Please provide a copy of the receipt of security to the MVLWB office.

Management Plan - Approved

The Board hereby approves the Engagement Plan submitted with the Application.

Management Plans – Resubmission Required

The Board hereby requires that Canadian Zinc Corporation Ltd. resubmit the Waste Management Plan, Spill Contingency Plan, Effluent Treatment Plan, and Minewater Treatment Contingency Plan within 90 days, in accordance with comments made during this review, as summarized in the attached Reasons for Decision. These Plans will be considered to be approved, conditionally upon receipt of this information and written conformity of confirmation from Board staff. The Board notes that as the Licence has had minor changes to sampling parameters an updated QA/QC plan is also required within 90 days, as summarized in the attached Reasons for Decision.

Water Use Fees

As outlined in condition Part D, Condition 4, water use fees shall be paid annually as per subsection 8(1) of the *Waters Regulations*. This fee must be paid annually hereafter for the duration of the Licence on or before its anniversary date. Based on the water use fee calculator (attached), Canadian Zinc Corporation Ltd.'s water use fee for the period of September 9, 2019 through to September 8, 2020 is \$30. Submit payment of the water use fee, made out to the **Government of the Northwest Territories**, in the amount of \$30, to: Mackenzie Valley Land and Water Board, Box 2130, Yellowknife, NT, X1A 2P6.

Public Registry

A copy of this Licence has been filed on the [Public Registry](#) at the MVLWB office. Please be advised that this letter, with attached procedures, all inspection reports, and correspondence related thereto, is part of the Public Registry and is intended to keep all interested parties informed of the manner in which the Licence's requirements are being met. All Public Registry material will be considered if an amendment to the Licence is requested.

The full cooperation of Canadian Zinc Corporation Ltd. is anticipated and appreciated. If you have any questions or concerns, please contact Julian Morse at (867) 766-7453 or email jmorse@mvlwb.com.

Yours sincerely,



Mavis Cli-Michaud
MVLWB, Chair

Copied to: Distribution List

Attached: Water Licence MV2019L2-0006
Reasons for Decision
General Procedures for the Administration of Licences in the Northwest Territories



**Mackenzie Valley Land and Water Board
Water Licence**

Pursuant to the *Mackenzie Valley Resource Management Act*, *Waters Act*, and Waters Regulations, the Mackenzie Valley Land and Water Board, hereinafter referred to as the Board, hereby grants to:

Canadian Zinc Corporation Ltd.

(Licensee)

of 1710-650 W. Georgia St., Vancouver, BC, V6B 4N9

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert, or otherwise use water subject to the restrictions and conditions contained in the *Waters Act* and Regulations made thereunder and subject to and in accordance with the conditions specified in this Licence.

Licence Number:	MV2019L2-0006
Licence Type:	B
Water Management Area:	Northwest Territories 03
Location:	Prairie Creek Mine, NT
Purpose:	To use water and dispose of waste and associated uses
Description:	Mineral Exploration
Quantity of Water not to be exceeded :	204 cubic metres (m ³) per year
Effective date of licence:	September 9, 2019
Expiry date of licence:	September 8, 2026

This Licence issued and recorded at Yellowknife includes and is subject to the annexed conditions.

Mackenzie Valley Land and Water Board

A handwritten signature in blue ink, appearing to read "Mavis Cli-Michaud".

Mavis Cli-Michaud, Chair

A handwritten signature in black ink, appearing to read "Amanda Gauthier".

Amanda Gauthier, Witness

MV2019L2-0006
Canadian Zinc Corporation – Mineral Exploration
Type B Water Licence

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Part A: Scope and Definitions

Scope:

1. This Licence entitles the Licensee to use Water and Discharge Waste for mining exploration and associated uses including underground decline development to be accessed at the 870 metre elevation at the Prairie Creek Mine. **SCOPE**
2. 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. Whenever new Regulations are made or existing Regulations are amended by the Commissioner in Executive 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. **REGULATIONS SUBJECT TO CHANGE**
3. Compliance with the defined terms and conditions of this Licence does not relieve the Licensee from responsibility for compliance with the requirements of any applicable federal, territorial, or municipal legislation. **LEGISLATIVE COMPLIANCE**

Definitions¹:

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*.

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*.

Catchment Pond – the engineered structure designed to contain runoff and associated liquid waste from the Prairie Creek minesite, labelled “Run Off Settling Pond” as shown on Drawing Number 301, dated August 2000 and titled “Site Plan”.

Closure Cost Estimate – has the same meaning as that in the MVLWB/GNWT/AANDC *Guidelines for Closure and Reclamation Cost Estimates for Mines*.

Closure Criteria – has the same meaning as that in the MVLWB/AANDC *Guidelines for the Closure and Reclamation of Advance Mineral Exploration and Mine Sites in the Northwest Territories*.

Closure Objectives – has the same meaning as that in the MVLWB/AANDC *Guidelines for the Closure and Reclamation of Advance Mineral Exploration and Mine Sites in the Northwest Territories*.

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.

Dewatering – the complete removal of Water from an existing Watercourse, or portion thereof, by pumping or draining.

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

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

¹ Defined terms are capitalized throughout the License, including when used in other definitions.

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 associated with the Project.

Environmental Assessment (EA) – the totality of the Mackenzie Valley Environmental Impact Review Board's Public Registry for Environmental Assessment EA01-003.

Freeboard – the vertical distance between the Water line and the lowest elevation of the effective Water containment crest on the upstream slope of a Dam or dyke.

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

Groundwater – any Water defined as Groundwater as per section 1 of the Waters Regulations.

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 grab sample.

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 or flows out of any underground mine working or open pit.

Settling Pond – any natural or human-made depression designed to separate solids from Water or Wastewater.

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 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).

Polishing Pond – the Engineered Structure designed to contain the liquid waste from the decline development and operation process, located adjacent to the crusher and concentrator building as shown on the drawing titled "Prairie Creek Mine: Mine water Management Site Plan", dated January 31, 2003.

Potentially Acid Generating (PAG) Rock – any rock that has the capability to produce acidic leachate, Seepage, or drainage.

Prairie Creek Valley Aquifer – the saturated bed, formation, or group of formations in the Prairie Creek Valley which yields water in sufficient quantity to be of consequence as a source of water.

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, Condition 1.

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

RECLAIM – the Government of the Northwest Territories' or Crown-Indigenous Relations and Northern Affairs Canada's model for estimating Closure and Reclamation costs.

Reclamation Research – has the same meaning as that in the MVLWB/AANDC *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories*.

Remediation – the removal, reduction or neutralization of substances, Wastes or hazardous materials from a site in order to prevent or minimize any adverse effects on the environment and public safety, now or in the future.

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

Response Plan – a document describing the actions that will be taken by a licensee in response to an Action Level exceedance.

Runoff – the overland flow of Water or Wastewater that occurs when precipitation, meltwater, or other Water is not absorbed by the land, and instead drains downslope towards a Watercourse.

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 Disposal Facilities – the area(s) and structures designated to contain and treat Sewage.

Solid Waste Disposal Facilities – the area(s) and structures designated to contain solid Waste.

Spill Contingency Plan – a document, developed in accordance with INAC's *Guidelines for Spill Contingency Planning*.

Sump – a human-made pit, trench, hollow, or natural depression used for the purpose of depositing Water and/or Waste.

Surveillance Network Program (SNP) – a monitoring program established to define environmental sampling, analysis, and reporting requirements, as detailed in Annex A of this Licence.

Tailings – the material rejected from the mill after the recoverable valuable minerals have been extracted.

Tailings Containment Facilities – the area(s) and Engineered Structures designated to contain Tailings.

Temporary Closure – a state of care and maintenance, with the intent of resuming activities in the near future.

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 release or Discharge of any Waters or Waste not authorized under this Licence.

Waste – any substance defined as Waste by section 1 of the *Waters Act*.

Waste Disposal Facilities – the area(s) and structures designated for the disposal of Waste.

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

Waste Rock – all rock materials, except ore and Tailings, which are produced as a result of mining and milling operations.

Waste Rock Storage Facilities – the area(s) and Engineered Structures designated for the disposal of Waste Rock and till.

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.

Wastewater Treatment Facilities – the area(s) and-structures designated for the treatment of Wastewater.

Water – any Water as per section 1 of the *Waters Act*.

Watercourse – a natural watercourse, body of Water or Water supply, whether usually containing Water or not, and includes Groundwater, springs, swamps, and gulches.

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 designated to collect and supply Water for the Project.

Water Use – a use of Water as per section 1 of the *Waters Act*

Water Use Fee – the fee for use of Water as per the Waters Regulations pursuant to section 63 of the *Waters Act* and the Mackenzie Valley Land and Water Board's *Water Use Fee Policy*.

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 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 denoted. | USE UP-TO-DATE REFERENCES |
| 6. | The Licensee shall ensure all submissions to the Board: <ul style="list-style-type: none"> 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, programs, and studies approved pursuant to the conditions of this Licence, including such revisions made as per the conditions of this Licence, and as approved by the Board. | 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, or do not, require revisions. | ANNUAL REVIEW |
| 10. | The Licensee may propose changes at any time by submitting revised plans, programs, or studies 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 |
| 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 (SNP), which is annexed to and forms part of this Licence, and any updates to the SNP as may be made by the Board.	COMPLY WITH SNP
15.	The Schedules, the SNP, 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 ensure signs are posted for all active SNP stations. All sign(s) shall be located and maintained to the satisfaction of an Inspector.	POST SNP SIGN(S)
17.	The Licensee shall install, operate, and maintain meters, devices, or other such methods used for measuring the volumes of Water used and Waste discharged to the satisfaction of an Inspector.	MEASURE WATER USE AND WASTE DISCHARGED
18.	The Licensee shall adhere to all commitments as outlined in the following: a) Attachments 1 and 2 of the Mackenzie Valley Environmental Impact Review Board's Attachments to Reasons for Decision; and b) The new commitments made by the Licensee in their January 31, 2003 response to the Mackenzie Valley Environmental Impact Review Board's information request.	EA COMMITMENTS
19.	Beginning March 31, 2020 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 A, Condition 1.	ANNUAL WATER LICENCE REPORT
20.	The Licensee shall comply with the Engagement Plan , once approved.	ENGAGEMENT PLAN
21.	A minimum of ten days prior to commencement of the Project, 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
22.	The Licensee shall immediately provide written notification to the Board and an Inspector of any non-compliance with the conditions of this Licence or any direction from the Board pursuant to the conditions of this Licence.	NOTIFICATION – NON-COMPLIANCE
23.	The Licensee shall submit a current Project schedule to the Board and an Inspector upon request.	SUBMIT CURRENT PROJECT SCHEDULE

Part C: Security

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| 1. | The Licensee shall post and maintain a security deposit with the Minister in accordance with Schedule C. | 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 1 may be adjusted by the Board:
a) Based on an updated Closure Cost Estimate as per Part C, Condition 2; 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 3, the Licensee shall post the adjusted amount with the Minister within the timeframe set by the Board. | 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 |

Part D: Water Use

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| 1. | The Licensee shall only obtain Water for the Project from existing groundwater wells fed by the Prairie Creek Valley Aquifer. The Licensee may withdraw up to 204 m ³ per year of Water from this source. | WATER SOURCE AND MAXIMUM VOLUME |
| 2. | The Licensee shall only withdraw Water using the Water Supply Facilities, unless otherwise temporarily authorized in writing by an Inspector. | WATER WITHDRAWAL – FACILITIES |
| 3. | Prior to obtaining Water from a licensed 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. | POST WATER INTAKE SIGN(S) |
| 4. | Each year, prior to September 9 and in advance of any Water use, the Licensee shall pay the Water Use Fee in accordance with the MVLWB’s <i>Water Use Fee Policy</i> . | WATER USE FEE |

Part E: 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 Plans and Monitoring Programs

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| 3. | The Licensee shall dispose of all Waste as described in the approved Waste Management Plan . | WASTE MANAGEMENT PLAN |
| 4. | The Licensee shall comply with the Effluent Treatment Plan , once approved. The Plan shall outline options to meet the Effluent Quality Criteria requirements from Part E, Condition 16 for the water discharged from SNP Station 3-4. This plan shall be implemented before discharge of water to Prairie Creek, Harrison Creek, or the Catchment Pond. | EFFLUENT TREATMENT PLAN |
| 5. | The Licensee shall comply with the Minewater Treatment Contingency Plan , once approved. The Plan shall be in accordance with the requirements of Schedule C, Condition 1. | MINEWATER TREATMENT CONTINGENCY PLAN |
| 6. | 90 days prior to depositing Waste Rock, the Licensee shall submit to the Board, for approval, a Geochemical Verification Program . This plan shall detail how the Licensee will verify geochemical test results of Waste Rock, quality of seepage from the Waste Rock Pile, and quality of new inflow to the mine workings. The Plan shall meet the objectives listed in Part E, Condition 1 and be in accordance with Schedule C, Condition 2. | GEOCHEMICAL VERIFICATION PROGRAM |

Operation of Structures and Facilities

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| 7. | The Tailings Containment Facilities are not to be used in conjunction with the licenced undertaking. | TAILINGS CONTAINMENT FACILITIES |
| 8. | Prior to licenced activities, the Licensee shall maintain the Catchment Pond discharge control structure to the satisfaction of an Inspector, for the control of discharge from the Catchment Pond to Harrison Creek. | CATCHMENT POND CONTROL STRUCTURE |
| 9. | The Licensee shall maintain a freeboard limit within the Polishing Pond to the satisfaction of an Inspector. | POLISHING POND – FREEBOARD |
| 10. | The Licensee shall operate and maintain the Waste Disposal Facilities to prevent structural failure and to the satisfaction of an Inspector. | PREVENT STRUCTURAL FAILURE |

Inspections of Structures and Facilities

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| <p>11. Prior to the use of the Polishing Pond and related water treatment facilities in conjunction with these licenced activities,</p> <ul style="list-style-type: none">a) a qualified Geotechnical Engineer shall conduct a geotechnical assessment to certify the integrity and capacity of these structures; andb) Within 90 days of completing the assessment, submit the Geotechnical Engineers Assessment Report to the Board and an Inspector. The Report shall include:<ul style="list-style-type: none">i. a covering letter from the Licensee outlining an implementation plan to respond to any recommendations made by the Geotechnical Engineer, including rationale for any decisions that deviate from the Geotechnical Engineer's recommendations; andii. as-built drawings certified by the Geotechnical Engineer. | <p>POLISHING POND
GEOTECHNICAL
ASSESSMENT</p> |
| <p>12. The Licensee shall submit to the Board for approval a geotechnical assessment carried out by a qualified Geotechnical Engineer certifying the integrity and capacity of the Tank Farm Facility and associated containment structures before it may be used in conjunction with the licenced undertakings. This assessment shall certify that the capacity of the containment structures associated with the Tank Farm Facility is 10% greater than the volume of the largest container placed therein.</p> | <p>TANK FARM
GEOTECHNICAL
ASSESSMENT</p> |
| <p>13. All flood protection work, including but not limited to, armoring and rip-rap placements, shall be inspected annually during the summer by a qualified Geotechnical Engineer, 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.</p> | <p>ANNUAL
INSPECTION –
FLOOD
PROTECTION WORK</p> |
| <p>14. The Licensee shall conduct daily erosion inspections of Discharge locations 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.</p> | <p>DAILY INSPECTIONS
– DISCHARGE
LOCATIONS</p> |

Discharge and Disposal Locations and Rates

- | | |
|---|--------------------------------|
| <p>15. All Water from the 870 metre portal shall be discharged to the Polishing Pond.</p> | <p>870 METRE PORTAL</p> |
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Effluent Quality Criteria

16. The Licensee shall ensure that all water measured at Surveillance Network Program station 3-4 has a pH value between 6.0 and 9.5, no visible sheen of oil and grease or floating solids, and meets the following Effluent Quality Criteria (EQC):

**EFFLUENT QUALITY
CRITERIA**

Parameter	Maximum Average Concentration (mg/L)	Maximum Concentration of any Grab Sample (mg/L)
Total Ammonia	5.0	
Total Arsenic	0.5	1.0
Total Cadmium	0.005	0.01
Total Chromium	0.15	0.3
Total Copper	0.1	0.2
Total Lead	0.15	0.3
Total Mercury	0.02	0.04
Total Nickel	0.2	0.4
Total Zinc	0.4	0.8
Total Suspended Solids	15.0	30.0
Total Petroleum Hydrocarbons	5.0	10.0

17. The Licensee shall ensure that Discharge to Prairie Creek shall not be acutely toxic to aquatic life as determined at SNP station 3-4 by the test methods referenced in Part B of SNP.

**EFFLUENT QUALITY
– TOXICITY –
HARRISON TO
PRAIRIE CREEK**

18. All decant water from the Tank Farm Facility berm discharged by the Licensee to any Waters shall have no visible sheen of oil and grease or floating solids, and have a Total Petroleum Hydrocarbon Maximum Average Concentration of 5.0 mg/L and a Maximum Grab Sample Concentration of 10.0 mg/L.

**TANK FARM
DECANT WATER –
QUALITY CRITERIA**

19. The Licensee shall notify an Inspector at least 10 days prior to decanting the Tank Farm Facility.

**TANK FARM
DECANT –
INSPECTOR
NOTIFICATION**

20. If Water quality data from any sample collected at SNP station 3-4 exceeds the EQC specified in Part E, Condition 16, or is determined to be acutely toxic as per Part E, Condition 17, the Licensee shall:

EQC – EXCEEDANCE

- a) Cease the Discharge;
- b) Notify the Board and an Inspector within 24 hours;
- c) Report the spill immediately in accordance with the **Spill Contingency Plan** referred to Part F, Condition 2;
- d) Comply with the approved **Minewater Treatment Contingency Plan** referred to in Part E, Condition 4; and
- e) Submit a detailed report on the occurrence, including a summary of corrective actions taken, to the Board and an Inspector within 30 days.

Part F: Spill Contingency Planning

- | | |
|--|---|
| <p>1. The Licensee shall ensure that Unauthorized Discharges associated with the Project do not enter any Waters.</p> | <p>OBJECTIVE –
PREVENT WASTE
INTO WATER</p> |
| <p>2. The Licensee shall comply with the Spill Contingency Plan, once approved.</p> | <p>SPILL
CONTINGENCY
PLAN</p> |
| <p>3. During the period of this Licence, if a spill or an Unauthorized Discharge occurs or is foreseeable, the Licensee shall:</p> <p style="margin-left: 20px;">a) Implement the approved Spill Contingency Plan referred to in Part F, Condition 2;</p> <p style="margin-left: 20px;">b) Report it immediately using the NU-NT Spill Report Form by one of the following methods:</p> <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 <p style="margin-left: 20px;">c) Within 24 hours, notify the Board and an Inspector; and</p> <p style="margin-left: 20px;">d) Within 30 days of initially reporting the incident, 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.</p> | <p>REPORT SPILLS</p> |
| <p>4. The Licensee shall ensure that spill prevention infrastructure and spill response equipment is in place prior to commencement of the Project.</p> | <p>SPILL PREVENTION
AND RESPONSE
EQUIPMENT</p> |
| <p>5. The Licensee shall restore all areas affected by spills and Unauthorized Discharges to the satisfaction of an Inspector.</p> | <p>CLEAN UP SPILLS</p> |
| <p>6. The Licensee shall not establish any fuel storage facilities or refueling stations, or store chemical or deleterious substances within 100 metres of the Ordinary High Water Mark of any Watercourse, unless otherwise authorized in writing by an Inspector.</p> | <p>MATERIAL
STORAGE –
ORDINARY HIGH
WATER MARK</p> |

Part G: Closure and Reclamation

- | | | |
|----|--|---|
| 1. | Within one year following the effective date of this Licence, the Licensee shall submit to the Board, for approval, a Closure and Reclamation Plan . The Plan shall be in accordance with the requirements of Schedule D, condition 1. | 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. | One year prior to the expiration of this Licence, or one year 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. | One year prior to Progressive Reclamation of any specific component of the Project, the Licensee shall submit to the Board, for approval, a component-specific Closure and Reclamation Plan. The Licensee shall not commence activities described in the Plan prior to Board approval. | CLOSURE AND RECLAMATION PLAN – COMPONENT-SPECIFIC |
| 5. | The Licensee shall endeavor to carry out approved Progressive Reclamation as soon as is reasonably practicable. | PROGRESSIVE RECLAMATION |
| 6. | The Licensee shall not conduct Progressive Reclamation except as approved by the Board. | PROGRESSIVE RECLAMATION – CARRY OUT AS APPROVED |
| 7. | A minimum of ten days prior to the commencement of any Progressive Reclamation, the Licensee shall provide written notification to the Board and an Inspector. Notification shall include the name and contact information for the individual responsible for overseeing the Progressive Reclamation. | PROGRESSIVE RECLAMATION – NOTIFICATION |
| 8. | Within 60 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 |
| 9. | Within 60 days 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> . | PERFORMANCE ASSESSMENT REPORT – COMPONENT-SPECIFIC |

10. Within 90 days of completing Closure and Reclamation of the Project, or as otherwise directed by the Board, the Licensee shall submit to the Board for approval, a **Post-Closure and Reclamation Monitoring and Maintenance Plan**. The Plan shall be in accordance with the requirements of Schedule D, Condition 1.

**POST-CLOSURE
AND RECLAMATION
MONITORING AND
MAINTENANCE
PLAN**

Signed on behalf of the Mackenzie Valley Land and Water Board



Mavis Cli-Michaud, Chair



Amanda Gauthier, Witness

Schedule A: Annual Water Licence Report

1. The **Annual Water Licence Report** referred to in Part B 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;
 - b) An updated Project schedule;
 - c) The monthly and annual quantities in cubic metres of fresh Water obtained from all sources, as required in Part B of this Licence;
 - d) A summary of the calibration and status of the meters and devices referred to in Part B of this Licence;
 - e) A summary of engagement activities conducted in accordance with the approved **Engagement Plan**, referred to in Part B of this Licence;
 - f) A summary of how Traditional Knowledge influenced decision making;
 - g) A summary of major maintenance activities conducted in accordance with this Licence;
 - h) The monthly and annual quantities, in cubic metres, of each and all Waste Discharges, and deposits to Waste Disposal Facilities, identified by location, including all Minewater and Tailings discharge;
 - i) A summary of activities conducted in accordance with the approved **Effluent Treatment Plan**, required in Part E of this Licence, including:
 - i. Any treatment improvements made during the year;
 - ii. The efficacy of treatment; and
 - iii. Any planned treatment improvements for the coming year;
 - j) A summary of activities conducted in accordance with the approved **Spill Contingency Plan**, required in Part F 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 F of this Licence; and
 - ii. An outline of any spill training carried out;
 - k) A summary of activities conducted in accordance with the **Closure and Reclamation Plan**, required in Part G of this Licence, including:
 - i. Details of any Remediation and/or 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;
 - l) 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 E at the points of compliance (SNP Stations 3-4), in Excel format;

- m) 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;
- n) A summary of actions taken to address concerns, non-conformances, or deficiencies in any reports filed by an Inspector;
- o) A table detailing all commitments related to Water use and the deposit of Waste made during the Environmental Assessment, with descriptions of how each commitment is being or has been met; and
- p) Any other details requested by the Board by November 1 of the year being reported.

Schedule B: Security

1. Within 90 days of the effective date of this Licence, pursuant to section 35 of the Act and section 11 of the Regulations, the Licensee shall post and maintain a security deposit in accordance with Part C, Condition 1 of this Licence in the amount of \$210, 648.00.

Schedule C: Water and Waste Management

1. The **Minewater Treatment Contingency Plan** referred to in Part E of this Licence shall include, but not be limited to, the following information:
 - a) contingencies for the treatment of Minewater in the event it does not meet discharge criteria;
 - b) a description of the risk of the Minewater exceeding the Polishing Pond freeboard limit;
 - c) the process and facilities for the collection and management of surface runoff generated on site;
 - d) details of monitoring, including a rationale for each component of the Water management system;
 - e) a description of the Response Framework that will be implemented by the Licensee to link the results of monitoring to those corrective actions necessary to ensure that the objectives listed in Part D Item 11 are met including:
 - a. definitions, with rationale for Action Levels applicable to the performance of the Polishing Pond with respect to geotechnical stability, thermal characteristics, seepage quality and quantity, and run off; and
 - b. for each action level, a description of how exceedances of the Action Level will be assessed and what actions may be taken if the Action Level is exceeded.
 - c.
2. The **Geochemical Verification Program**, referred to in Part E of this Licence, shall meet the objectives listed in Part E, Condition 6 and include, but not be limited to:
 - a) Criteria for defining PAG, non-PAG and Metal Leaching materials with supporting rationale;
 - b) Criteria for defining high, moderate, and low risk Waste Rock with supporting rationale
 - c) Sampling and testing methods for the Geochemical Verification Program (including Waste Rock, Waste Rock Pile Seepage, and any new inflow to the mine workings) with supporting rationale;
 - d) Sampling locations and collection methodology for follow-up verification testing with supporting rationale
 - e) Sampling;
 - f) Timing and frequency of verification sampling;
 - g) Quality assurance and quality control measures; and
 - h) A contingency plan in the event of increasing trends in Metal Leaching or acid generation potential

Schedule D: Conditions Applying to Closure and Reclamation

1. The **Closure and Reclamation Plan** referred to in Part G of this Licence shall include, but not be limited to the following information:
 - a) A plain language summary of the Plan;
 - b) A description of the overall goals for Closure and Reclamation of the Project, including expected future land use;
 - c) A description of the Closure and Reclamation planning team;
 - d) A description of engagement related to Closure and Reclamation planning, including a summary of completed and planned engagement, and links to the **Engagement Plan** referred to in Part B of this Licence for the Project;
 - e) A list of any other regulatory instruments required for Closure and Reclamation of the Project;
 - f) A description of the pre-existing and current Project environment, including, but not limited to:
 - i. climatic conditions;
 - ii. physical conditions;
 - iii. chemical conditions;
 - iv. biological conditions;
 - v. any physical or chemical assessments of soil, water, and permafrost; and
 - vi. traditional uses;
 - g) A description of the Project, including, but not limited to:
 - i. site history;
 - ii. Project development;
 - iii. current status of the Project;
 - iv. maps delineating all disturbed areas, borrow material locations, site facilities, hydrological features, and elevation contours; and
 - v. photographs;
 - h) A description of each Project component, including, but not limited to:
 - i. The water intake facilities;
 - ii. The water treatment and waste disposal sites and facilities;
 - iii. The petroleum and chemical storage areas;
 - iv. The natural runoff waters from the development site;
 - v. The restoration of natural drainage and the restoration of stream banks at the operation site(s);
 - vi. The potential for groundwater contamination;
 - vii. Any facilities or areas which may be affected by development such that potential pollution problems exist;
 - viii. The waste rock storage areas;
 - ix. areas affected by spills or Unauthorized Discharges; and
 - x. other areas affected by Project activities;
 - i) For each Project component identified in Condition (h) above, a description of Closure and Reclamation plans, including, but not limited to:
 - i. Closure Objectives and Criteria;
 - ii. preferred Closure and Reclamation option and method;

- iii. design drawings, signed and stamped by a Professional Engineer, for any Engineered Structures;
 - iv. Water management and restoration of natural drainage;
 - v. predicted environmental effects during and after Closure and Reclamation activities;
 - vi. post-closure monitoring, maintenance, and reporting;
 - vii. uncertainties and contingencies;
 - viii. climate change considerations; and
 - ix. Closure and Reclamation Research plans;
- j) A description of any planned Progressive Reclamation;
- k) A plan for Temporary Closure, including, but not limited to the following information:
- i. Temporary Closure goals and objectives;
 - ii. a description of activities and methods;
 - iii. a description of monitoring, maintenance, and reporting;
 - iv. contingencies; and
 - v. an implementation schedule;
- l) An implementation schedule that includes Progressive Reclamation and final Closure and Reclamation activities; and
- m) A Closure Cost Estimate.

Annex A: Surveillance Network Program
Annexed to Type B Water Licence MV2019L2-0006
Canadian Zinc Corporation. – Mineral Exploration

Table of Contents

Part A: Reporting Requirements

Part B: Site Descriptions and Monitoring Requirements

Part A: Reporting Requirements

1. The effective date of this Surveillance Network Program (SNP) is September 9, 2019.
2. Beginning on October 1, 2019, and for every month thereafter, the Licensee shall submit to the Board and an Inspector, a **Surveillance Network Program Report**, which shall include, but not be limited to the following:
 - a) Electronic and tabular summaries of all data and information generated under the SNP for the month being reported, including rationale for SNP stations where samples were not collected and results and interpretation of quality assurance/quality control procedures;
 - b) Graphical summaries and interpretation of the analytical results from the SNP samples collected at the point of compliance (SNP station 3-4) compared to the EQC under Part E of this Licence, for the previous 2 consecutive years;
 - c) An explanation of any actions taken in response to any exceedances of the effluent quality criteria;
 - d) Information regarding the calibration and status of the meters and devices referred to in Part B of this Licence;
 - e) The coordinates of all SNP stations which were established within the month being reported, including an updated map identifying the locations of all the SNP stations; and
 - i. Weekly quantity of Water in cubic metres withdrawn from the Water Supply Facilities;
 - ii. Weekly quantity of Waste in cubic metres Discharged;
 - iii. Observations from the weekly inspection of the Waste storage areas as required by Part E of this Licence.
 - f) A tabular summary of cumulative Water use.
3. More frequent sample collection may be required at the request of an Inspector.
4. All sampling, sample preservation, and analyses shall be conducted in accordance with methods prescribed in the edition of American Public Health Association's (APHA) *Standard Methods for the Examination of Water and Wastewater* current at the time of analysis, or by other such 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. Prior to the collection of SNP samples, the Licensee shall submit to the Board and an Analyst, a **Quality Assurance and Quality Control Plan**, which shall include a list of techniques that will be used to collect and analyze samples collected under the SNP, for the purposes of quality assurance and quality control. An Analyst shall provide a recommendation to the Board.
7. The Licensee shall operate in accordance with the Quality Assurance and Quality Control Plan, once approved.

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 an Analyst for a decision.

Part B: Site Descriptions and Monitoring Requirements

1. The location of sampling sites is subject to approval of an Inspector.
2. The sampling station locations and monitoring requirements are as follows:

SNP station 1-1

Description	The daily Water Use for all purposes. Water Use shall be measured and recorded in m ³ .
Location	CZN to provide
Sampling Frequency	Daily when pumping is in progress
Sampling parameters	Flow – Meter, Volume (m ³)
Rationale	Compliance monitoring site, in accordance with daily quantity Water Use limits identified in Part D, Condition 1 of this Licence. To monitor the quantity of daily Water use.
Status	Active

Note: Footnotes are defined after the final table in Part B.

SNP station 3-1

Description	Freshwater pump house wet well
Location	CZN to provide
Sampling Frequency	Every 6 months during winter and summer
Sampling Parameters	Standard ^b , Total Metals ^c
Status	Active

SNP station 3-3

Description	Wastewater discharge from Pilot Plant
Location	CZN to provide
Sampling Frequency	Weekly during operations, and twice during the summer months after operations have ceased
Sampling Parameters	Total Metals ^c , Standard ^b
Status	Inactive

SNP station 3-4

Description	Polishing Pond Discharge			
Location	CZN to provide			
Sampling Frequency	Continuous	Weekly during operations, and twice during the summer months after operations have ceased	Weekly during operations when underground activities are occurring and one month after cessation	Twice per year during open water
Sampling Parameters	Volume (Cubic Metres)	EQC outlined in Part G, Condition 16, Total Metals ^c , Standard ^b , Sulphate	Nutrients ^a , Hydrocarbons ^d	Toxicity ²
Rationale	Compliance Monitoring			
Status	Active			

² Toxicity shall be assessed at an accredited bioassay laboratory for the following analyses:

- i. Acute toxicity – fish using Environment Canada. 2007. *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout. Environmental Protection Series, Report EPS 1/RM/13.* Method Development and Application Section, Environmental Technology Centre, Ottawa, ON, Canada.
- ii. Acute toxicity – invertebrates using Environment Canada. 2000. *Biological Test Method for Determining Acute Lethality of Effluents to Daphnia magna. Environmental Protection Series, Report EPS 1/RM/14.* Method Development and Application Section, Environmental Technology Centre, Ottawa, ON, Canada.

SNP station 3-5

Description	Catchment Pond Discharge	
Location	CZN to provide	
Sampling Frequency	Weekly during operations, and twice during the summer months after operations have ceased	Weekly during operations when underground activities are occurring and one month after cessation
Sampling Parameters	Total Metals ^c , Standard ^b , Sulphate	Nutrients ^a , Hydrocarbons ^d
Status	Active	

SNP station 3-6

Description	Final discharge from Harrison Creek to Prairie Creek – confluence at culvert	
Location	CZN to provide	
Sampling Frequency	Weekly during operations, and twice during the summer months after operations have ceased	Weekly during operations when underground activities are occurring and one month after cessation
Sampling Parameters	Total Metals ^c , Standard ^b , Sulphate	Nutrients ^a , Hydrocarbons ^d
Status	Active	

SNP station 3-7

Description	870 metre portal final mine water discharge	
Location	CZN to provide	
Sampling Frequency	Weekly during operations, and twice during the summer months after operations have ceased	Weekly during operations when underground activities are occurring and one month after cessation
Sampling Parameters	Total Metals ^c , Standard ^b , Sulphate	Nutrients ^a , Hydrocarbons ^d
Status	Active	

SNP station 3-8

Description	Reagent storage facility catchment basin
Location	CZN to provide
Sampling Frequency	Twice per year during open water
Sampling Parameters	Total Metals ^c , Standard ^b ,
Status	Active

SNP station 3-9

Description	Harrison Creek upstream from the reagent storage facility
Location	CZN to provide
Sampling Frequency	Monthly during operations and twice during the summer months after operations have ceased.
Sampling Parameters	Total Metals ^c , Standard ^b ,
Status	Active

SNP station 3-10

Description	Prairie Creek upstream from the Airstrip
Location	CZN to provide
Sampling Frequency	Monthly during operations and twice during the summer months after operations have ceased.
Sampling Parameters	Total Metals ^c , Standard ^b ,
Rationale	Background monitoring
Status	Active

SNP station 3-11

Description	Downstream from the confluence of Prairie Creek and Harrison Creek
Location	CZN to provide
Sampling Frequency	Monthly during operations and twice during the summer months after operations have ceased.
Sampling Parameters	Total Metals ^c , Standard ^b ,
Rationale	Monitoring
Status	Active

SNP station 3-12

Description	Tank Farm Dewatering Discharge
Location	Tank Farm
Sampling Frequency	Whenever dewatering of the tank farm occurs.
Sampling Parameters	Hydrocarbons ^d
Rationale	Monitoring
Status	Active

Notes:

- a. Total Ammonia (NH₃ + NH₄⁺ - N), Total Nitrate + Nitrite (NO₃ + NO₂),
- b. pH, Temperature (T), and Conductivity (Cond). These parameters should be measured both in the field as well as in the laboratory.
- c. Full = Total elemental analysis by ICP-Metal Scan of: ICP-MS 24 element scan: includes all elements in Total Metals plus Antimony (Sb), Arsenic (As), Barium (Ba), Bismuth (Bi), Cesium (Cs), Chromium (Cr), Lithium (Li), Thallium (Tl), Titanium (Ti), Uranium (U), & Vanadium (V).
- d. Extractable Hydrocarbons (ExtHC), and Benzene, Toluene, Ethyl-benzene, and Xylene (BTEX).

Signed on behalf of the Mackenzie Valley Land and Water Board

Mavis Cli-Michaud, Chair

Amanda Gauthier, Witness

**Annex B: Concordance Table of Items Requiring Submission
Annexed to Water Licence MV2019L2-0006**

Canadian Zinc Corporation. – Mineral Exploration

This table summarizes the information the Licensee is required to submit as per the Water Licence conditions.

Table 1: Water Licence Submission Requirements

Part of Licence	Item	Date
B	19 – Annual Water Licence Report	Beginning March 31, 2020 and no later than every March 31 thereafter
B	20 – Engagement Plan	Comply once approved
C	1 – Security Deposit	Within 90 days of the effective date of the Licence
D	4 – Water Use Fee	Prior to September 9 and in advance of any water use
E	3 – Waste MGMT Plan	Within 90 days of the effective date of the Licence
E	4 – Effluent Treatment Plan	Within 90 days of the effective date of the Licence
E	5 - Minewater Treatment Contingency Plan	Within 90 days of the effective date of the Licence
E	6 – Geochemical Verification Program	90 days prior to depositing waste rock
E	11 - Geotechnical Engineers Assessment Report	Within 90 days of completing assessment
E	12 – Tank farm geotechnical assessment	Upon completion of assessment
E	13 – Flood Protection Work Inspection Report	Annually upon completion of inspection
F	2 – Spill Contingency Plan	Within 90 days of the effective date of the Licence
G	1 – Closure and Reclamation Plan	Within one year following effective date of Licence
G	2 – Revised CRP	Every three years following previous approval
G	3 - Final CRP	One year prior to the expiration of this Licence, or one year prior to the end of operations, whichever occurs first
G	4 – Component Specific CRP	One year prior to Progressive Reclamation of any specific component of the Project
G	8 – Completion Report	Within 60 days of completing Closure and Reclamation of any specific component of the Project
G	9 – Performance Assessment Report	Within 60 days of completing Closure and Reclamation of any specific component of the Project
G	10 - Post-Closure and Reclamation Monitoring and Maintenance Plan	Within 90 days of completing Closure and Reclamation of the Project, or as otherwise directed by the Board
Annex A	2 – SNP Reports	Monthly beginning Oct 1, 2019
Annex A	6 – QA/QC Plan	Prior to collection of SNP Samples

Annex C: Table of Revision History
Annexed to Water Licence MV2019L2-0006
Canadian Zinc Corporation. – Mineral Exploration

Table 1: Updates and changes that have been made to the Water Licence since issuance

Date	Location of change	Description of change
-	-	-

**General Procedures for the Administration of Licences
Issued Under the *Waters Act*
in the Northwest Territories**

1. At the time of issuance, a copy of the Licence is placed on the Public Registry in the office of the Mackenzie Valley Land and Water Board (MVLWB or the Board) in Yellowknife and is then available to the public.
2. To enforce the terms and conditions of the Licence, the Minister of Environment and Natural Resources has appointed Inspectors in accordance with subsection 65(1) of the *Waters Act*. The Inspectors coordinate their activities with staff of the MVLWB. The Inspector responsible for Licence MV2019L8-0006 is located in the Fort Simpson office.
3. To keep the MVLWB and members of the public informed of the Licensee's conformity to the Licence's conditions, the inspectors prepare reports which detail observations on how each item in the Licence has been met. These reports are forwarded to the Licensee with a covering letter indicating which action, if any, should be taken. The inspection reports and cover letters are placed on the Public Registry, as are any responses received from the Licensee pertaining to the inspection reports. It is therefore of prime importance that you react in all areas of concern regarding all inspection reports so that these concerns may be clarified.
4. Licence MV2019L8-0006 will expire on September 8, 2026, if required; it is the responsibility of the Licensee to apply to the MVLWB for a new licence. The past performance of the Licensee, new documentation and information, and points raised during a public hearing, if required, will be used to determine the terms and conditions of any new licence. Please note that if the Licence expires and another has not been issued, then water and waste disposal must cease, or you, the Licensee, would be in contravention of the *Waters Act*. In the case of a Type B Licence, an application shall be made at least six months in advance of the Licence's expiry date.
5. If, for some reason, Licence MV2019L8-0006 requires amendment, you are reminded that applications for amendments should be submitted as soon as possible to provide the MVLWB ample time to complete the amendment process.
6. Specific clauses of your Licence make reference to the Board, Analyst, or Inspector. The contact person, address, phone, and fax number of each is:

Mackenzie Valley Land and Water Board:

Public Registry Clerk
Mackenzie Valley Land and Water Board
7th Floor - 4922 48 Street,
P.O. Box 2130
YELLOWKNIFE NT XIA 2P6
Phone: (867) 669-0506
Fax: (867) 873-6610

Analyst:

Street Address:

Taiga Environmental Laboratory
4601 - 52nd Ave
Yellowknife, NT
X1A 1L4

Mailing Address:

Taiga Environmental Laboratory
P.O. Box 1320
Yellowknife, NT
X1A 2L9

Phone: (867) 767-9235, ext 53151

Fax: (867) 920-8740

General Email: taiga@gov.nt.ca

Inspector:

Sonja Martin-Elson
Water Resources Officer
Department of Environment of Natural Resources
Government of the Northwest Territories
P.O. Box 240
FORT SIMPSON, NT X0E 0N0
Phone: (867) 695-7450 ext. 1012

7. Specific clauses of your licence may reference security. The contact person, address, and phone and fax numbers of the individual administering security deposits is:

Director, Water Resources
Department of Environment and Natural Resources
Government of the Northwest Territories
P.O. Box 1320
YELLOWKNIFE NT X1A 2L9
Phone: (867) 767-9234 ext. 53105
Fax: (867) 873-4229



Mackenzie Valley Land and Water Board
7th Floor - 4922 48th Street
P.O. Box 2130
YELLOWKNIFE NT XIA 2P6
Phone (867) 669-0506
FAX (867) 873-6610

Reasons for Decision

Issued pursuant to paragraph 40(2)(c) of the Mackenzie Valley Land Use Regulations (MVLUR) and section 36 of the *Waters Act*

Water Licence and Land Use Permit Applications	
Preliminary Screener	MVLWB
File Number	MV2019L2-0006 and MV2019C0011
Company	Canadian Zinc Corporation Ltd.
Project	Mineral Exploration, Prairie Creek Mine, NT
Date of Decision	August 29, 2019

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These Reasons for Decision set out the Mackenzie Valley Land and Water Board's (the MVLWB/Board) regulatory process and decisions on Applications made by Canadian Zinc Corporation Ltd. (CZN) to the Board on April 24, 2019 for Water Licence (Licence) MV2019L2-0006 and Land Use Permit (Permit) MV2019C0011 for mineral exploration activities at the Prairie Creek Mine. These applications were for renewal of Licence MV2001L2-0003 and Permit MV2012C0008.

1.0 List of Abbreviations

Anniversary Date	Effective date of Licence as seen on the Licence cover page
Applicant	Canadian Zinc Corporation Limited OR CZN
Applications	CZN's submissions in support of Water Licence MV2019L2-0006 and Land Use Permit MV2019C0011
CanNor	Canadian Northern Economic Development Agency
DFN	Dehcho First Nations
DFO	Department of Fisheries and Oceans
DIAND	Department of Indigenous Affairs and Northern Development
DKFN	Deninu Kue First Nation
EA/EIR	Environmental Assessment/Environmental Impact Review
ECCC	Environment and Climate Change Canada
FRMC	Fort Resolution Métis Council
GNWT	Government of the Northwest Territories
GNWT-ENR	Government of the Northwest Territories – Environment and Natural Resources
IR	Information Request
Inspector	Government of the Northwest Territories – Environment and Natural Resources – Water Resource Officer (Inspector) OR Government of the Northwest Territories – Lands – Resource Management Officer (Inspector)
Licence	Water Licence MV2019L2-0006
LKDFN	Łutsel K'e Dene First Nation
LKFN	Łı́ı́ı́ı́ Kúę First Nation
MVEIRB	Mackenzie Valley Environmental Impact Review Board
MVLUR	Mackenzie Valley Land Use Regulations
MVLWB or Board	Mackenzie Valley Land and Water Board
MVRMA	<i>Mackenzie Valley Resource Management Act</i>
Minister	Minister of Environment and Natural Resources for the Government of the Northwest Territories OR Minister of Lands for the Government of the Northwest Territories
NSMA	North Slave Métis Association
NWTMN	Northwest Territory Métis Nation
Party	As per the Board's <i>Rules of Procedures</i>
Permit	Land Use Permit MV2019C0011
Project	Prairie Creek Mine Exploration
Review Board	Mackenzie Valley Review Board
Reviewer	As per the Board's <i>Rules of Procedures</i>
SKFN	Sambaa K'e First Nation
Standard Template	Board's <i>Standard Land Use Permit Conditions Template</i>
YKDFN	Yellowknives Dene First Nation

2.0 Summary of Application(s)

On April 24, 2019, CZN submitted Applications for a Licence MV2019L2-0006 and Permit MV2019C0011. These Applications are for renewal of Licence MV2001L2-0003 and Permit MV2012C0008, and proposed to continue previously permitted and licenced activities unchanged. The previous Permit and Licence were for mineral exploration activities at the Prairie Creek Mine, specifically, development of an underground decline, and treatment of mine water emanating from an existing portal at the mine. These activities are located within a Non-Federal area.

3.0 Regulatory Process

3.1 Environmental Assessment: EA01-003

An EA was conducted for this Project in 2001¹. Since that time, CZN applied for several amendments to the Water Licence, which were screened by the Board but not referred to EA. No changes to the Project were proposed by CZN in the Applications, therefore findings of the EA were not affected by the Applications. Preliminary Screening exemption is discussed later in these reasons.

3.2 Details of the Regulatory Process

On April 24, 2019, CZN submitted Applications for a Licence MV2019L2-0006 and Permit MV2019C0011. The Applications were deemed incomplete by Board staff on May 3, 2019.² On July 9, 2019, additional information was received from CZN, and the Applications were subsequently deemed complete and the review commenced on July 19, 2019. A draft Licence and Permit were distributed for reviewer comment with the Applications. The drafts were based on standard conditions issued by the Board for similar projects, and conditions of the existing Permit and Licence.

By August 7, 2019, comments and recommendations regarding the Applications were received by the Board from the following parties: CZN, ECCC, GNWT-ENR, GNWT-Lands, Board Staff, and Racher Consulting on behalf of NDDB and LKFN. On August 14, 2019, CZN responded to the parties' information requests.

On August 29, 2019, the Board met to make decisions regarding the Applications.

4.0 Legislative Requirements

In conducting the review process for the Applications as described in Sections 2 and 3 above, the Board has ensured that all applicable legal and procedural requirements have been satisfied, as required by section 62 of the MVRMA and as outlined below.

4.1 General

The use of land, water, and the deposit of waste proposed is of a nature contemplated by the MVRMA and the *Waters Act*.

As this Project is located on a Non-Federal Area, the MVRMA and *Waters Act* apply.

¹ See the Review Board's [Public Registry for EA01-003](#)

² See MVLWB Letter – [WL Application Incomplete](#), and [LUP Application Incomplete](#) dated May 3, 2019.

4.2 MVRMA Part 3: Duty to Consult (Aboriginal Matters)

In exercising its authority under the MVRMA, generally, the Board must ensure that the concerns of Aboriginal people have been taken into account as per paragraph 114(c) of the MVRMA. It must also consider the importance of conservation to the well-being and way of life of Aboriginal peoples of Canada, as per paragraph 60.1(a) of the MVRMA, specifically those to whom section 35 of the *Constitution Act, 1982* applies and who use an area of the Mackenzie Valley. Accordingly, the Board works with applicants, affected parties (including Aboriginal organizations/governments), and other parties (such as other boards and regulators) to ensure that potential impacts of proposed projects are understood and carefully considered before decisions are made with respect to the issuance of Permits and Licences.

In order to address the question of Aboriginal consultation it is first helpful to understand the general process through which the Board considers an application.^{3,4} Following the initiation of engagement and the submission of an application, a proposed project goes through several stages in the Board's approval process. The application is reviewed to ensure that all necessary information is included and to confirm that the right types of Permit and Licence have been applied for. This check for completeness is completed within ten days of receipt.

The application and supporting documents are uploaded to the Board's webpage and then an application package is distributed to stakeholders, including appropriate federal and territorial government departments and agencies; landowners; affected communities and Aboriginal organizations; Renewable Resource Boards; heritage regulators; and other interested parties. For the distribution list that the Board used, see Table 1 below:

Table 1: Organizations on the Distribution List for the Applications

Acho Dene Koe First Nation	GNWT - Lands - South Slave Region - Fort Smith
Canadian Northern Economic Development Agency	GNWT - MACA
CanNor NWT Region	Hamlet of Fort Liard
CanZinc Corporation	Hamlet of Fort Providence
CPAWS - NT Chapter	INAC - CARD
Deh Cho Land Use Planning Committee	INAC - NWT Inspectors
Deh Gah Got'ie Dene Council	INAC - Yellowknife
Dehcho First Nations	Ka'a'gee Tu First Nation
Dene Nation	Katlodeeche First Nation
Dene Tha' First Nation	Liard First Nation (Yukon)
Digaa Enterprises Ltd.	Liidlii Kue First Nation (Ft Simpson)
Environment and Climate Change Canada	Mackenzie Valley Environmental Impact Review Board
Fisheries and Oceans Canada	Naha Dehe Dene Band
Fort Providence Metis Council #57	North Slave Metis Alliance
Fort Providence Resource Management Board	NWT- OROGO
Fort Simpson Metis Local 52	Parks Canada

³ See www.mvlwb.com → Resources → Policies and Guidelines: [MVLWB Guide to the Land Use Permitting Process](#) (2013).

⁴ See www.mvlwb.com → Resources → Policies and Guidelines: [Guide to Completing Water Licence Applications to the Mackenzie Valley Land and Water Board](#) (2003).

Forward Mining	Pehdzeh Ki First Nation (Wrigley)
McDonald, Bruce	Racher Consulting
Carey, Thomas	Ross River Dena Council
GLWB	Sambaa Ke First Nation (Trout Lake)
GNWT - ECE	Snap Lake Environmental Monitoring Agency - SLEMA
GNWT - ENR	Tł̨chq̨ Government
GNWT - ENR - Deh Cho Region	Tł̨chq̨ Lands Protection Department
GNWT - ENR - South Slave Region - Fort Smith	Transport Canada
GNWT - Health	T̨h̨ets'ek'ehdeli First Nation (JMR)
GNWT - INF	Wek' eezhii Renewable Resources Board
GNWT - ITI	West Point First Nation
GNWT - Lands	Wek'èezhii Land and Water Board
GNWT - Lands - Dehcho Region	Parbery, David
GNWT - Lands - Hay River Region	
GNWT - Lands - North Slave Region	

The Board requested that reviewers provide comments with respect to the Applications and associated management plans. For a Type A Permit, as was the case in this Application, within 42 days of receipt of a complete application, unless additional information is required, the Board will either: (a) issue a Permit with conditions; (b) conduct a hearing under section 24 of the MVRMA or require that further studies or investigations be made; (c) refer it to the MVEIRB for environmental assessment; or (d) refuse to issue the Permit if a requirement set out in section 61 or 62 of the MVRMA has not been met or for any other reason as provided for in legislation. For a Type B Licence, as was the case in this Application, within nine months the Board shall make a decision. When the review is completed, comments are forwarded to the applicant for a response.

4.2.1 The Board Role in Consultation

The Board's requirements for engagement are set out in its *Engagement and Consultation Policy* (the Policy).⁵ The Policy was developed to ensure that the Board's obligations for achieving meaningful consultation (as set out by the land claims and applicable legislation) with all affected parties, including Aboriginal groups in the Mackenzie Valley, are met and consultation results clearly articulated. The Policy has three broad objectives; to guide applicants in proactive engagement related to land and water applications; to assist the Board to meet its own statutory requirements by providing a forum for consultation on concerns and proposed mitigations; and to assist in ensuring the adequacy of Crown consultation.

The core of the Policy is as follows:

- 1) To require proponents to initiate dialogue and engagement planning with affected parties, particularly affected Aboriginal organizations/governments, in advance of an application with the goals of:
 - explaining the project;

⁵ See www.mvlwb.com → Resources → Policies and Guidelines: [MVLWB Engagement and Consultation Policy](#) (June 1, 2013).

- identifying concerns and potential environmental impacts (including any potential for impacts to Aboriginal and treaty rights);
 - addressing concerns raised; and
 - ensuring appropriate levels and types of engagement are carried out over the life of an authorization or project.
- 2) To apply consultative approaches throughout a proceeding, which assist affected parties to meaningfully contribute to the assessment of impacts on the environment and the establishment of appropriate mitigations in order for the Boards to meet statutory responsibilities pursuant to the MVRMA and the Waters Act and their regulations.
 - 3) To assist in ensuring, and if necessary, rule on the adequacy of Crown consultation before making a final decision or recommendation, taking into account information gathered during proponent engagement and through its consultative processes.

4.3 MVRMA Part 3 and 4 and Waters Act: Land and Water Regulation and MVLWB

The Board has jurisdiction to issue this Licence and Permit as per subsection 60(1.1) of the MVRMA.

4.3.1 General

The Board has considered the people and users of the Mackenzie Valley, and any traditional knowledge and scientific information that was made available to it during this regulatory proceeding, as per section 60.1 of the MVRMA.

4.3.2 Public Notice

Notice and copies of the Applications was given to fulfill sections 63 and 64 of the MVRMA. The Board is satisfied that a reasonable amount of time was given to communities, First Nations, and the public to participate in this regulatory process by making submissions to the Board.

4.3.3 Existing Licences

With respect to 26(5)(a) of the *Waters Act*, no other Licensees contacted the Board during the statutory period, and there are no applicants with precedence in the watershed as per subsection 72.26(1) of the MVRMA/59(1) of the *Waters Act*. The Board is satisfied that the granting of this Licence will not adversely affect, in a significant way, any existing Licensee if compliance with the Licence occurs.

4.3.4 Compensation to Existing Water Uses

Paragraph 26(5)(b) of the *Waters Act* prohibits the issuance of the Licence unless the Board is satisfied that appropriate compensation has been or will be paid by the applicant to persons who would be adversely affected by the use of waters, or deposit of waste proposed by the applicant, at the time when the applicant filed its application with the Board.

The Board received no claims for compensation. Provided compliance with the Licence conditions takes place, the Board finds that there are no water users or persons listed in paragraph 26(5)(b) of the *Waters Act* who will be adversely affected by the use of waters or the deposit of waste proposed.

4.3.5 Water Quality Standards

With regards to 26(5)(c)(i) of the *Waters Act*, the Board is satisfied that compliance with the Licence conditions will ensure that waste will be collected and disposed of in a manner which will maintain water quality consistent with applicable standards and the Board's *Water and Effluent Quality Management Policy*.

4.3.6 Effluent Quality Standards

There are no effluent quality standards prescribed in the Waters Regulations. The Board is nonetheless satisfied that the effluent quality standards set out in the Licence are consistent with the Board's *Water and Effluent Quality Management Policy* and will protect the receiving waters and environment.

4.3.7 Financial Responsibility

The Board must satisfy itself of the financial responsibility of CZN under paragraph 26(5)(d) of the *Waters Act* before it can issue the Licence.

No concerns were raised by reviewers regarding considerations related to paragraph 26(5)(d).

As a result, and for the reasons set out above, the Board is satisfied that the financial capacity of the Applicant, in this case, is adequate and meets the requirements of paragraph 72.03(5)(d) of the MVRMA/26(5)(d) of the *Waters Act*.

4.3.8 Minimization of Adverse Effects

With regards to subsection 27(2) of the *Waters Act*, it is the opinion of the Board that compliance with the Licence will ensure that any potential adverse effects on other water users, which might arise because of the issuance of the Licence, will be minimized.

4.3.9 Time Limit

The Board is satisfied it has adhered to 48(1) of the *Waters Act*, which requires it to make a decision within a period of nine months after the day on which an application is made or a notice advertised as per subsections 43(1) and 43(2) of the *Waters Act*.

4.4 MVRMA Part 5: Environmental Review

4.4.1 Preliminary Screening

CZN indicated in the cover letter for their Applications that due to the fact the Applications were for renewal and proposed no changes to activities, they were of the opinion the Applications were exempt from preliminary screening. In their comments on the Applications, GNWT-Lands indicated they were in agreement that the Applications were exempt. The Board confirmed the activities associated with the Applications were exempt from preliminary screening based on Part 1, Schedule 1, section 2 of the Exemption List Regulations to the MVRMA. Consequently, no preliminary screening was conducted.

5.0 Decision – Water Licence MV2019L2-0006

In making its decision and preparing these Reasons for Decision, the Board has reviewed and considered:

- 1) The comments and recommendations made during the regulatory process;
- 2) The evidence and submissions from CZN received by the Board;
- 3) The written comments and submissions from parties received by the Board; and
- 4) The Staff Report prepared for the Board.

Having due regard to the facts, circumstances, and the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA and the *Waters Act*, the Board has determined that Licence MV2019L2-0006 should be issued, subject to the scope, definitions, conditions, and term contained therein. The Board's determinations and reasons for this decision are set out below.

The scope, definitions, conditions, and term set forth in the Licence have been developed to address the Board's statutory responsibilities and the concerns that arose during the regulatory process. The Reasons for Decision set out below focus on the major concerns and issues raised by parties, including those that were the subject of substantive argument submitted by one or more parties. They also address evidence which resulted in the inclusion of new or revised conditions that differ from those in the existing Licence MV2001L2-0003.

The format of the Licence has been reorganized from Licence MV2001L2-0003, with minimal content changes. These changes modernize the Licence and enhance its consistency with other licences for similar undertakings in the Northwest Territories and regulated under the *Waters Act*. Site-specific conditions were included where necessary.

5.1 Term of Licence

CZN has applied for a term of seven years for the Licence, to match the potential term of the Permit applied for at the same time.

Subsection 26(2) of the *Waters Act* allows for a Licence term of not more than 25 years or the duration of the undertaking. No comments were received which raised concern with the term applied for by CZN. Considering this, and as the Licence and Permit are closely linked, the Board decided to continue the practice of setting the Licence term to coincide with that of the Permit, and therefore set the term of the Licence for seven years from the date of issuance which takes into account the five-year term of the Permit, plus the possibility of a two-year extension of the Permit's term.

5.2 Part A: Scope and Definitions

Part A of the Licence contains the scope and definitions for terms used throughout.

Scope

The scope of the Licence ensures the Licensee is entitled to conduct activities which have been applied for and screened by the Board. In setting out the scope of the Licence, the Board endeavoured to provide enough detail to identify and describe the authorized activities, without be unduly restrictive or prescriptive, and to allow for project flexibility throughout the life of the Permit. The scope of the Licence is unchanged from the scope of the previous Licence, as CZN did not request any changes to the scope of activities. No comments were received from reviewers specific to the scope of the Licence.

Part A, conditions 1(b) through 1(e) are consistent with previous Licences issued by the Board. These conditions ensure that the scope of the authorization includes all water uses and deposits of waste associated with the Project, reflect and comply with all applicable legislation for the life of the authorization, and consider and incorporate scientific and Traditional Knowledge where available in the Licensee's effort to protect the environment.

GNWT – ENR suggested that for consistency the Board change the word “deposit” of waste in the scope to “discharge”, as it is a defined term in the Licence. The Board concurred with the recommendation.

Definitions

The Board defined items in the Licence to ensure a common understanding of conditions, to avoid future differences in interpretation, and to use wording similar to that found in previously issued Licences. Where appropriate, the Board changed standard wording, or carried over Project-specific definitions from the previous Licence.

GNWT-ENR submitted comments related to definitions which relate to a current review of potential standard Licence conditions, which are yet to go to the full Mackenzie Valley Land and Water Board for approval. The Board determined to maintain definitions in the Licence as-is, and will consider GNWT-ENR's comments for future standard Licence conditions at the appropriate time.

GNWT-ENR noted that the term “significance threshold” was defined but does not occur in the Licence. The definition was removed accordingly.

5.3 Part B: General Conditions and Schedule A

Part B and Schedule A of the Licence contain general administrative conditions regarding compliance and conformity with the *MVRMA* and *Waters Act*, and are consistent with standard conditions found in previous Licences issued by the Board.

Part B, condition 5, clarifies that 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 denoted. This standard practice allows for flexibility in Licence conditions when documents are updated during the life of the Licence.

This section addresses conformity and compliance with submissions to the Board. Annual review and submission of major updates or changes to management plans are required by Part B, condition 9, for Board approval. Such revisions must be approved by the Board prior to the implementation of activities not identified in existing, approved plans. This condition ensures that all applicable plans are regularly reviewed and updated so they reflect changes in technology and/or changes and phases of the project throughout the life of the authorization.

GNWT-ENR submitted a number of comments on the conditions contained in this section which relate to a review of potential standard water Licence conditions. As described above the Board determined that decisions related to as-yet approved standard conditions are not appropriate for consideration for this specific Licence. As such, the Board maintained status quo and kept conditions similar to the previous licence and other licences issued by the Board for similar scale projects in the Mackenzie Valley. GNWT-ENR's comments related to standard conditions, use of schedules, and

other matters will be duly considered by the full Mackenzie Valley Land and Water Board at the time when standard Licence conditions are brought before them for decision.

Annual Water Licence Report

The requirements for the Annual Water Licence Report are outlined in Part B, condition 19, and Schedule A, condition 1. The purpose of the Annual Water Licence Report is to provide the Board and all stakeholders the opportunity to be annually updated on project components and activities, and to provide a platform for stakeholders to submit comments, observations, feedback, and questions as necessary. The requirements are intended to provide clarity and summarize information already captured through existing submissions; they are not meant to be onerous. The Board organized these requirements to coincide with the layout of the Licence and to be consistent with recently issued licences.

Part B, condition 20: Engagement

The Board assesses engagement adequacy of applications through the Board's *Engagement Guidelines for Applicants and Holders of Water Licences and Land Use Permits*, and the Board's *Engagement and Consultation Policy*. The Board notes that CZN's pre-engagement for the Applications was determined to be in accordance with the Guidelines and Policy. CZN included an Engagement Plan and Log in the Applications. No concerns were raised by reviewers with the Plan or Log during review of the Applications.

The Board has approved the Engagement Plan because it meets the Board's Guideline and Policy, and sufficiently reflects the scope of the proposed activities.

5.4 Part C: Conditions Applying to Security Requirements and Schedule B

The Board is authorized to require the Licensee to provide security to the Minister by subsection 35(1) of the *Waters Act*. Subsection 35(2) of the *Waters Act* specifies how the security may be applied.

Part C of the Licence, by reference to Schedule B, sets the level of security to be maintained by the Licensee and sets out requirements related to posting and updating security. As in other licences, the Board may request a security update from the proponent at any time, and may adjust the security amount at any time, based on available information. Specifically, conditions in Part C stipulate that the Board can revise the security deposit and that the Licensee will post the revised deposit within 90 days following the Board's decision. This condition pertains to both increases and reductions in security. The conditions in this section are similar to those found in other Licences issued by the Board.

The Board has determined that the total security deposit amount shall be \$446,986; \$210,648 is required under the Licence and \$236,338 is required under the Permit. A detailed explanation of how the Board determined the security deposits for these two instruments is provided in Appendix 1: Reclamation Security of these Reasons for Decision. They are discussed together since the estimates deal with the same project and are intimately linked.

5.5 Part D: Conditions Applying to Water Use

Part D of the Licence contains conditions related to water use for the Project. These are consistent with standard conditions found in previous Licences issued by the Board.

The maximum quantity of water that can be withdrawn is 204m³ per year, as was applied for by CZN. Board staff queried CZN regarding this amount, due to the fact that it did not align with water use reported in the most recent Annual Report submitted under the existing Licence. CZN clarified that their water use associated with the activities specifically applied for is smaller than overall site water use, and noted that if the Board wanted to include all site water use, CZN would request a larger amount, however CZN did not provide another amount. Considering this, the Board decided to grant what was requested in the Application, as it was the only specific amount requested by CZN. Water use associated with non-exploration related activities will need to be reported in accordance with the mine Licence MV2008L2-0002.

5.6 Part E: Conditions Applying to Waste and Water Management and Schedule C

Part E and Schedule C of the Licence contain conditions applying to waste and water management activities for the Project and is consistent with standard conditions included in previous Licences issued by the Board. Site-specific conditions were carried over from the previous Licence. No changes to EQC were made as a result of the Application. This section of the Licence largely remains unchanged from the previous Licence, with noted exceptions.

Management Plans and Monitoring Programs

Part E, condition 3: Waste Management Plan

The Boards' authority to regulate the management of waste is described in subsection 26(1) of the MVLUR and sections 11 and 27 of the *Waters Act*. As such, the Board developed, and approved, *Guidelines for Developing a Waste Management Plan*.⁶ These guidelines can be applied to a wide range of projects and are intended to ensure that all waste management activities specific to each project are carried out in a way that is consistent with best practices and applicable guidelines to minimize waste released from the Project. Waste Management Plan is a defined term in the Licence, ensuring that the required Plan adheres to the Board's Guidelines.

Submittal and compliance with a Waste Management Plan is standard for Licences issued by the Board. CZN included a Waste Management Plan in the Application.

Several reviewers requested further detail regarding incineration practices. CZN responded that they plan to replace the incinerator with a newer model. The Board notes that CZN will need to revise and re-submit the Waste Management Plan to reflect this change when it occurs.

GNWT-ENR raised several minor concerns with information which was not included in the Waste Management Plan that should have been, such as a comprehensive list of types and quantities of expected waste, details regarding incineration, monitoring, and clarity regarding storage location and disposal plans for contaminated snow and water.

⁶ See www.mvlwb.com → Resources → Policies and Guidelines: [MVLWB Guidelines for Developing a Waste Management Plan](#) (March 31, 2011).

The Waste Management Plan was given interim approval by the Board, with CZN being required to revise and re-submit the Plan within 90 days of issuance of this Licence to reflect updates as noted during the public review, to meet the applicable guidelines, and to include the following:

- a comprehensive list of types and quantities of expected waste as requested by GNWT-ENR in Comment 44 in the Review Comment Table
- details regarding incineration as requested by GNWT-ENR in comment 45 in the Review Comment Table
- details regarding monitoring as requested by GNWT-ENR in comment 46 in the Review Comment Table
- details regarding storage location and disposal plans for contaminated snow and water as requested by GNWT-ENR in comment 47 in the Review Comment Table

The revised Plan will be considered approved upon written confirmation of conformity from Board staff.

Part E, Conditions 4 and 5: Effluent Treatment Plan (ETP) and Minewater Treatment Contingency Plan (MTCP)

Both of these Plans are carry-overs from the previous Licence, and were submitted by CZN in accordance with that Licence. The Plans were distributed for review with the renewal Applications due to the timing of the Applications and upcoming expiry of the existing Licence.

The joint submission from NDDDB/LKFN suggested changing the name of the plan from “Effluent Treatment Options Plan” and some minor changes to the requirements for the plan in the schedule. CZN agreed with the recommendations; as such the Board decided to include them as requested. NDDDB/LKFN further suggested the Plan be revised to reflect the suggested changes. Those changes include; a) reference what happens when effluent is not compliant, b) describe where water quality monitoring results are reported, c) contain a commitment to keep improving the system as needed, and d) reference where system improvements will be reported. CZN agreed to these recommendations.

The Board approved the ETP on an interim basis, with CZN being required to revise and re-submit the ETP based on the above noted recommendations and CZN’s agreement to implement them. The revised ETP is to be re-submitted within 90 days of issuance of this Licence. The revised ETP will be considered approved upon written confirmation of conformity from Board staff.

In their comments on the MTCP, GNWT-ENR noted that the Plan did not contain management options outlining how non-compliant water from the polishing pond would be managed to prevent release to the environment, and recommended the Plan not be approved by the Board until CZN provides this information. CZN did not respond to this comment. Furthermore, GNWT-ENR requested data supporting CZN’s assertion that surface water runoff does not affect the water treatment system. While CZN did respond to this recommendation, they did not adequately respond to the request for information.

For these reasons, the MTCP was given interim approval by the Board, with CZN being required to revise and re-submit the MTCP within 90 days of issuance of this Licence to include the following:

- management options outlining how non-compliant water from the polishing pond will be managed to prevent release to the environment; and
- information to support CZN's assertion that surface water runoff does not affect the treatment system.

The revised MTCP will be considered to be approved upon written confirmation of conformity from Board staff.

Part E, condition 6 – Geochemical Verification Program

Due to uncertainty related to potential leachate from waste rock associated with development of the 2nd Decline, GNWT-ENR recommended inclusion of a simple Geochemical Verification Program to confirm and ensure that deposit of the additional waste rock does not result in negative effects. CZN opposed this recommendation, noting that waste rock was previously tested prior to deposit, and a similar process would be implemented in the case of 2nd Decline development. The Board noted that Geochemical Verification Programs are commonly required in Licences for similar projects regulated by the Board, and considering CZN is amenable to testing the rock, not an unreasonable requirement. As a result, the Board included a Geochemical Verification Program in the Licence.

Operation and Inspection of Structures and Facilities

The conditions in this section were carried over from the previous Licence. CZN noted that a catchment pond control structure was already in place and suggested the condition be deleted. The Board noted the condition also stipulated maintenance of the structure, so reworded the condition to that effect and retained it.

Geotechnical assessments of both the polishing pond and tank farm were required by the previous Licence. CZN noted that these assessments were completed and therefore suggested the conditions could be deleted. The Board noted that retention of the conditions does not mean CZN needs to re-do work, simply that they can verify with the Inspector that the assessments remain relevant. The Board decided to retain the conditions to grant the inspector a tool to require CZN to reassess these structures if required.

Discharge Locations and Rates

No changes were made to this section of the Licence from the previous Licence.

Effluent Quality Criteria

No changes to Effluent Quality Criteria were proposed by CZN in the Application, nor were any suggested by reviewers. As such no changes were made to the Effluent Quality Criteria in the Licence.

Condition 17 is a standard condition used by the Board to ensure water toxic to aquatic life does not enter the receiving environment. This condition was not included in the previous Licence, however toxicity testing at SNP station 3-4 was required. This condition grants the ability to the Inspector to enforce this requirement. In response to ECCC's comment that toxicity testing should occur at station 3-4, CZN suggested that the testing should occur at 3-6. The purpose of the toxicity testing is to verify that the treated effluent being discharged from the site to the receiving environment is not acutely

toxic to aquatic life. SNP 3-4 is the first post-treatment station and is designated as the compliance point related to EQC and toxicity testing needs to be completed at this station. Moving the toxicity testing downstream to SNP 43-6 results in toxicity testing within the receiving environment and does not satisfy the intent of this toxicity testing to verify the quality of the treated effluent prior to discharge.

Condition 20 – EQC Exceedance is a standard condition used to ensure non-compliant water does not enter the receiving environment. CZN raised concern with inclusion of this condition in the Licence, noting that ceasing discharge is not possible with the current configuration of water treatment at the site. The Board noted that compliance related to the maximum average limit for Zinc has been an ongoing issue with this Licence, which is why the MTCP and ETP were required by the Board. The fact that CZN cannot maintain compliance with the Licence is not adequate justification to change Licence conditions. The Board noted and appreciates CZN’s ongoing efforts to address this problem, and looks forward to receiving updated results of 2019 treatment, which hopefully has shown an improvement and brought CZN into compliance with the Licence. The Board decided to retain this condition and encourages CZN to work to improve treatment and control structures at the site to ensure compliance with the Licence.

5.7 Part F: Conditions Applying to Contingency Planning

Part I of the Licence contain conditions related to spill contingency planning and reporting, reclamation of spills and unauthorized discharges, and emergency response for the Project. The purpose of this part is to ensure that CZN is fully prepared to respond to spills and unauthorized discharges. The planning and reporting requirements in this part ensure that CZN has identified the lines of authority and responsibility, has an action plan(s) for responses to spills and unauthorized discharges, and has established reliable reporting and communication procedures. This will ensure that any spills or unauthorized discharges are effectively controlled and remediated, with the goal of preventing or limiting damage to the receiving environment. The conditions in Part I are consistent with standard conditions found in previous Licences issued by the Board.

Part F, condition 2: Spill Contingency Plan

Spill Contingency Plan is a defined term in the Licence, referencing the Indian and Northern Affairs Canada’s *Guidelines for Spill Contingency Planning*. CZN included a Spill Contingency Plan in the Applications. GNWT-ENR requested that the Plan be updated to include maps outlining where spill equipment is located, where hydrocarbons and chemicals are stored, and potential pathways for spills. GNWT-ENR also requested the plan be updated to include the quantity and location of spill kits on site. CZN did not respond to this request.

The Spill Contingency Plan was given interim approval by the Board, with the requirement that CZN revise and resubmit that Plan within 90 days of issuance of the Licence to reflect the guidelines, and to include the following:

- maps outlining where spill equipment is located, where hydrocarbon and chemicals are stored, and potential pathways for spills; and
- the quantity and location of spill kits.

The revised Spill Contingency Plan will be considered approved upon written confirmation of conformity from Board staff.

5.8 Part G: Conditions Applying to Closure and Reclamation and Schedule D

Part J and Schedule D of the Licence contain conditions applying to closure and reclamation of the Project. The conditions in this section were updated to reflect standard closure conditions contained in similar licences issued by the Board. Closure requirements in Schedule D were carried over from the previous Licence, and combined with modern standards. The Board notes that all Closure and Reclamation Plans (including Interim and Final) shall be in accordance with the Mackenzie Valley Land and Water Board and Aboriginal Affairs and Northern Development Canada's *Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories* (Closure Guidelines).⁷ CZN included a Draft Closure and Reclamation Plan in the Applications.

CZN raised concern with the changes to the closure and reclamation section of the draft Licence, suggesting they were excessive considering the scope of the undertaking. CZN also noted that conditions related to progressive reclamation may cause problems if CZN begins construction under the mining Licence MV2008L2-0002. The Board notes that if CZN is to reach that stage in the project and activate conditions under the mining licence it is expected that this Licence would be closed at that point. As noted in Appendix 1, CZN's desire to maintain this Licence separately from the mining Licence creates overlap, and the Board encourages CZN to address this issue by applying for an amendment to MV2008L2-0002 which would bring all activities at the site under one Licence, eliminating the overlap problem.

Regarding CZN's concerns related to the scope of the Application and whether closure conditions are excessive, the Board notes that these conditions are typical of any Licence issued by the Board for advanced exploration projects. Although it is not preferential that CZN maintains a separate exploration licence for the mine site, as long as this is the case, the Licence must include closure conditions to cover the licenced activities.

In their comments on the Application, ECCC suggested increasing the time for CZN to submit a closure and reclamation plan, due to uncertainty related to planned operations at the site. The Board decided that additional time, up to one year, was appropriate.

Due to the fact that the Plan was submitted in draft form, it was not considered for approval.

5.9 Annex A: Surveillance Network Program

Annex A of the Licence contains conditions applying to the Surveillance Network Program (SNP). The SNP details the sampling and monitoring requirements related to compliance with numerous conditions and plans required by the Licence. Requirements for measuring flows, volumes, and meteorological data are based on standard water licence conditions as are the reporting requirements.

CZN noted that as sampling does not occur throughout the entire year, monthly reporting as required by the standard condition might not make sense. The Board noted this concern and suggests that CZN can submit a letter noting that conditions at site are frozen and sampling will not occur for the winter.

⁷ See www.mvlwb.com → Resources → Policies and Guidelines: [MVLWB/AANDC Guidelines for the Closure and Reclamation of Advances Mineral Exploration and Mine Sites in the Northwest Territories](#) (DATE).

CZN noted that a Quality Assurance and Quality Control Plan, as required by Condition 6, may have been submitted previously. The Board noted this but due to the fact that the Licence is being renewed and minor changes to sampling parameters were included in the updates to the Licence, an updated QA/QC plan is required.

For station 1-1, CZN noted they were not previously required to meter flow, and simply estimated water use, which they suggest is minimal. The Board noted that as water use is limited by the Licence, metering of the water used is necessary to ensure compliance. This is a typical requirement of any Licence issued by the Board. The Board determined that requiring flow metering is reasonable for these reasons.

For Station 3-1, CZN suggested there was no need to sample nutrients and solids at this well as it is for freshwater, the Board therefore removed these parameters from the sampling requirements.

ECCC suggested making station 3-3 inactive, as CZN has indicated they do not intend to operate the pilot plant. CZN did not raise concern with this recommendation. For these reasons, the Board set the station to inactive.

CZN raised concern with some of the sampling parameters suggested by Board staff for the draft Licence. The Board noted that Board staff included typical monitoring parameters for comment. CZN suggested that sampling of Nutrients and Hydrocarbons in stations 3-4 to 3-7 was not necessary unless underground operations were occurring – the Board agreed with this statement and changed these stations accordingly.

Considering CZN's use of sulphate in treatment, the Board determined this parameter should be monitored at stations 3-4 to 3-7, but removed the requirement for monitoring of Major Ions from all stations. CZN also raised concern with sampling requirements for stations 3-8 to 3-11, noting that TDS, Nutrients, and Hydrocarbons were not necessary. The Board noted these statements and changed the sampling parameters accordingly.

ECCC recommended addition of an SNP station to record test results of tank farm water as required by Part E, Condition 18. CZN objected to this recommendation. Considering CZN is already required to sample this water, the Board determined recording this information in SNP reports would not be an onerous requirement, and added the station as recommended by ECCC.

5.10 Annex B: Table of Submissions

Annex B of the Licence contains a table that summarizes the information CZN is required to submit as required by the Licence conditions.

5.11 Annex C: Table of Revision History

Annex C of the Licence contains a table which identifies updates and tracks changes made to the Licence. This table is currently blank because this is a new Licence, but it will be updated throughout the life of the Licence.

6.0 Decision – Land Use Permit MV2019C0011

In making its decision and preparing these Reasons for Decision, the Board has reviewed and considered:

- 1) The comments and recommendations made during the regulatory processes;
- 2) The evidence and submissions from CZN received by the Board;
- 3) The written comments and submissions from parties received by the Board; and
- 4) The Staff Report prepared for the Board.

Having due regard to the facts, circumstances, and the merits of the submissions made to it, and to the purpose, scope, and intent of the MVRMA, the Board has determined that Permit MV2019C0011 should be issued, subject to the scope, definitions, conditions, and term contained therein. The Board's determinations and reasons for this decision are set out below.

The scope, definitions, conditions, and term set forth in the Permit have been developed to address the Board's statutory responsibilities and the concerns that arose during the regulatory processes. The Reasons for Decision set out below focus on the major concerns and issues raised by parties, including those that were the subject of substantive argument submitted by one or more parties.

The Permit has been modernized to enhance its consistency with other Permits for similar activities. Site-specific conditions were carried over from the previous Permit where applicable.

6.1 Term of Permit

CZN applied for a term of 5 years for the Permit. Subsections 26(5) of the MVLUR allows for a Permit term of not more than five years. No comments were made regarding the term of the Permit; therefore the Board granted the Permit for 5 years.

6.2 Part A: Scope of Permit

The scope of the Permit ensures the Permittee is entitled to conduct activities which have been applied for and screened by the Board. In setting out the scope of the Licence, the Board endeavoured to provide enough detail to identify and describe the authorized activities, without be unduly restrictive or prescriptive, and to allow for project flexibility throughout the life of the Permit. The scope remained unchanged from the previous Permit.

6.3 Part B: Definitions

The Board defined items in the Permit to ensure a common understanding of conditions, to avoid future differences in interpretation, and to use wording similar to that found in previously issued Permits. For the most part, the definitions used wording from the Board's *Standard Land Use Permit Conditions Template* (Standard Template). Where appropriate, definitions from the previous Permit were carried forward.

6.4 Part C: Conditions Applying to All Activities

Most conditions in the Permit are from the Board's Standard Template, and are not discussed in detail in these Reasons for Decision unless notable due to recommendations or concerns raised during the public review.

26(1)(a) Location and Area

GNWT-Lands recommended addition of a condition for a buffer zone between watercourses and drilling activity. CZN responded noting that drilling will occur from within the existing decline and

suggested the condition was therefore unnecessary. The Board concurred with CZN's position and decided not to include the condition.

26(1)(f) Control or Prevention of Ponding of Water, Flooding, Erosion, Slides, and Subsidence of Land

GNWT-Lands recommended inclusion of the Excavation and Embankments condition to ensure waste material piles are sloped appropriately. CZN did not raise an issue with this recommendation, and the Board agreed it was an appropriate condition for the Permit, so the condition was added.

26(1)(i) Storage, Handling, and Disposal of Refuse or Sewage:

A Waste Management Plan is a standard requirement for Permits issued by the Board. This Plan is intended to ensure that all waste management activities are carried out in a way that is consistent with best practices and applicable guidelines to minimize waste released from the Project. This Plan is also required under the Licence and the Board's reasons for including this Plan, and requiring revisions and re-submittals, are described above. The Board mirrored these conditions to the extent possible with the Licence requirements to ensure one submission will satisfy conditions of both the Licence and Permit.

26(1)(l) Security Deposit

The Board is authorized to require the Permittee to provide security to the Minister by subsection 32(1) of the MVLUR. Subsection 32(2) of the MVRMA specifies how the security may be applied.

The Board has included a requirement for security in the Permit. The Board's reasons associated with this section are provided in Appendix 1, in conjunction with reasons for security required by the Licence. The security deposits required by these two instruments are discussed together since the estimates deal with the same project and are intimately linked. The conditions included in this section are consistent with the Board's Standard Template.

26(1)(m) Fuel Storage

A Spill Contingency Plan is a standard requirement for All Permits issued by the Board. This Plan is intended to ensure that an action plan(s) for responses to spills and Unauthorized Discharges, and has established to effectively control and remediate spills and Unauthorized Discharges, with the goal of preventing or limiting damage to the receiving environment. This Plan is also required under the Licence and the Board's reasons for including this Plan, and requiring revisions and re-submittals, are described above. The Board mirrored these conditions to the extent possible with the Licence requirements to ensure one submission will satisfy conditions of both the Licence and Permit.

26(1)(q) Biological and Physical Protection of the Land

An Engagement Plan is a standard requirement for Permits issued by the Board. This Plan is intended to ensure adequate and effective engagement with potentially affected parties has occurred prior to the submission of the Applications (in the form of the Engagement Log) and is planned for throughout the life of the Project. This Plan is also required under the Licence and the Board's reasons for including this Plan, and requiring revisions and re-submittals, are

described above. The Board mirrored these conditions to the extent possible with the Licence requirements to ensure one submission will satisfy conditions of both the Licence and Permit.

7.0 Conclusion

Subject to the scopes, definitions, conditions, and terms set out in the Licence and Permit, and for the reasons expressed herein, the MVLWB is of the opinion that the land-use activities, water use, and waste disposal associated with the Project can be completed by Canadian Zinc Corporation Ltd. while providing for the conservation, development, and utilization of waters in a manner that will provide the optimum benefit for all Canadians and in particular for the residents of the Mackenzie Valley.

Water Licence MV2019L2-0006 and Land Use Permit MV2019C0011 contain provisions that the Board deems necessary to ensure and monitor compliance with the MVRMA, *Waters Act*, and the Regulations made thereunder, and to provide appropriate safeguards in respect of CZN's use of the land and water affected by the Licence.

SIGNATURE

Mackenzie Valley Land and Water Board



Mavis Cli-Michaud, Chair

August 29, 2019

Date

Appendix 1: Reclamation Security for the Project

1.0 Introduction

CZN included security estimates for the Permit and Licence with their Applications. In their cover letter for the Applications, CZN made reference to Surface Lease 95F/10-5-5 (the Lease), which details CZN's obligations related to reclamation of the mine site, and noted that due to the conditions of the Lease, they were of the opinion their liability for site restoration is limited. This consideration was the subject of a previous review and Board decision related to security obligations associated with CZN's Mining Licence MV2008L2-0002 and Permit MV2008D0014⁸, which acknowledged the limitations to CZN's liability and set security for site reclamation accordingly. Discussion of the difficulties inherent with having overlapping Licences for the same mine site is included below with the Board's conclusions related to security.

1.1 CZN Evidence Submitted to the Board

CZN's estimate for land-related liabilities to be included under the Permit totalled \$50,076. The estimate was prepared using the Board's security worksheet for land use permits. CZN's estimate for water-related liabilities to be included under the Licence was prepared using the RECLAIM model, which is the model recommended and used by the GNWT for their own security estimates. CZN's estimate for water-related liabilities totalled \$47,108.

1.2 GNWT-ENR – Evidence Submitted to the Board

As part of their submission to the Board, GNWT-ENR prepared and submitted a RECLAIM estimate of their own, which considered both land and water-related liabilities. GNWT-ENR noted that their "estimate considers the fact that there are some parts of the site that are not the responsibility of CZN as per the 2003 Abandonment and Restoration Plan"⁹. GNWT-ENR provided two estimated totals, one that considered the need for construction of a winter road to support remediation activities, and one which did not include this consideration. The total for the winter-road included estimate was \$786,986. Without the winter road, GNWT-ENR's estimate totalled \$446,986, with \$210,648 apportioned to water-related liability, and \$236,338 for land-related liability. GNWT-ENR acknowledged that their estimate was higher than CZN's, and noted that they had used version 7 of the RECLAIM model, which contains additional indirect and unit costs. GNWT-ENR further noted that their estimate included care and maintenance activities to maintain compliance with the water licence¹².

1.3 Discussion and Determinations

In response to GNWT-ENR's estimate, CZN argued that liability related to water emanating from the underground workings was not their responsibility¹⁰. In reviewing the copy of Surface Lease 95F/10-5-5 provided by CZN¹¹ during the above-noted proceeding related to security for the mine Licence and Permit, the Board noted it is not explicitly clear that CZN's statement related to water emanating from the underground workings is correct. The Board noted that Item 6 in the Abandonment and Restoration Plan attached to the Surface Lease stipulates that underground entrances "will be sealed in accordance with the Government of the Northwest Territories Mining Regulations"¹². This appears

⁸ See the Board's [May 21, 2015 Reasons for Decision](#) regarding security for MV2008L2-0002 and Permit MV2008D0014

⁹ GNWT-ENR Comment ID 48 in the Review Comment Table

¹⁰ CZN response to GNWT-ENR Comment ID 48 in the Review Comment Table

¹¹ See Annex A of CZN's [December 22, 2013 submission to the Board](#)

¹² See Annex A of CZN's [December 22, 2013 submission to the Board](#)

to suggest that impacts associated with the underground workings are, in fact, CZN's responsibility. The Board noted that the Surface Lease is an instrument administered by GNWT and held by CZN, and disagreements between the parties regarding obligations under the Surface Lease are between the parties, and do not involve the Board. However, the Board is obligated to include appropriate security requirements in the Licence and Permit, and had to consider the evidence on hand in making their determinations. The Board noted that GNWT-ENR acknowledged and based their estimate in consideration of the limited liability CZN holds due to the Surface Lease, and saw no reason not to accept that this assertion was based on an accurate interpretation of the Surface Lease, which is administered by GNWT.

What was not completely clear as a result of this proceeding is the level to which security for the Licence MV2019L2-0006 currently before the Board and the existing mine Licence MV2008L2-0002 overlap. This highlights an overarching problem with the exploration Licence MV2019L2-0006, which is that it overlaps with the site covered by mining Licence MV2008L2-0002, which is a much more comprehensive Licence that covers the entire site, and is intended to be the standalone Licence for the mine site. The Board is of the opinion that significant efficiency and advantage would be achieved if CZN applied to amend MV2008L2-0002 to include the activities associated with MV2019L2-0006, and then applied to close the smaller Type B Licence. There is no practical reason why both Licences need to exist. The Board therefore strongly encourages CZN to discuss this matter with Board staff and consider making an application which would remedy this problem of Licence overlap.

Regarding whether additional security should be paid to cover road construction, the Board noted that the primary mechanism to cover reclamation of the mine site is with Licence MV2008L2-0002, for which CZN has paid security, which covers the costs of removing materials, which included the assumption that a road would be required for said removal. It is unlikely a scenario will occur where reclamation of liabilities associated with Licence MV2019L2-0006 would not overlap with those under MV2008L2-0002, therefore, the Board determined requiring road-related liabilities be covered under both instruments unnecessary.

In consideration of the evidence submitted by GNWT-ENR and CZN, the Board decided to accept GNWT-ENR's estimates for land and water-related liabilities which did not include consideration for winter road construction. GNWT-ENR provided evidence which showed they had considered and taken into account CZN's limited site liability, and included consideration for care and maintenance activities, which the Board determined is a reasonable contingency to include. The Board set security in the Licence at \$210,648, and in the Permit at \$236,338, as recommended by GNWT-ENR.

The Board noted that due to the fact that CZN submitted their response to Board staff's incomplete letter for the Applications so soon before the expiry date of the Licence, the proceeding was conducted over a much shorter time period than would normally occur for a Type B Licence renewal. In a longer proceeding, there may have been opportunity for CZN and GNWT-ENR reach better consensus regarding security. The Board notes that Part C, Condition 3 of the Licence allows CZN to apply to change the security amount required by the Licence at any time. Similarly, a permittee can apply to the Board for amendments to any condition of a Permit in accordance with Subsection 26(2) of the MVLUR. The Board also notes that security could be revisited and updated in Licence MV2008L2-0002 if CZN chooses to proceed as advised and initiate a process to eliminate the need for the exploration Licence.