



Newfoundland Labrador

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: *April 28, 2022*

Approval No. AA22-045668

Expiration: *April 28, 2027*

File No. 745.143.2

Proponent: **Braya Renewable Fuels (Newfoundland) LP**
P.O. Box 40, 1 Refinery Road,
Come By Chance, Newfoundland
A0B 1N0

Attention: **Mr. Bruce Avery, Chief Financial Officer**

Re: **Renewable Fuel Refinery**

Approval is hereby given for the operation of a renewable fuel refinery near Come By Chance, Newfoundland and Labrador.

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 condition 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 renewable fuel refinery, including any future expansion of the renewable fuel refinery operations. 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.



Derek Pitt
For MINISTER

TERMS AND CONDITIONS FOR APPROVAL No. AA22-045668

April 28, 2022

General

1. This Certificate of Approval is for the operation of a 20,000 barrels per day of renewable fuel refinery including processing units, heaters, boilers and storage tanks as outlined in Table 1, located at Come By Chance, Newfoundland and Labrador, as per plans and specifications supplied by Braya Renewable Fuels (Newfoundland) LP for this Certificate of Approval. Extensive future expansion or change of activities will require a separate Certificate of Approval.

Table 1

| PROCESSING UNITS | HEATERS | BOILERS | STORAGE TANKS |
|---------------------------------|--|---------|---------------|
| Hydrodeoxygenation (Unit # 13) | H-1303/1304 | S-3401 | Tank 217 |
| Hydrogen Plant (Unit # 19) | H-1601 | S-3402 | Tank 219 |
| Hydro-Isomerization (Unit # 16) | H-1603 | S-3403 | Tank 245 |
| Sour Water Stripper (Unit # 13) | H-1901 | | Tank 246 |
| Amine Treating (Unit # 20) | | | Tank 343 |
| Flare (Unit # 63) | H-1301/1302 (Intermittent or Warm Standby) | | Tank 344 |
| | | | Tank 640 |
| | | | Tank 641 |
| | | | Tank 6601 |

2. Braya Renewable Fuels (Newfoundland) LP shall only use processed tallow and other biomass oil as a feedstock to produce renewable fuel. Refining or processing of petroleum or derivatives of petroleum is not permitted under this Certificate of 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;
 - **administrative boundary** means the boundary surrounding the Thermal Generating Station outside of which the ambient air quality standards, outlined in Schedule A of the *Air Pollution Control Regulations, 2022*, apply;
 - **air contaminant** means any discharge, release, or other propagation into the air and includes, but is not limited to, dust, fumes, mist, smoke, particulate matter, vapours, gases, odours, odorous substances, acids, soot, grime or any combination of them;

- **Braya** means Braya Renewable Fuels (Newfoundland) LP;
- **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;
- **effluent discharge criteria (EDC)** means the maximum allowable levels for the parameters listed in Table 4;
- **EDMS** means Environmental Data Management System;
- **feedstock** means canola oil, soy oil, corn oil, rapeseed oil, palm oil, used cooking oil or processed tallow;
- **flaring** means controlled burning carried out during processing and production. Fuel and or waste gas is ignited at the end of the flare stack;
- **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;
- **leak or leakage** means any discharge of gasoline or associated product from a storage tank system, pipeline, tank vessel, tank car or tank vehicle, other than through the usual function for which the storage tank system, pipeline, tank vessel, tank car or tank vehicle was designed;
- **licensed** means has a Certificate of Approval issued by the Minister to conduct an activity;
- **liquid waste** is defined by the *Slump Test* (Canadian Standards Association test method A23.2-5C for determining the slump of concrete). The liquid waste slump test involves placing the waste in a 30 cm open inverted cone. The cone is removed and the immediate decrease (slump) in height of the waste material is measured. If the material slumps such that the original height is reduced by 15 cm or more, the waste is considered liquid;
- **malfuction** 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;

- **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;
- **PM₁₀** means particulate matter with a diameter of 10 µm or less;
- **PM_{2.5}** means particulate matter with a diameter of 2.5 µm or less;
- **process tallow** means tallow have gone through a rendering process and is free of contaminants;
- **produced water** means water that is produced as a by-product of the renewable diesel reaction mechanism and may contain low levels of sulphides;
- **proficiency testing** means the use of inter-laboratory comparisons to determine the performance of individual laboratories for specific tests or measurements;
- **product** means renewable diesel, renewable naphtha and sustainable aviation fuel;
- **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. In the context of dispersion modelling, registered means submitted to and approved by the Department in accordance with Departmental policy and guidelines. In the context of environmental site assessment and impacted site management work, registered 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*;
- **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;
- **sour water** means water that has been used in the refining process for the removal of sulphur and ammonia compounds and reports to the sour water stripper;
- **spill or spillage** means a loss of gasoline or associated product and renewable fuel refinery product and feedstock in excess of 70 litres from a storage tank system, pipeline, tank vessel or vehicle, or an uncontrolled release of any volume of a regulated substance onto or into soil or a body of water;
- **stack** means a chimney, flue, conduit or duct arranged to conduct an air contaminant into the environment;
- **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;
- **TPH** means total petroleum hydrocarbons, as measured by the Atlantic PIRI method;
- **TSS** means total suspended solids;
- **used glycol** means glycol that, through use, storage or handling, can no longer be used for its original purpose; and
- **used oil** means oil that, through use, storage or handling, can no longer be used for its original purpose.

5. All necessary measures shall be taken to ensure compliance with all applicable acts, regulations, policies, guidance documents and guidelines, 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 Control Regulations;*
- *Heating Oil Storage Tank System Regulations, 2003;*
- *Storage of PCB Waste Regulations, 2003;*
- *Sampling of Water and Wastewater - Industrial Effluent Applications Guidance Document;*

- *Accredited Laboratory Policy;*
- *Compliance Determination Guidance Document;*
- *Effluent Discharge Schedule Determination Policy for Industries;*
- *Stack Emission Testing Guidance Document;*
- *Plume Dispersion Modelling Guidance Document;*
- *Guidance Document for the Management of Impacted Sites;*
- *Precipitation Drainage of Dyke Areas Guidance Document;* and
- *Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Above Ground Storage Tanks.*

This Approval provides terms and conditions to satisfy various requirements of the above listed acts, regulations, Departmental policies, guidance documents and guidelines. If it appears that any of the pertinent requirements of these acts, regulations, policies, guidance documents and guidelines 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. Braya shall provide to the Department, within a reasonable time, any information, records, reports or access to data requested or specified by the Department.
8. Braya shall keep all records or other documents required by this Approval at the renewable fuel refinery for a period of not less than three (3) 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 Braya 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 Minister. Braya shall comply with the most current terms and conditions until the Minister 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.

Waste Management

10. 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, at least on a basis of every two (2) weeks, 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.

11. Braya shall ensure that all volatile chemical and solvent wastes, if they can not 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.
12. 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 generators number issued by the Department and shall also complete the required information outlined in the Waste Manifest Form.

Waste Management Plan

13. Braya shall submit an updated Waste Management Plan for the operation of the renewable fuel refinery. With the goal of minimizing adverse effects on the environment, the Plan shall:
 - be comprehensive, including all operations within the renewable fuel refinery;
 - identify the types of waste materials (i.e. boiler ash, sewage, tank bottom sludge, empty chemical packaging, etc.);
 - provide general direction in dealing with the handling, storage, transport, treatment and disposal of waste materials; and
 - incorporate the basic waste management principles of reduce, reuse, recycle, recover and residual disposal.

An outline of the Plan shall be submitted to the Department for review by *August 31, 2022*. The outline shall include a schedule of dates for preparation and implementation for each section of the Plan. The completed Plan shall then be submitted to the Department for review by *December 31, 2022*. Every year the Plan shall be reviewed and revised as necessary, accounting for expanding or alteration of activities. All proposed revisions shall be submitted to the Department for review. The Department will acknowledge receipt of the Plan and/or revisions, and shall provide any review comments within a reasonable time frame.

Wastewater Treatment System

14. Braya shall ensure that all components of the wastewater treatment system are operated and maintained in such a way that the emission of VOCs and odours is at a minimum.
15. Braya shall maintain the impounding basin in such a way that emergency containment capacity of 900,000 barrels is available at all times to handle a tank failure.
16. Braya shall make best efforts to prevent the discharge of petroleum products, renewable fuel refinery products and feedstock or other liquids to the impounding basin. Intentional discharges to the impounding basin must be approved by the Department.
17. Wasted bacteriological culture may be discharged from wastewater treatment plant

to the impounding basin.

18. Braya shall ensure that any free petroleum products, renewable fuel refinery products and feedstock or other liquid discharged or spilled to the impounding basin is recovered within a reasonable period of time. The reasonable period of time shall be determined by the Department based on the circumstances at the time of the discharge or spill.
19. Discharge of sludge to the impounding basin, twenty-four (24) hour basin, primary basin or final holding basin shall not be permitted, unless otherwise approved by the Department.
20. Malfunctions, unplanned shutdowns, emergency diversion or failure of any wastewater treatment system equipment shall be reported to the Department as soon as possible, but not later than the end of the next working day. A summary of these shall be noted in the monthly report detailing the reason(s), duration of malfunction or diversion, volume and composition of material diverted and any corrective actions taken to remedy the problem.
21. Braya shall ensure that all the wastewater leaving the API oil separator is sent to the equalization system prior to its introduction into the wastewater treatment plant, or shall take such other actions as are necessary or effective to achieve equalization of wastewater.
22. No discharges bypassing the control works is authorized, unless prior approval has been obtained from the Department. In the event of an emergency, bypassing shall be only permitted to affect a safe and orderly shutdown of the related process.
23. The impounding basin may be used for the purpose of equalization of effluent, provided that this use does not contribute to odours and the 900,000 barrels of emergency storage capacity is maintained in the basin.
24. Braya shall ensure that the sludge in the impounding basin is not a source of odour.
25. Braya shall skim any oil from the impounding basin on a regular basis.

Sour/Produced Water Storage and Handling

26. All sour water streams shall be routed or reported to the sour water stripper for treatment prior to transfer to the wastewater treatment plant. The stream shall then be treated at the wastewater treatment plant to meet the existing water quality criteria before being discharged from the facility.
27. All produced water shall be routed to the wastewater treatment plant to meet the existing water quality criteria before discharged from the facility.
28. All sour water shall be handled, stored, and transferred in a closed system.
29. Air stripping of sour water resulting in the discharge of hydrogen sulphide to the atmosphere is not permitted.

Pressure Safety Valve

30. New pressure relief or pressure safety valve installations in renewable oil production services shall not discharge directly to the atmosphere. This requirement excludes repairs and replacements of existing pressure relief or pressure safety valves.

Flare Stack

31. The John Zink smokeless emergency flare stack (Unit # 63) shall be operated in accordance with common industry practice at all times when the renewable fuel refinery is operating. Operation shall consider the elements of API 537 "Flare Details for General Refinery and Petrochemical Service".

32. Braya shall maintain a log of flaring. The log must include information on complaints related to odour and how these complaints were investigated.

33. The log shall also include the rates and volume of gas source and type (e.g. sour inlet gas, acid gas etc.) to the flare.

34. The logs shall be kept for a minimum of three (3) years and shall be made available to the Department upon request.

Temporary Holding/Storage Site

35. To avoid any potential contamination of the area around the temporary holding/storage site (formerly fire-fighting training facility) a fully sealed liquid tight curb of minimum effective height of fifteen (15) centimeters shall be maintained around the perimeter of the concrete pad. The curb may be ramped to facilitate the safe entry and exit of personnel and equipment. The curbing and pad shall be inspected and maintained on a regular basis to avoid problems associated with spalling, frost heave, cracking or any other damage that may result in leakage from the pad.

36. Liquid runoff from the temporary holding/storage site shall be directed to an oil separator and subsequently transferred to the wastewater treatment plant. Temporary holding/storage site drainage shall be facilitated by a fifteen (15) centimeter drain line to the oil separator. The drain line shall be valved with the valve maintained in the closed position when the temporary holding/storage site is not in use.

37. All oil separators shall be checked routinely and maintained in accordance with the manufacturer's instructions to ensure they are working properly. A log of these checks shall be maintained.

Open Burning

38. Materials listed in Table 2 shall not be burnt in open fires.

Table 2: Material Not Approved for Open Burning

| | |
|--|---|
| tires and plastics | manure and rubber |
| treated lumber | tar paper |
| asphalt and asphalt products | railway ties |
| drywall | paint and paint products |
| demolition waste | fuel and lubricant containers |
| hazardous waste | used oil |
| biomedical waste | animal cadavers |
| domestic waste | hazardous substances |
| trash, garbage, or other waste from commercial, industrial or municipal operations | materials disposed of as part of the removal or decontamination of equipment, buildings or other structures |

39. The Department shall be notified prior to the burning of any materials not listed in Table 2.

Noise

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

Dust Suppression

41. Braya shall control dusting resulting from construction and operational activities at the site. Use of dust suppressants other than water or calcium chloride shall require approval of the Department. Braya is encouraged to use best management practices when applying calcium chloride or any other approved dust suppressant.

Spill Prevention and Containment

42. Areas in which chemicals are used or stored shall have spill 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% 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% of the capacity of the largest container, or 100 % of the capacity of the largest container plus 10% 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 ten years, spill containment systems shall be inspected, by a means other than visual inspection, for their liquid containing integrity, and repairs shall be made when required.

43. All new and existing storage tanks shall comply with the conditions specified in the CCME guidelines *“Environmental Guidelines for Controlling Emissions of Volatile Organic Compounds from Aboveground Storage Tanks, PN 1180”* or its successor.

44. 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.

45. Braya shall implement the API Standard 653, *“Tank Inspection, Repair, Alteration and Reconstruction”* in accordance with common industry practice.

46. Braya shall submit an inventory of all product, feedstock and chemical storage tanks to the Department for review by *November 30, 2022*. This inventory shall include the following information:

- site plan showing tank location,
- storage tank system photos, including manufacturer's labels,
- 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 (3) months of the change having occurred.

Contingency Plan

47. A Contingency Plan for the operation of the renewable fuel refinery shall be submitted to the Department for review by *November 30, 2022*. The Plan shall clearly describe the actions to be taken in the event of a spill of a toxic or hazardous material. It shall include, as a minimum: notification and alerting procedures; duties and responsibilities of the “on-scene commander” and other involved staff; spill control and clean-up procedures; restoration of the spill site; information on disposal

of contaminants; and resource inventory. Copies of the Plan shall be placed in convenient areas throughout the facility so that employees can easily refer to it when needed. Braya 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, as a minimum, the Plan shall be reviewed and revised as necessary. 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 effect implementation of the Plan.

48. Every time Braya implements the Contingency 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 spill, gas leak, granular chemical 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.

Decommissioning and Restoration

49. Braya shall submit a site Decommissioning and Restoration Plan for all the tanks, equipment, infrastructure and land under their ownership to the Department by *April 30, 2024*. For guidance on the preparation of the Plan, refer to Appendix A. Wherever possible, the Plan shall promote progressive reclamation of disturbed areas.

50. As part of the site decommissioning and restoration process, Braya 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, Braya shall proceed through the process outlined in the Guidance Document to achieve regulatory site closure.

Used Oil and Used Glycol

51. 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.

52. 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.

53. Used oil and used glycol shall be disposed of by a company licensed for the handling

and disposal of such products.

54. Information on used oil and used glycol that is generated at the facility shall be submitted to the Department for review by *January 31* of each year. This shall include a description of:

- the type(s) of oil and/or glycol used;
- the approximate total volume of used oil and/or used glycol generated during the previous year; and
- the method of disposal for the used oil and/or used glycol.

55. In the event that used oil and/or used glycol generated off-site is stored in the on-site storage tank(s), the information listed above shall also be required for the off-site systems.

56. 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

57. Braya is only permitted to discharge renewable fuel refinery effluent into Placentia Bay via the wastewater treatment system discharge channel under the terms and conditions as outlined in this Approval. All piping transporting effluent shall be maintained in such a way that there is no leakage, spillage, seepage or other releases to the environment, except at the point where effluent is normally discharged.

58. Braya shall perform an Effluent Monitoring Program as per Table 3. Refer to Table 4 for the Effluent Discharge Criteria (EDC) and Table 5 for the Water Chemistry Analysis (WCA). Analytical results shall be submitted to the Department as per the *Reporting* section.

Table 3: Effluent Monitoring Program

| EDMS Location Code | Location | Parameters | Frequency |
|--------------------|----------------|------------|--|
| 00838 | Outfall to Sea | pH | Daily (24-hour composite) |
| | | Flow | Continuously |
| | | TSS | 3 times per week (24-hour Composite) |
| | | Phenol | |
| | | Sulphide | |
| | | Ammonia | |
| | | TPH | |
| | | EDC | Monthly Grab |
| | | WCA | Four times per year at least 30 days apart |

Table 4: Effluent Discharge Criteria

| Parameter | Allowable Limits |
|--|---------------------|
| Arsenic | 0.5 mg/L |
| Barium | 5.0 mg/L |
| BOD | 20 mg/L |
| Boron | 5.0 mg/L |
| Cadmium | 0.05 mg/L |
| Chromium | 1.0 mg/L |
| Copper | 0.3 mg/L |
| Cyanide | 0.025 mg/L |
| Iron | 10 mg/L |
| Lead | 0.2 mg/L |
| Mercury | 0.005 mg/L |
| Nickel | 0.5 mg/L |
| Nitrates | 10 mg/L |
| Nitrogen (ammoniacal) | 2.0 mg/L |
| pH | 5.5 to 9.0 pH units |
| Phenol | 0.1 mg/L |
| Phosphates (total as P ₂ O ₅) | 1.0 mg/L |
| Selenium | 0.01 mg/L |
| Silver | 0.05 mg/L |
| Sulfides | 0.5 mg/L |
| TDS | 1000 mg/L |
| TPH | 15 mg/L |
| TSS | 30 mg/L |
| Zinc | 0.5 mg/L |

Table 5: Water Chemistry Analysis (WCA) Program

| Parameters | | | | | |
|---|---|--|--|--|--|
| General Parameters - must include the following: | | | | | |
| nitrate + nitrite nitrate nitrite ammonia pH | colour sodium potassium calcium sulphide TSS | magnesium alkalinity sulfate chloride turbidity TPH | reactive silica orthophosphate phosphorous DOC conductance | TDS (calculated) phenolics carbonate (CaCO ₃) hardness (CaCO ₃) bicarbonate (CaCO ₃) | |
| Metals Scan - must include the following: | | | | | |

| | | | | |
|-----------|----------|------------|-----------|----------|
| aluminum | boron | iron | nickel | tin |
| antimony | cadmium | lead | selenium | titanium |
| arsenic | chromium | manganese | silver | uranium |
| barium | cobalt | molybdenum | strontium | vanadium |
| beryllium | copper | mercury | thallium | zinc |
| bismuth | | | | |

Marine Environmental Effects Monitoring

59. Braya shall conduct the Marine Environmental Effects Monitoring program once every five (5) years, next report due by *December 31, 2023*, to monitor the impacts of the discharge of effluent stream on Placentia Bay. The report shall include the marine water quality monitoring component on an annual basis and the five year results (2018 through 2023) shall be included in the final report. The results of the completed study shall be submitted to the Department for review.

Terrestrial Effects Monitoring

60. Braya shall continue the Terrestrial Effects Monitoring program (commenced in 1995) to identify any impacts from the renewable fuel refinery on the surrounding terrestrial environment, over and above any impacts which may have already occurred as of August 15, 1994. All work plans shall be approved by the Department.

61. The Terrestrial Effects Monitoring program shall be carried out every five years, next report due by *December 31, 2023*.

Hazardous Waste Landfill

62. Braya shall maintain the hazardous waste landfill in the manner as described in section 3 - *Waste Site Operations Manual* of the report entitled "*North Atlantic Refining Limited Filling and Closure of Waste Site Come By Chance, Newfoundland, June 1997, Project No. 84764*" as prepared by Jacques Whitford. Braya shall submit any proposed revisions of the *Waste Site Operations Manual* to the Department for review.

63. Braya shall maintain a security fence around the landfill, with a sign identifying the site as a hazardous waste landfill site. The sign shall identify the owner and the contact phone number. The sign and its placement shall be acceptable to the Department.

64. Braya shall perform an annual physical inspection of the landfill as per section 3 - *Waste Site Operations Manual* using the assigned bench mark. The results of each inspection shall be submitted to the Department for review.

65. Braya shall take corrective measures to repair any damage noted within a reasonable period of time. The reasonable period of time shall be determined by the Department based on the circumstances at the time of inspection report.

66. Braya shall control the accumulation of leachate so that it does not overflow or challenge the integrity of the landfill liner.

67. Braya shall perform a Groundwater and Leachate Monitoring Program as per Table 6.

Table 6: Groundwater and Leachate Monitoring Program

| EDMS Location Code | Location | Parameters | Frequency |
|--|----------------------------------|-----------------------|--|
| 00841 00844 | MW #3 MW #6 | WCA | Four times per year at least 30 days apart |
| 00839 00840 00842 00843 | MW #1 MW #2 MW #4 MW #5 | WCA | Annually |
| 00845 | Leachate | WCA + Leachate Volume | Four times per year at least 30 days apart |
| TSS is not required for groundwater wells. | | | |

68. All results from the Groundwater and Leachate Monitoring Program shall be submitted to the Department as per the *Reporting* section.

69. Braya shall perform corrective action(s) in consultation with the Department if the leachate flow rate is confirmed to be greater than 1 m³/day (36 ft³/day).

Ambient Air

70. Braya 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 or installation of any monitoring equipment.

71. Parameters to be monitored are outlined in Table 7.

Table 7: Ambient Air Monitoring Program

| EDMS Location Code | Monitoring Site and Number of Monitors (WGS 84, UTM Zone 22) | Parameters |
|--------------------|--|--------------------------------------|
| 00846 | Arnold's Cove (276229 E, 5294600 N) One (1) SO ₂ Analyzer One (1) Particulate Matter Monitor | SO ₂ PM _{2.5} |
| 00847 | Come By Chance (277713 E, 5303681 N) One (1) SO ₂ Analyzer One (1) Particulate Matter Monitor | SO ₂ PM _{2.5} |

| | | |
|-------|--|--------------------------------------|
| 00848 | Sunnyside (281217 E, 5304907 N) One (1) SO ₂ Analyzer One (1) Particulate Matter Monitor | SO ₂ PM _{2.5} |
| 00849 | Fence Line (276034 E, 5298400 N) One (1) SO ₂ Analyzer One (1) Particulate Matter Monitor | SO ₂ PM _{2.5} |

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

73. All results from the Ambient Air Monitoring Program shall be submitted to the Department as per the *Reporting* section.

74. Braya shall operate, calibrate and maintain a meteorological station (EDMS Location Code 00850) at the south of Inkster Pond 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, March 2008, 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.

75. Braya shall submit the annual Leak Detection and Repair (LDAR) program report to the Department within 30 days of being issued to Braya. The report shall be in compliance with Part 3, Performance Guidelines of the CCME "*Environmental Code of Practice for the Measurement and Control of Fugitive VOC Emissions from Equipment Leaks (CCME PN 1106)*".

76. The ambient air quality standards specified in Schedule A of the *Air Pollution Control Regulations, 2022* shall apply to all points outside of Braya administrative boundary. The administrative boundary is defined as the area encompassed by the coordinates contained in Appendix 'B', a total area of approximately 1.252 km². All coordinates are referenced to NAD83 UTM Zone 22.

77. The Department reserves the right to add, delete or amend any term or condition of this Certificate of Approval as deemed necessary to meet the provisions of any new standards or emission requirements, including those adopted through the new Canadian Air Quality Management System.

Air Quality Complaints

78. Braya shall maintain a record of all air quality complaints received from the

municipalities or communities and Government agencies. The collected information shall be used to determine if there are specific meteorological or operating conditions or combinations thereof that result in an impact on the community. If significant relationships can be established, the information shall be used by the renewable fuel refinery to prevent or mitigate air quality problems during adverse conditions.

Pollution Control Equipment

79. All pollution control equipment shall be maintained and operated as per the manufacturer's specifications for best performance.

Stack Emissions Testing and Dispersion Modelling

80. Braya in consultation with the Department, shall perform the stack emission sampling program for the renewable fuel refinery heaters and boilers.

81. Stack emissions testing results shall be submitted to the Department within **75 days** of completion of the sampling.

82. Braya shall use the stack testing results to estimate the stack emissions for the heaters and boilers that are not equipped with stack sampling ports. The data to be recorded and reported to the Department shall include: the concentration of SO₂, NO_x, CO, O₂, CO₂, particulate matter, unburned hydrocarbons, stack gas temperature, combustion efficiency, estimated fuel firing rates and fuel quality information.

83. Stack emissions testing shall be done in accordance with the ***Stack Emission Testing Guidance Document (GD-PPD-016.1)***. Dispersion modelling shall be done in accordance with the ***Plume Dispersion Modelling Guidance Document (GD-PPD-019.2)***. Determination of frequency of stack emissions testing and dispersion modelling shall be done in accordance with the ***Compliance Determination Guidance Document (GD-PPD-009.4)***.

84. Braya shall be required to complete stack emissions testing once every four years if it has been shown, via a registered 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 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 stack emissions testing every two years.

85. Plume dispersion modelling results shall be submitted to the Department within **120 days** of acceptance of the stack emissions testing results by the Department.

86. Any modification in the process area resulting in a reduction or increase in the number of stacks shall include the installation of the necessary ports and platforms to conduct the stack gas sampling.

Analysis and QA/QC

87. 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 Braya 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 6 months; otherwise further analytical results shall not be accepted by the Department.

88. If Braya 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 and Monitoring** section. If using a commercial laboratory, Braya shall contact that commercial laboratory to determine and to implement the sampling and transportation QA/QC requirements for those activities.
89. The exact location of each sampling point as referenced in Table 3, 6 and 7 shall remain consistent over the life of the monitoring programs, unless otherwise approved by the Department. A sketch or diagram clearly identifying each sampling location shall be submitted by **October 31, 2022** to the Department.
90. Braya shall bear all expenses incurred in carrying out the environmental monitoring and analysis required under conditions of this Approval.

Monitoring Alteration

91. 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.
92. Braya may, at any time, request that monitoring program 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

93. Braya shall submit on a monthly basis a report for the previous calendar month. This report shall contain:
 - Feedstock summary:

- Amount processed (barrels);
 - Average API gravity; and
 - Average percentage Sulphur.
- Products summary:
 - Amount produced (barrels)
 - Average percentage Sulphur; and
 - Average API gravity.
- Fuel gas summary:
 - Consumption (millions standard cubic feet/day); and
 - Estimated Daily boilers and Heaters consumption (millions standard cubic feet/day).
- Detailed emissions of sulphur compounds and sulphur balance data obtained by sampling or calculation procedures approved by the Department, including:
 - Monthly total Feedstock sulphur content (tonnes);
 - Monthly total product sulphur content (tonnes); and
 - Daily total sulphur dioxide emissions (tonnes) from fuel gas combustion and any other sources.
- Summary of results from the ambient air monitoring program, including:
 - Hourly and daily Sulphur dioxide concentrations from each designated site;
 - Daily PM_{2.5} concentrations from each site, and
 - In the event that the emitted contaminant standards as specified in Schedule 'A' of the *Air Pollution Control Regulations, 2022* are exceeded at any time during the reporting period, the monthly report shall specifically note the date, time and location of the violation and provide a brief explanation of the reason for, or contributing causes to the violation. Any periods of missing or questionable air monitoring results during the reporting period shall be specifically noted and brief explanation provided as to why the results are unavailable or questionable.

94. Braya shall submit the relevant reports by using the EDMS codes as stated in Table 8.

| Table 8: | |
|--------------------|---------------|
| EDMS Location Code | Location |
| 00851 | Refinery |
| 00852 | Boiler # 3401 |
| 00853 | Boiler # 3402 |
| 00854 | Boiler # 3403 |
| 00855 | Heater # 1303 |
| 00856 | Heater # 1304 |
| 00857 | Heater # 1601 |
| 00858 | Heater # 1603 |
| 00859 | Heater # 1901 |
| 00860 | Heater # 1301 |
| 00861 | Heater # 1302 |

95. Braya shall submit by *February 28* of each year a report for the previous calendar year that contains the following:

- All records under parts 3, 4, 5, and 6 of the CCME guidelines

96. Braya shall submit by **June 1** of each year a report for the previous calendar year that contains the following:

- Estimate (by calculation) of the discharge of CO₂ (tonnes) from operation of the hydrogen plant;
- Electronic record of data collected for the previous calendar year from the meteorological station south of Inkster Pond, including the semiannual calibrations of the meteorological station; and
- Sufficient data to enable the estimation of annual emissions of SO_x, PM_{total}, PM₁₀, PM_{2.5}, VOCs, NO_x, CO, benzene.

97. 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 XML (Extensible Markup Language) format and Adobe Portable Document Format (PDF). Digital report submissions shall be uploaded through the EDMS web portal.

98. 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.

99. All incidents of:

- *Contingency Plan* implementation; or
- non-conformance of any condition within this Approval; or
- spillage or leakage of a regulated substance; or
- whenever discharge criteria is, or is suspected to be, exceeded; or
- whenever emissions of air pollutants occur as a result of abnormal or upset operating conditions; or
- verbal/written complaints of an environmental nature from the public received by Braya related to the renewable fuel refinery, whether or not they are received 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 thirty days of the date of the initial incident.

100. Any spillage or leakage of gasoline or associated product shall be reported immediately through the Environmental Emergencies 24-hour report line at 1-800-563-9089.

101. The Department shall be advised prior to or as soon as possible with regard to malfunctions, unplanned or emergency shutdowns or start-ups of the process units and air pollution control equipment or wastewater treatment equipment.

102. The Department shall be provided with at least two weeks advance notice of scheduled shutdowns of any process unit, air pollution control equipment or effluent treatment equipment.

103. Braya shall notify the members of the Community Liaison Committee, by telephone, facsimile, or e-mail of the conditions at the renewable fuel refinery that may be reasonably expected to lead to air quality complaints. Whenever possible these notifications should be in advance of the incident, but failing that, as soon as possible after the incident. Situations requiring notification may include, but not be limited to, processing unit upsets, emergency venting and emergency flaring episodes, as well as major spills, leaks and discharges.

104. In addition to the reporting specified in this Approval, Braya shall, upon the request of the Department, and within such time as may be specified, provide this Department with such reports, drawings, specifications, analytical data, flow rate measurements, shift logs, laboratory logs, maintenance records and other such information as may from time to time be requested.

105. The Department reserves the right, at its discretion, to make available to the general public any final reports in its possession pertaining to environmental matters at the renewable fuel refinery. This includes, but is not limited to, air quality reports, effluent reports, groundwater monitoring reports, leachate quality reports, terrestrial effects monitoring reports, chemical, petroleum, feedstock or products spill reports, stack sampling reports and dispersion modelling reports.

Liaison Committee

106. The Department recognizes the benefits of accurate, unbiased communication between the public and the renewable fuel refinery operations which may have an impact on the properties and residents in the area. The Department encourages that Braya continue the regular Community Liaison Committee (CLC) meetings, as per the terms and conditions outlined in the CLC Constitution. Regular meetings of the Liaison Committee will provide a clear conduit of communication between concerned citizens and renewable fuel refinery. The Department reserves the right to require the continuation of the Liaison Committee should it be deemed necessary.

107. Braya shall provide information relating to environmental matters and any other matter of general interest or concern through the liaison committee to the CLC members. Braya with the assistance of the liaison committee shall identify further opportunities to improve communication with the CLC members. Braya shall assume all reasonable costs associated with the operation of the liaison committee.

Compliance and Progress Review

108. Representatives of Braya and the Department of Environment and Climate Change shall meet quarterly to review progress on work items and compliance with conditions of this Certificate of Approval.

Expiration

109. This Certificate of Approval expires *April 28, 2027*.

110. Should Braya wish to continue to operate the renewable fuel refinery 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 *October 28, 2026*.

APPENDIX A

Industrial Site Decommissioning and Restoration Plan Guidelines

As part of the Department of Environment and Climate Change's ongoing commitment to minimize the residual impact of industrial activities on the environment of the province, the Department requires that Braya develop a Decommissioning and Restoration Plan for the fuel and feedstock storage and handling facility at Come By Chance and its associated property. The guidelines listed below are intended to provide some general guidance as to the expectations of the Department with regard to the development of the Plan, and to identify areas that are of particular concern or interest. The points presented are for consideration, and are open to interpretation and discussion.

Decommissioning and Restoration Plans are intended to present the scope of activities that a company shall undertake at the time of final closure and/or decommissioning of the industrial properties. Where it is useful and practical to do so the company is encouraged to begin undertaking some of the activities outlined in the Plan prior to final closure and decommissioning. The objectives of the restoration work to be undertaken can be summarized as follows:

- to ensure that abandoned industrial facilities do not endanger public health or safety;
- to prevent progressive degradation and to enhance the natural recovery of areas affected by industrial activities;
- to ensure that industrial facilities and associated wastes are abandoned in a manner that will minimize the requirement for long term maintenance and monitoring;
- to mitigate, and if possible prevent, the continued loadings of contaminants and wastes to the environment. The primary objective shall be to prevent the release of contaminants into the environment. Where prevention is not practical due to technical or economic limitations then activities intended to mitigate the consequence of such a release of contaminants shall become the objective of restoration work;
- to return affected areas to a state compatible with the original undisturbed condition, giving due consideration to practical factors including economics, aesthetics, future productivity and future use; and
- to plan new facilities so as to facilitate eventual rehabilitation.

The Decommissioning and Restoration Plan should:

- identify areas of known historical or current contamination;
- identify past or existing operational procedures and waste management practices that have, or may have, resulted in site contamination;
- highlight the issues or components to be addressed;
- identify operational procedures and waste management practices that can prevent or reduce site contamination;

- consider future land use, regulatory concerns and public concerns;
- enable estimation of the resources and time frame required to decommission the facility and restore the site to a condition acceptable to the Department;
- enable financial planning to ensure the necessary funds for decommissioning and restoration are set aside during the operational life of the facility, and
- include arrangements for appropriate project management to ensure successful completion of the decommissioning and restoration program.

APPENDIX B

Braya Administrative Boundary Coordinates

| | | | |
|----------|-----------|----------|-----------|
| 275227.2 | 5297399.3 | 276111.6 | 5297688.2 |
| 275253.2 | 5297440.4 | 276108.3 | 5297609.2 |
| 275264.0 | 5297560.9 | 276092.6 | 5297514.1 |
| 275297.1 | 5297656.8 | 276064.0 | 5297465.7 |
| 275281.2 | 5297754.5 | 275984.2 | 5297408.8 |
| 275290.5 | 5297817.9 | 275573.4 | 5297447.3 |
| 275331.4 | 5297920.3 | 275570.5 | 5297420.8 |
| 275351.2 | 5298053.3 | 275446.7 | 5297359.6 |
| 275329.8 | 5298155.7 | 275256.5 | 5297369.4 |
| 275230.5 | 5298313.2 | 275227.2 | 5297399.3 |
| 274890.3 | 5298732.5 | | |
| 274967.9 | 5298928.5 | | |
| 275086.7 | 5298988.9 | | |
| 275083.5 | 5299034.1 | | |
| 275082.8 | 5299102.6 | | |
| 275094.7 | 5299145.8 | | |
| 275328.2 | 5299139.3 | | |
| 275409.1 | 5299029.8 | | |
| 275425.3 | 5298978.3 | | |
| 275436.7 | 5298911.8 | | |
| 275442.5 | 5298845.6 | | |
| 275446.6 | 5298797.1 | | |
| 275445.2 | 5298781.0 | | |
| 275463.6 | 5298779.5 | | |
| 275465.1 | 5298768.1 | | |
| 275472.6 | 5298712.6 | | |
| 275499.9 | 5298661.8 | | |
| 275531.2 | 5298615.9 | | |
| 275570.6 | 5298573.9 | | |
| 275615.7 | 5298539.5 | | |
| 275665.7 | 5298514.3 | | |
| 275696.3 | 5298502.6 | | |
| 275725.8 | 5298500.7 | | |
| 275802.3 | 5298478.2 | | |
| 275814.3 | 5298474.5 | | |
| 275833.2 | 5298463.4 | | |
| 275898.2 | 5298442.9 | | |
| 275952.4 | 5298425.5 | | |
| 276009.7 | 5298407.8 | | |
| 276077.3 | 5298387.2 | | |
| 276253.3 | 5298336.0 | | |
| 276381.1 | 5298265.0 | | |
| 276468.5 | 5298186.4 | | |
| 276576.8 | 5298059.8 | | |
| 276066.8 | 5298080.3 | | |
| 276053.2 | 5298002.6 | | |
| 276030.1 | 5297966.3 | | |
| 276025.0 | 5297815.0 | | |
| 276075.9 | 5297779.7 | | |

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