



GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Environment and Climate Change

CERTIFICATE OF APPROVAL

Pursuant to the Environmental Protection Act, SNL 2002 c E-14.2 Section 83

Issue Date: **December 21, 2023**

Approval No. AA23-125701

Expiration: **December 21, 2028**

File No. 713.910.8

Proponent: **Vale Newfoundland & Labrador Limited**
KMK Place, 2nd Floor
18 Hebron Way
St. John's, NL A1A 0L9

Attention: Ms. Lisa Lanteigne, Manager
Environment – Canada Operations

Re: **Vale NL Long Harbour Processing Plant**

Approval is hereby given for: the operation of the Vale NL Long Harbour Processing Plant at Long Harbour, NL.

This Certificate of Approval does not release the proponent from the obligation to obtain appropriate approvals from other concerned provincial, federal and municipal agencies. Nothing in this Certificate of Approval negates any regulatory requirement placed on the proponent. Where there is a conflict between conditions in this Certificate of Approval and a regulation, the requirement in the regulation shall take precedence. Approval from the Department of Environment and Climate Change shall be obtained prior to any significant change in the design, construction, installation, or operation of the Vale NL Long Harbour Processing Plant, including any future expansion of the Vale NL Long Harbour Processing Plant. This Certificate of Approval shall not be sold, assigned, transferred, leased, mortgaged, sublet or otherwise alienated by the proponent without obtaining prior approval from the Minister.

This Certificate of Approval is subject to the terms and conditions as contained therein, as may be revised from time to time by the Department. Failure to comply with any of the terms and conditions may render this Certificate of Approval null and void, may require the proponent to cease all activities associated with this Certificate of Approval, may place the proponent and its agent(s) in violation of the *Environmental Protection Act*, and will make the proponent responsible for taking such remedial measures as may be prescribed by the Department. The Department reserves the right to add, delete or modify conditions to correct errors in the Certificate of Approval or to address significant environmental or health concerns.

For

MINISTER

TERMS AND CONDITIONS FOR APPROVAL No. AA23-125701

December 21, 2023

General

1. This Certificate of Approval is for: operation of a process plant at the **Long Harbour Processing Plant (LHPP)** site as per the Operations Plans dated *January 2013*, submitted by **Vale Newfoundland & Labrador Limited (VNL)** for this Approval. Extensive future expansion or alteration of activities will require a separate Certificate of Approval.
2. Certificate of Approval AA20-065661 is revoked and replaced by this Approval.
3. Any inquiries concerning this Approval shall be directed to the St. John's office of the Pollution Prevention Division (telephone: (709) 729-2556; or facsimile: (709) 729-6969).
4. In this Certificate of Approval:
 - **accredited** means the formal recognition of the competence of a laboratory to carry out specific functions;
 - **acutely lethal**, in respect of an effluent, means that the effluent at 100 per cent concentration kills more than 50 per cent of the
 - a) rainbow trout subjected to it for a period of 96 hours, when tested in accordance with Reference Method EPS 1/RM/13; or
 - b) *Daphnia magna* subjected to it for a period of 48 hours, when tested in accordance with Reference Method EPS 1/RM/14;
 - **air contaminant** means any discharge, release, or other propagation into the air and includes dust, fumes, mist, smoke, particulate matter, vapours, gases, odorous substances, acids, soot, grime or any combination of them;
 - **ALT (acute lethality test)** means a test conducted to determine whether an effluent is acutely lethal;
 - **associated product** means petroleum or a derivative of it, except gasoline, which is in a liquid state at ambient temperature and pressure;
 - **CO** means carbon monoxide;
 - **CO₂** means carbon dioxide;
 - **composite sample** means a quantity of undiluted effluent collected continually at an equal rate or at a rate proportionate to flow over a designated sampling period;

- **Department** means the Department of Environment and Climate Change and its successors;
- **DGSNL** means Digital Government and Service NL and its successors;
- **DOC** means dissolved organic carbon;
- **EDMS** means Environmental Data Management System;
- **effluent discharge criteria** (EDC) means the maximum allowable levels for the parameters listed in Table 3;
- **grab sample** means a quantity of undiluted sample collected at any given time. In this Approval it refers to used oil and effluent;
- **hazardous waste** means a product, substance or organism that is intended for disposal or recycling, including storage prior to disposal or recycling, and that:
 - (a) is listed in Schedule III of the *Export and Import of Hazardous Waste Regulations under the Canadian Environmental Protection Act, 1999*;
 - (b) is included in any of Classes 2 to 6, and 8 and 9 of the *Transportation of Dangerous Goods Regulations* under the *Transportation of Dangerous Goods Act, 1992*; or
 - (c) exhibits a hazard classification of a gas, a flammable liquid, an oxidizer, or a substance that is dangerously reactive, toxic, infectious, corrosive or environmentally hazardous;
- **LHPP** means Long Harbour Processing Plant;
- **licensed** means has a Certificate of Approval issued by the Minister to conduct an activity;
- **malfunction** means any sudden, infrequent and not reasonably preventable failure of air pollution control equipment, wastewater treatment equipment, process equipment, or a process to operate in a normal or usual manner. Failures, caused in part by poor maintenance or careless operation, are not malfunctions;
- **MDMER** means the federal Metal and Diamond Mining Effluent Regulations;
- **Minister** means the Minister of the Department;
- **NO_x** means oxides of nitrogen;
- **NO₂** means nitrogen dioxide;
- **O₂** means oxygen;
- **oil separator** means a device used to separate and remove oily wastes from oil and water mixtures;

- **Plan** means the specific plan as identified in the section of this Approval within which it is used. For example, in the *Waste Management Plan* section it refers to the Waste Management Plan;
- **PM_{2.5}** means particulate matter with a diameter of 2.5 µm or less;
- **proficiency testing** means the use of inter-laboratory comparisons to determine the performance of individual laboratories for specific tests or measurements;
- **Province** means Province of Newfoundland and Labrador;
- **QA/QC** means Quality Assurance/Quality Control;
- **register(ed)**, in the context of:
 - storage tanks, means that information regarding the storage tank system has been submitted to a DGSNL office and a registration number has been assigned to the storage tank system;
 - dispersion modelling, registered means submitted to and approved by the Department in accordance with departmental policy and guidelines; and
 - environmental site assessment and impacted site management work, means approved by the Department in accordance with departmental policy and guidelines;
- **regulated substance** means a substance subject to discharge limit(s) under the *Environmental Control Water and Sewage Regulations, 2003* but excluding gasoline or associated products, used oil or used glycol;
- **Residue Storage Area (RSA)** means the area where tailings are held under water to prevent acidification and has been referred to as Sandy Pond in initial documentation;
- **Site Professional** means an individual who is registered with the Department to oversee environmental site assessment, remediation and contaminated site management work in Newfoundland and Labrador;
- **SO₂** means sulphur dioxide;
- **storage tank system** means a tank and all vent, fill and withdrawal piping associated with it installed in a fixed location and includes a temporary arrangement;
- **TDS** means total dissolved solids;
- **toxic pass** means a mortality rate of no more than 50 per cent during the ALT;
- **TPH** means total petroleum hydrocarbons, as measured by the Atlantic PIRI method;

- **TPM** means total particulate matter with diameters less than 100µm;
 - **TSS** means total suspended solids;
 - **used glycol** means glycol that, through use, storage or handling, can no longer be used for its original purpose;
 - **used oil** means oil that, through use, storage or handling, can no longer be used for its original purpose; and
 - **VNL** means Vale Newfoundland & Labrador Limited.
5. All necessary measures shall be taken to ensure compliance with all applicable acts, regulations, policies and guidance documents, including the following, or their successors:
- *Environmental Protection Act;*
 - *Water Resources Act;*
 - *Air Pollution Control Regulations, 2022;*
 - *Environmental Control Water and Sewage Regulations, 2003;*
 - *Halocarbon Regulations;*
 - *Storage and Handling of Gasoline and Associated Products Regulations, 2003;*
 - *Used Oil and Used Glycol Regulations;*
 - *Heating Oil Storage Tank System Regulations, 2003;*
 - *Ambient Air Monitoring Guidance Document;*
 - *Sampling of Water and Wastewater - Industrial Effluent Applications Guidance Document;*
 - *Accredited Laboratory Policy;*
 - *Effluent Schedule Determination Policy for Industries;*
 - *Compliance Determination Guidance Document;*
 - *Source Emission Testing Guidance Document;*
 - *Plume Dispersion Modelling Guidance Document; and*
 - *Guidance Document for the Management of Impacted Sites.*
- This Approval provides terms and conditions to satisfy various requirements of the above listed acts, regulations, policies and guidance documents. If it appears that any of the pertinent requirements of these acts, regulations, policies and guidance documents are not being met, then a further review of the works shall be conducted, and suitable pollution control measures may be required by the Minister.
6. All reasonable efforts shall be taken to minimize the impact of the operation on the environment. Such efforts include:
- minimizing the area disturbed by the operation,
 - minimizing air, water or soil pollution,
 - finding alternative uses, acceptable to the Department, for waste or rejected materials,

- removing equipment or structures when they no longer have further use, and
 - considering the requirement for the eventual rehabilitation of disturbed areas when planning the development of any area on the facility property.
7. VNL shall provide to the Department, within a reasonable time, any information, records, reports or access to data requested or specified by the Department.
 8. VNL shall keep all records or other documents required by this Approval at the **LHPP** location for a period of not less than three years, beginning the day they were made. These records shall be made available for review by officials of the Department or DGSNL when requested.
 9. Should VNL wish to deviate in any way from the terms and conditions of this Certificate of Approval, a written request detailing the proposed deviation shall be made to the Department. VNL shall comply with the most current terms and conditions until the Department has authorized otherwise. In the case of meeting a deadline requirement, the request shall be made at least 60 days ahead of the applicable date as specified in this Approval or elsewhere by the Department.

Activities Affecting Bodies of Water

10. Any work that must be performed in a body of water below the high water mark shall be carried out during a period of low water levels, unless otherwise permitted in writing by the Department.
11. All construction operations shall be carried out in a manner that minimizes damage to land, vegetation, and watercourses, and which prevents the discharge of substances, to bodies of water, in excess of applicable regulatory limits.
12. The use of heavy equipment shall be confined to dry stable areas and shall not be carried out in streams or bodies of water, unless otherwise permitted in writing by the Department.
13. All vehicles and equipment shall be in good repair, and shall be free of leaks of oil or other harmful substances that could impair water quality.
14. During the construction of concrete components, formwork shall be properly constructed to prevent any fresh concrete from entering a body of water. Dumping of concrete or washing of tools and equipment in any body of water is prohibited.
15. Waste hardened concrete shall not be disposed as unsuitable material at the project site. Waste hardened concrete shall be put to beneficial use on site as fill material, or it shall be sent to an approved waste disposal site.
16. All areas affected by this project shall be restored to a state that resembles local natural conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if necessary in the opinion of this Department.

17. VNL shall apply for and obtain a permit under Section 48 of the *Water Resources Act* for any work in or within 15 metres of a body of water (including wetlands) prior to the start of work.

Environmental Protection Plan

18. VNL shall implement the most recent version of the Environmental Protection Plan – Operation Phase (*January 2013*). Every year the Plan shall be reviewed and revised as necessary, accounting for expansion or alteration of activities. Any proposed significant revisions shall be submitted to the Department for review. Changes which are not considered significant include minor variations in equipment or personnel characteristics which do not affect the implementation of the Plan.

Pier Monitoring

19. Annually, marine water samples from the M-1 and M-2 sampling sites in Rattling Brook Cove, adjacent to the Long Harbour Pier, shall be analysed for elemental phosphorus. Analytical results shall be submitted as per the *Reporting* section.
20. Every two years, the pier shall be inspected for phosphorus leakage and structural integrity and a technical report submitted within three months to the Department for review. The next scheduled inspection is *2025*.

Waste Management

21. The management of waste generated at the facility is subject to compliance with the *Environmental Protection Act*. All non-industrial waste shall be stored in a manner acceptable to the Department and, on at least a weekly basis, be disposed of:
- at an authorized waste disposal site, with the permission of the owner/operator of the site; or
 - by some other means acceptable to the Department.

If required, industrial waste shall be disposed of by a licensed operator.

22. VNL shall ensure that all volatile chemical and solvent wastes, if they cannot be reused, are placed in suitable covered containers for disposal in a manner acceptable to the Department. Disposal of liquid wastes at waste disposal sites in the Province is not permitted.
23. Disposal of hazardous waste in a municipal or regional waste disposal site in this Province is prohibited. Transporters of hazardous waste shall have an Approval issued by the Minister. Those generating hazardous waste shall have a waste generator's number issued by the Department and shall also complete the required information outlined in the Waste Manifest Form.

Waste Management Plan

24. VNL shall continue to implement the Vale Long Harbour Processing Plant Waste Management Plan (*January 2013*) for the LHP, including all revisions. Every year the Plan shall be reviewed and revised as necessary, accounting for expansion or alteration of activities. Any proposed significant revisions shall be submitted to the Department for review. Changes which are not considered significant include minor variations in equipment or personnel characteristics which do not affect the implementation of the Plan.

Burning Prohibition

25. Materials listed in Table 1 shall not be burned in a fire, unless the burning of the material is recommended, in writing, by the Office of the Fire Commissioner or the burning occurs in combustion process equipment that has been approved, in writing, by the Department for that purpose.

Table 1 – Materials Prohibited from Burning in a Fire	
(a) tires	(k) manure
(b) plastics	(l) rubber
(c) treated lumber	(m) tar paper
(d) asphalt and asphalt products	(n) railway ties
(e) drywall	(o) paint and paint products
(f) demolition waste	(p) fuel and lubricant containers
(g) hazardous waste	(q) used oil
(h) biomedical waste	(r) animal cadavers
(i) domestic waste	(s) hazardous substances
(j) trash, garbage, or other waste from commercial, industrial or municipal operations	(t) materials disposed of as part of the removal or decontamination of equipment, buildings or other structures

26. The Department shall be notified prior to the burning of any materials not listed in Table 1.

Noise

27. Efforts shall be made to minimize and control noise resulting from the LHP's operations and maintenance activities. All vehicles operating within the facility shall have exhaust and muffling devices in good working order.

Dust Suppression

28. VNL shall control dusting resulting from construction and operational activities at the site. Use of dust suppressants other than water, calcium chloride, ENTAC or MINCRYL™ X50 shall require approval of the Department. VNL are encouraged to

use best management practices when applying calcium chloride or any other approved dust suppressant.

29. Dust control measures shall be conducted as specified in the Environmental Protection Plan – Operation Phase (*January 2013*).

Chemical Operations

30. Empty chemical drums, totes or packaging shall be either sent:
- back to the original equipment manufacturer for re-use;
 - to a recognized disposal company; or
 - to a recognized re-cycling facility.

When deemed necessary, waste material from drums, totes or packaging will be retained on-site for collection and disposal by a recognized waste treatment company according to provincial and federal regulations.

Spill and Leak Prevention and Containment

31. Areas in which chemicals are used or stored shall have spill and leak containment systems constructed with impermeable floors, walls, dykes or curbs as applicable and be configured, maintained, inspected and repaired as follows:
- they shall not discharge to the environment;
 - they shall have an effective secondary containment capacity of at least 110 per cent of the chemical storage tank capacity, in the case of a single storage container;
 - if there is more than one storage container, they shall have an effective secondary containment capacity of at least 110 per cent of the capacity of the largest container, or 100 per cent of the capacity of the largest container plus 10 per cent of the aggregate capacity of all additional containers, whichever is greater;
 - they shall be kept clear of material that may compromise the containment capacity;
 - they may include a floor drain system provided that the floor drains, and the place or device to which they drain, are configured in such a manner that the required effective secondary containment capacity is maintained;
 - every year they shall be visually inspected for their liquid containing integrity, and repairs shall be made when required; and
 - once every 10 years, spill and leak containment systems shall be inspected, by a means other than visual inspection, for their liquid containing integrity, and repairs shall be made when required.
32. All on site storage of petroleum shall comply with the *Storage and Handling of Gasoline and Associated Products Regulations, 2003*, or its successor. Storage tank

systems shall be registered with DGSNL.

33. Where applicable, all tanks and fuel delivery systems shall be inspected to appropriate American Petroleum Institute or Underwriters' Laboratories of Canada standards, or any other standards acceptable to this Department. The required frequency of inspections may be changed at the discretion of the Department.
34. VNL shall maintain an inventory of all petroleum and chemical storage tanks. This inventory shall include the following:
- site plan showing tank location;
 - registration number (where applicable);
 - identification number;
 - material stored;
 - capacity;
 - annual throughput;
 - tank material;
 - tank type;
 - tank diameter;
 - tank height;
 - tank colour;
 - roof type;
 - year of manufacture;
 - date of installation;
 - date of last inspection;
 - failure history;
 - maintenance history;
 - effective secondary containment capacity; and
 - date of next planned inspection.

An update of the complete storage tank inventory including any changes to it shall be submitted to the Department within three months of the change having occurred.

35. Refuelling and maintenance of vehicles and equipment shall, whenever possible, be undertaken on a prepared impermeable surface with a containment or collection system for spills or leaks of fluids (e.g. hydrocarbons, coolants and other associated fluids). When this is not possible, due care shall be taken to prevent spills or leaks on the ground and to the surrounding environment, particularly streams and other water bodies. The Emergency Response Plan for **LHPP** shall detail the specific response actions in the event of a spill or leak from refuelling or maintenance activities.
36. VNL shall continue to implement the Mobile Equipment Maintenance Program (**November 30, 2020**) for the prevention of leaks/spills of fluids (e.g. hydrocarbons, coolants and other associated fluids) from mobile equipment (i.e. from the hydraulic hoses and/or motors from the machine houses of JLGs, trucks and other equipment).

37. All oil separators shall be checked routinely to ensure they are working properly. A log of these checks shall be maintained by VNL.

Emergency Response (Contingency) Plan

38. VNL shall continue to implement the Emergency Response (Contingency) Plan (*August 27, 2020*) for the LHPP, including all revisions. The Plan describes the actions to be taken in the event of a spill or leak of a toxic or hazardous material. Copies of the Plan shall be placed in convenient areas throughout the facility so that employees can easily refer to it when needed. VNL shall ensure that all employees are aware of the Plan and understand the procedures and the reporting protocol to be followed in the event of an emergency. An annual response exercise is recommended for response personnel. Every year the Plan shall be reviewed and revised as necessary, accounting for expansion or alteration of activities. Any proposed significant revisions shall be submitted to the Department for review. Changes which are not considered significant include minor variations in equipment or personnel characteristics which do not affect the implementation of the Plan.
39. Every time VNL implements the Plan, information shall be recorded for future reference. This will assist in reviewing and updating the Plan. The record is to consist of all incidents with environmental implications, and include such details as:
- date;
 - time of day;
 - type of incident (i.e. liquid leak/spill, gas leak, granular chemical leak/spill, equipment malfunction, etc.);
 - actions taken;
 - problems encountered; and
 - other relevant information that would aid in later review of the Plan performance.

Each incident report shall be submitted to the Department as per the *Reporting* section.

Rehabilitation and Closure

40. A Rehabilitation and Closure Plan detailing the actions to be taken to restore areas disturbed by the operation has been submitted to the Department (*June 2023*). The Plan shall be implemented progressively as required and completed upon site closure.
41. As part of the site decommissioning and restoration process, VNL shall employ a registered Site Professional to complete a site-wide environmental site assessment, as defined in the *Guidance Document for the Management of Impacted Sites*. Should impacts be identified, VNL shall proceed through the process outlined in the Guidance Document to achieve regulatory site closure.

Financial Assurance

42. VNL are required to post sufficient financial assurance to enable complete remediation and restoration of the site in the event of circumstances that may prevent VNL from completing site rehabilitation and closure of the **LHPP**.
43. VNL has provided the Department with financial assurance in the form of Performance Bonds for the rehabilitation and closure of the **LHPP**. The assurance amount shall be reviewed at least once every five years by VNL and revised, as necessary, based on the cumulative estimates contained in the Rehabilitation and Closure Plan for the end of that year, offset by the cumulative progressive rehabilitation costs incurred up to the end of that year or augmented by additional cumulative rehabilitation costs that are identified or a combination of both factors, as applicable. If significant changes or expansions to the operation occur or if substantial implementation of the plan occurs then, by **January 31** of the following year, the assurance amount shall be reviewed by VNL and revised as necessary, based on the cumulative estimates contained in the Rehabilitation and Closure Plan for the end of that year, offset by the cumulative progressive rehabilitation costs incurred up to the end of that year or augmented by additional cumulative rehabilitation costs that are identified or a combination of both factors, as applicable.

Fuel

44. VNL shall maintain, and submit to the Department on a monthly basis as per the **Reporting** section, the following:
- supplier, date and volume of each shipment of distillate fuel oil received; and
 - daily volume of distillate fuel oil combusted.

Used Oil and Used Glycol

45. Used oil and used glycol shall not be mixed and shall be stored in separate:
- closed containers;
 - registered tanks; or
 - tanks that have an active Approval from DGSNL.
46. Where greater than 205 litres of used oil or used glycol is stored in one or more containers, the storage shall require approval from the Department or DGSNL.
47. Used oil and used glycol shall be disposed of by a company licensed for the handling and disposal of such products.
48. Information on used oil and used glycol that is generated at the facility each year shall be submitted to the Department, as per the **Reporting** section, by **January 31** of the following year for review. This shall include a description of the:
- type(s) of oil and/or glycol used;
 - approximate total volume of used oil and/or used glycol generated during the

- year; and
- method of disposal for the used oil and/or used glycol.

49. The use or operation of an oil separator requires registration under the ***Used Oil and Used Glycol Control Regulations***. Applications for registration shall be submitted to, and registration numbers are assigned by, DGSNL.

Effluent Monitoring and Discharge

50. VNL shall perform an Effluent Monitoring Program as per Table 2. Refer to Table 3 for the effluent discharge criteria. Analytical results shall be submitted to the Department as per the ***Reporting*** section.

Table 2 - Effluent Monitoring Program			
Sampling Site Location	EDMS Location Code	Parameters	Frequency
FDP1 Effluent Treatment Plant	00130	ALT and TPH	Monthly (at least 15 days apart)
		EDC (except ALT)	Weekly (at least 24 hours apart)
		Volume/Flow	Daily (when discharging)
FDP2 Lower Tier Storm Water Pond	00131	ALT, EDC and TPH	Per Discharge
		Volume/Flow	Daily (when discharging)
D2 Plant Site Diversion Ditch North Discharge	00132	EDC*	Monthly (at least 15 days apart)
D3 Plant Site Diversion Ditch South Discharge	00133	EDC*	Monthly (at least 15 days apart)
D5 Laydown Pad Storm Pond Discharge	00134	EDC*	Monthly (at least 15 days apart)
D21 Port Site Discharge 2: Lift Station Overflow	00145	EDC*	Monthly (at least 15 days apart)
D25 RSA Runoff Diversion Channel	00146	EDC*	Monthly (at least 15 days apart)
*Except ALT, Radium 226 and Un-ionized ammonia			

Table 3 - Effluent Discharge Criteria			
Parameter	Maximum Authorized Monthly Mean Concentration	Maximum Authorized Concentration in a Composite Sample	Maximum Authorized Concentration in a Grab Sample
Arsenic	0.30 mg/L	0.45 mg/L	0.60 mg/L
Copper	0.30 mg/L	0.45 mg/L	0.60 mg/L
Lead	0.10 mg/L	0.15 mg/L	0.20 mg/L
Nickel	0.50 mg/L	0.75 mg/L	1.00 mg/L
Zinc	0.50 mg/L	0.75 mg/L	1.00 mg/L
Total Suspended Solids	15.00 mg/L	22.50 mg/L	30.00 mg/L
Radium 226	0.37 Bq/L	0.74 Bq/L	1.11 Bq/L
Un-ionized ammonia	0.50 mg/L expressed as nitrogen (N)	Not applicable	1.00 mg/L expressed as nitrogen (N)
Acute Lethality	Toxic Pass		
pH	5.5 to 9 pH units		

51. **VNL** may reduce the frequency of testing for a parameter that is set out in Table 3 with the exception of pH, TSS, ALT and Radium 226, to not less than once in each calendar quarter, at least 30 days apart, if that parameter's monthly mean concentration in the effluent is less than 10 per cent of the maximum authorized monthly mean concentration for the 12 months immediately preceding the most recent test. **VNL** shall notify the Department in writing, at least 30 days in advance of a reduction in the frequency of testing.
52. **VNL** may reduce the frequency of testing for Radium 226 to not less than once in each calendar quarter, at least 30 days apart, if that substance's concentration in the effluent is less than 0.037Bq/L in 10 consecutive tests. **VNL** shall notify the Department in writing, at least 30 days in advance of a reduction in the frequency of testing.
53. **VNL** shall increase the frequency of testing to the originally prescribed frequency for a parameter that is set out in Table 3 with the exception of pH, TSS and ALT, if the parameter's monthly mean concentration is equal to or greater than 10 per cent of the maximum authorized monthly mean concentration.
54. **VNL** may reduce the frequency of conducting ALTs to once in each calendar quarter, at least 30 days apart, if the effluent is determined not to be acutely lethal over a period of 12 consecutive months. **VNL** shall notify the Department in writing, at least 30 days in advance of a reduction in the frequency of testing.
55. If a sample is determined to be acutely lethal, an aliquot of the failing sample shall be analyzed for the parameters outlined in Table 4 without delay.
56. If a sample is determined to be acutely lethal, **VNL** shall collect a grab sample twice per month, not less than seven days apart, from the final discharge point of the

failing site. An ALT, in accordance with Section 6 of the Reference Method, shall be conducted on each sample, until it is determined that the effluent is not acutely lethal for three consecutive tests. At that point, ALTs may resume at the original prescribed frequency outlined in Table 2.

57. If effluent is determined to be acutely lethal for three consecutive ALTs, VNL shall implement a Toxicity Identification Evaluation to identify the toxin, and from this develop measures to prevent or reduce the toxin. The report, written as a result of these identification activities, shall be submitted to the Department for review, *within 60 days* of the third consecutive failed ALT result. After review of the report, the Department may place additional requirements upon VNL for treatment of effluent prior to discharge
58. Reports submitted under the section 31 of MDMER as a result of a deposit out of the normal course of events shall be provided to the Department.

Water Chemistry Analysis

59. Four times per calendar year and not less than 30 days apart, VNL shall perform a Water Chemistry Analysis as per Table 4. Analytical results shall be submitted as per the **Reporting** section.

Table 4 – Water Chemistry Analysis Program		
Sampling Site Location	EDMS Location Code	Parameters
SW0 Real-Time Monitoring Station Rattling Brook South	00147	General Parameters: Temperature*, dissolved oxygen (DO*), nitrate + nitrite, nitrate, nitrite, pH, TSS*, colour, sodium, potassium, calcium, sulphide, magnesium, ammonia, alkalinity, sulphate, chloride, turbidity, reactive silica, orthophosphate, phosphorous, DOC, conductance, TDS (calculated), phenolics, carbonate (CaCO ₃), hardness (CaCO ₃), bicarbonate (CaCO ₃) Metals Scan: aluminum, antimony, arsenic, barium, beryllium, bismuth, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, mercury, nickel, selenium, silver, strontium, thallium, tin, titanium, uranium, vanadium, zinc
SW1 Real-Time Monitoring Station Rattling Brook North	00148	
SW5 Real-Time Monitoring Station at Permanent Water Supply Intake on Rattling Brook Big Pond	00152	
SW7 Residue Storage Area (near Decant Intake)	00153	
SW8 Sandy Pond Brook (near EPCM and Long Harbour)	00154	
SW9 Dam #2 Seepage Collection Pond	00712	
LTMW-001-2008 Port Site Monitoring Well	00155	
LTMW-012-2008 Port Site Monitoring Well	00156	

LTMW-014-2008 Port Site Monitoring Well	00157	
MW-06-019 Port Site Monitoring Well	00158	
MW-12-009 Port Site Monitoring Well	00159	
MW-12-010 Port Site Monitoring Well	00160	
MW-12-011 Port Site Monitoring Well	00161	
MW-12-012 Port Site Monitoring Well	00162	
MW-12-013 Port Site Monitoring Well	00163	
MW-06-003 Plant Site Monitoring Well NW	00164	
MW-06-004 Plant Site Monitoring Well NW	00165	
MW-06-007(S) Plant Site Monitoring Well SE	00166	
MW-06-007(D) Plant Site Monitoring Well SE	00167	
MW-12-001(S) Residue Storage Area NW	00172	
MW-12-001(D) Residue Storage Area NW	00173	
MW-12-002(S) Residue Storage Area N	00174	
MW-12-002(D) Residue Storage Area N	00175	
MW-12-003(S) Residue Storage Area NE	00176	
MW-12-003(D) Residue Storage Area NE	00177	
MW-12-004(S) Residue Storage Area W	00178	
MW-12-004(D) Residue Storage Area W	00179	
MW-12-005(S) Residue Storage Area SW	00180	
MW-12-005(D) Residue Storage Area SW	00181	
MW-12-006(S) Residue Storage Area S	00182	
MW-12-006(D) Residue Storage Area S	00183	
MW-12-007(S) Residue Storage Area SE	00184	
MW-12-007(D) Residue Storage Area SE	00185	

MW-12-008(S) Residue Storage Area E	00186	
MW-12-008(D) Residue Storage Area E	00187	
LH-Ref 1 Lower Seal Cove	00188	
LH-Ref 2 Crawley's Island	00189	
LH-Exp 1 Off Shore	00190	
LH-Exp 2 At Shore	00191	
FDP1 Effluent Treatment Plant	00130	
FDP2 Effluent Treatment Plant	00131	
* TSS, DO and Temperature are not required to be measured for groundwater samples.		

60. VNL may discontinue testing for mercury if the mercury concentration in the effluent is less than 0.10 µg/L in 12 consecutive quarterly samples. VNL shall notify the Department in writing, at least 30 days in advance, of a reduction in the frequency of testing.

Environmental Effects Monitoring

61. MDMER requires that VNL conduct Environmental Effects Monitoring (EEM) as part of the LHPP's authority to deposit effluent under the Fisheries Act. Copies of all EEM study designs and reports shall be submitted to the Department.

Ambient Air

62. VNL shall operate an ambient air monitoring program as per the conditions in this Approval and its amendments. Approval shall be obtained from the Department prior to purchase, installation or relocation of any monitoring equipment.
63. Parameters to be monitored and the monitoring locations are outlined in Table 5.

Table 5 - Ambient Air Monitoring Program					
Location	EDMS Location Code	Easting*	Northing*	Number of Monitors	Parameters
AM-1	00192	287 301	5 256 843	2	NO _x , PM _{2.5}
AM-3	00194	288 985	5 257 067	2	NO _x , PM _{2.5}
*Coordinates in metres referenced to NAD83 UTM Zone 22					

64. Ambient air monitoring shall be done in accordance with the *Ambient Air Monitoring Guidance Document (GD-PPD-065)*, or its successors.

65. VNL shall operate, calibrate and maintain a meteorological station at the AM-1 site in the community of Long Harbour in accordance with the guidelines specified in the United States EPA document “Quality Assurance Handbook for Air Pollution Measurement Systems - Volume IV: Meteorological Measurements Version 2.0 (Final),” EPA-454/B-08-002, or its successors. Parameters to be measured and recorded shall include, as a minimum:
- wind speed;
 - wind direction;
 - ambient air temperature;
 - relative humidity;
 - barometric pressure; and
 - precipitation.

All records shall be made available to the Department upon request.

66. Information regarding calibrations, site visits and maintenance for all continuous ambient air monitors shall be recorded into the DR DAS electronic logbook.
67. The air quality standards specified in Schedule A of the *Air Pollution Control Regulations, 2022* shall apply to all points outside of VNL’s administrative boundary. The administrative boundary is defined as the area encompassed by the coordinates contained in Appendix A, a total area of approximately 7.705 km². All coordinates are referenced to NAD83 UTM Zone 22.

Annual Air Emission Reporting

68. VNL shall submit an annual Air Emission Report to the Department, as per the *Reporting* section, by *June 1* of the subsequent year. This report shall:
- include air emissions from, as a minimum, Baghouses, Dust collectors, Boilers, Scrubber stacks, Electrowinning stacks, Vent stacks and various other stacks (LRT and CCD, Neutralization and Cadmium Removal, etc.);
 - include the estimated annual emissions, as applicable, of the following air pollutants:
SO₂, NO₂, NO_x, CO₂, CO, TPM, and PM_{2.5}; and
 - provide the calculations including factors, formulae and/or assumptions used.

Pollution Control Equipment

69. All pollution control equipment shall be maintained and operated per the manufacturer’s specifications for best performance.

Source Emission Testing and Plume Dispersion Modelling

70. Source emission testing shall be done in accordance with the *Source Emission Testing Guidance Document (GD-PPD-016.2)*. Plume dispersion modelling shall be done in

accordance with the **Plume Dispersion Modelling Guidance Document (GD-PPD-019.2)**. Determination of frequency of source emission testing and plume dispersion modelling shall be done in accordance with the **Compliance Determination Guidance Document (GD-PPD-009.4)**.

71. VNL shall be required to complete source emission testing once every four years if it has been shown, via a registered plume dispersion model, that the operation is in compliance with section 3(2) and Schedule A of the **Air Pollution Control Regulations, 2022**. If it has been shown, via a registered plume dispersion model, that the operation is not in compliance with section 3(2) and Schedule A of the **Air Pollution Control Regulations, 2022**, then the facility shall complete source emission testing every two years.
72. Source emission testing results shall be submitted to the Department within **120 days** of completion of the sampling.
73. Plume dispersion modelling results shall be submitted to the Department within **120 days** of approval of the source emission testing results by the Department.
74. If the results from the plume dispersion modelling indicate that VNL is not in compliance with section 3(2) and Schedule A of the **Air Pollution Control Regulations, 2022**, then VNL shall submit to the Department, within six months from the date of submission of plume dispersion modelling results, an Action Plan to bring emissions of the parameters of concern into compliance. In addition to this, the Plan shall include information detailing the improvements to be implemented to the LHPP's equipment and instruments, and a time frame for the improvements. By **December 31** of each year, a report shall be submitted to the Department outlining the progress made to date towards accomplishing the goals of the Plan.

Analysis and QA/QC

75. Unless otherwise stated herein, all solids and liquids analysis performed pursuant to this Approval shall be done by either a contracted commercial laboratory or an in-house laboratory. Contracted commercial laboratories shall have a recognized form of accreditation. In-house laboratories have the option of either obtaining accreditation or submitting to an annual inspection by a representative of the Department, for which VNL shall be billed for each laboratory inspection in accordance with Schedule 1 of the **Accredited Laboratory Policy (PD:PP2001-01.2)**. Recommendations of the Department stemming from an annual inspection shall be addressed within six months, otherwise further analytical results shall not be accepted by the Department.
76. If VNL wishes to perform in-house laboratory testing and submit to an annual inspection by the Department then a recognized form of proficiency testing recognition shall be obtained for compliance parameters for which this recognition exists. The compliance parameters are listed in the **Effluent Monitoring and Discharge** section. If using a commercial laboratory, VNL shall contact that commercial laboratory to determine and to implement the sampling and transportation QA/QC requirements for those activities.

77. The exact location of each sampling point shall remain consistent over the life of the monitoring programs, unless otherwise approved by the Department.
78. VNL shall bear all expenses incurred in carrying out the environmental monitoring and analysis required under conditions of this Approval.

Monitoring Alteration

79. The Department has the authority to alter monitoring programs or require additional testing at any time when:
- pollutants might be released to the surrounding environment without being detected;
 - an adverse environmental effect may occur; or
 - it is no longer necessary to maintain the current frequency of sampling and/or the monitoring of parameters.
80. VNL may, at any time, request that monitoring programs or requirements of this Approval be altered by:
- requesting the change in writing to the Department; and
 - providing sufficient justification, as determined by the Department.

The requirements of this Approval shall remain in effect until altered, in writing, by the Department.

Reporting

81. Monthly reports containing the environmental compliance monitoring and sampling information required in this Approval shall be received by the Department in digital format within 30 calendar days of the reporting month. All related laboratory reports shall be submitted with the monthly report in Extensible Markup Language (XML) format and Adobe Portable Document Format (PDF). Digital report submissions shall be uploaded through the EDMS web portal.
82. Each monthly report shall include a summary of all environmental monitoring components and shall include an explanation for the omission of any requisite data. The monthly summary reports shall be in Microsoft Word or Adobe PDF and shall be uploaded through the EDMS web portal with the data submissions.
83. Annual reports required in this Approval shall be in Microsoft Word or Adobe PDF and shall be uploaded through the EDMS web portal.
84. All incidents of:
- *Emergency Response (Contingency) Plan* implementation; or
 - non-conformance of any condition within this Approval; or
 - an uncontrolled release to the environment of any amount of a regulated

- substance; or
- effluent discharge criteria being, or suspected of being, exceeded; or
- verbal or written complaints of an environmental nature received from the public by **VNL** and related to the **LHPP**, including complaints submitted anonymously;

shall be immediately reported, within one working day, to the Department.

A written comprehensive incident report, including a detailed description of the incident, a summary of contributing factors, and an Action Plan to prevent future incidents of a similar nature, shall be prepared. The report shall include a description of actions already taken and future actions to be implemented, and shall be submitted to the Department within 30 days of the date of the initial incident.

85. Any:

- spill of gasoline or associated product in excess of 70 litres from a storage tank system, pipeline, or vehicle; or
- leak of gasoline or associated product in any amount from a storage tank system, pipeline, tank car or tank vehicle; or
- spill of used oil or used glycol in excess of 70 litres from a storage tank system; or
- leak of used oil or used glycol in any amount from a storage tank system;

that is released to the environment shall be reported immediately through the Environmental Emergencies 24-hour report line at 1-800-563-9089.

Community Liaison Committee

86. The Department recognizes the benefits, and at times the necessity, of accurate, unbiased communication between the public and industrial operations which have an impact on the properties and residents in the area. **VNL** shall continue their Community Liaison Committee (CLC) meetings on a quarterly basis as currently scheduled. Regular meetings of the CLC will provide a clear conduit of communication between concerned citizens and **VNL**. Copies of Minutes of such meetings shall be provided to the Department in accordance with the CLC's Terms of Reference (TOR). Copies of any materials presented or presentations made during such meetings shall be provided to the Department no later than 30 days after the meeting.

87. **VNL** was required, as a condition of environmental release from further environmental assessment, to convene a CLC following suitable TOR. The CLC may propose amendments to the TOR to the Department for review and authorization. Until any proposed change in the CLC's TOR is authorized, in writing, by the Department, the then existing TOR shall be followed.

Expiration

88. This Certificate of Approval expires *December 21, 2028*.
89. Should **VNL** wish to continue to operate the **LHPP** beyond this expiry date, a written request shall be submitted to the Department for the renewal of this Approval. Such request shall be made prior to *June 21, 2028*.

Appendix A

VNL Long Harbour Administrative Boundary Coordinates

Easting	Northing
289832.830	5254697.676
289337.414	5254308.559
289327.618	5254282.758
288988.903	5253643.951
288941.974	5253610.298
288686.015	5253499.623
288658.978	5253540.201
288376.544	5253852.144
288387.469	5253706.897
288348.826	5253708.985
288294.809	5253675.977
286694.260	5253097.801
286341.216	5253402.686
286463.796	5254402.227
286151.018	5254970.755
286227.521	5255001.570
286380.670	5255116.127
286462.292	5255148.496
286573.205	5255248.276
286678.561	5255397.332
286738.660	5255427.317
286800.957	5255435.213
286857.557	5255483.314
286880.566	5255490.240
286915.323	5255525.377
286934.008	5255528.690
287023.767	5255523.511
287074.400	5255557.223
287128.321	5255576.974
287197.897	5255635.914
287323.466	5255680.612
287373.334	5255681.261
287418.304	5255679.428
287464.469	5255735.974
287519.360	5255766.021
287310.756	5255950.328
286598.082	5255561.688
286525.581	5255695.253
287016.962	5255965.525
286941.015	5256082.328
287491.025	5256454.160
287473.784	5256416.692
287740.079	5256032.772
287867.585	5255795.435
288545.320	5256576.787
288630.491	5256641.112
289832.830	5254697.676

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