



GOVERNMENT OF
NEWFOUNDLAND AND LABRADOR
Department of Municipal Affairs and Environment

CERTIFICATE OF APPROVAL

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

Issue Date: *June 26, 2020*

Approval No. AA20-065662

Expiration: *June 26, 2025*

File No. 734.415

Proponent: **Barite Mud Services Inc.**
1 Main Street, P.O. 338
Buchans, Newfoundland
A0H 1G0

Attention: Gordana Slepcev, C.O.O.

Re: **Buchans Barite Mine Project**

Approval is hereby given for the operation of a barite production plant, the extraction and processing of historic tailings from Tailings Pond 1, the deposition of processed tailings and effluent into Tailings Pond 1, the discharge of effluent from Tailings Pond 1 and other associated works at the former Buchans Mill Site, located in Buchans, Newfoundland.

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 Municipal Affairs and Environment shall be obtained prior to any significant change in the design, construction, installation, or operation of the Barite Mine Project, including any future expansion of the Barite Mine Project. 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. AA20-065662

June 26, 2020

General

1. This Certificate of Approval is for the operation of a barite production plant, the extraction and processing of historic tailings from Tailings Pond 1, the deposition of tailings and effluent into Tailings Pond 1, the discharge of effluent from Tailings Pond 1 and other associated works at the former Buchans Mill Site, as per plans and specifications supplied by Barite Mud Services Inc. for this Certificate of Approval. Extensive future expansion or change of activities will require a separate Certificate of Approval.
2. Any inquiries concerning this Approval shall be directed to the Western Regional Office of the Pollution Prevention Division (telephone: (709) 643-6114; or facsimile: (709) 643-8654).
3. In this Certificate of Approval:
 - **accredited** means the formal recognition of the competence of a laboratory to carry out specific functions;
 - **blanketed** means to cover a vessel with a lid that is specifically designed to contain vapours;
 - **BMSI** means Barite Mud Services Inc.;
 - **Department** means the Department of Municipal Affairs and Environment and its successors;
 - **Director** means the Director of the Pollution Prevention Division of the Department;
 - **discharge criteria** means the maximum allowable levels for the parameters listed in **Table 3**;
 - **EDMS** means Environmental Data Management System;
 - **GAP** means *Storage and Handling of Gasoline and Associated Products Regulations, 2003*;
 - **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;

- **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 malfuctions;
- **Minister** means the Minister of the Department;
- **on-scene commander** means the person designated to co-ordinate and direct pollution control efforts at the scene of an existing spill of a toxic or hazardous material;
- **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;
- **QA/QC** means Quality Assurance/Quality Control;
- **register(ed)** means that information regarding the storage tank system has been submitted to a Service NL office and a registration number has been assigned to the storage tank system;
- **regulated substance** means a substance subject to discharge limit(s) under the *Environmental Control Water and Sewage Regulations, 2003*;
- **spill or spillage** means a loss of gasoline or associated product 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;
- **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;
- **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; and
 - **used oil** means oil that, through use, storage or handling, can no longer be used for its original purpose.
4. 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, 2004;*
 - *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;*
 - *Ambient Air Monitoring Guidance Document;*
 - *Sampling of Water and Wastewater - Industrial Effluent Applications Guidance Document;*
 - *Effluent Discharge Schedule Determination Policy for Industries;*
 - *Accredited Laboratory Policy; 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, guidance documents and guidelines. If it appears that any of the pertinent requirements of these acts, regulations, policies 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.

5. 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 or water pollution,
 - finding alternative uses, acceptable to the Director, 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.
6. **BMSI** shall provide to the Department, within a reasonable time, any information, records, reports or access to data requested or specified by the Department.
7. **BMSI** shall keep all records or other documents required by this Approval at the Barite Mine Project location 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 Service NL when requested.
8. Should **BMSI** 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. **BMSI** 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.

Activities Affecting Bodies of Water

9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. All areas affected by this project shall be restored to a state that resembles pre-project conditions. Further remedial measures to mitigate environmental impacts on water resources can and will be specified, if necessary in the opinion of this Department.
16. Prior written permission is required from the Department for all work that takes place in a body of water, including but not limited to bridges, culverts, fording, stream modifications, infilling and dredging.

Waste Management

17. 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.

18. **BMSI** 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.
19. 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 Director and shall also complete the required information outlined in the Waste Manifest Form.

Waste Management Plan

20. **BMSI** shall submit a Waste Management Plan for the Barite Mine Project. With the goal of minimizing adverse effects on the environment, the Plan shall:
 - be comprehensive, including all operations within the Barite Mine Project;
 - identify the types of waste materials;
 - 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 Director for review by ***October 26, 2020***. 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 Director for review by ***February 26, 2021***. 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 Director for review. The Department will acknowledge receipt of the Plan and/or revisions, and shall provide any review comments within a reasonable time frame.

Noise

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

Dust Suppression

22. **BMSI** 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 Director. **BMSI** are encouraged to use best management practices when applying calcium chloride or any other approved dust suppressant.

Open Burning

23. Materials listed in **Table 1** shall not be burned in open fires.

Table 1 - Material Not Approved for Open Burning	
tires	manure
plastics	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

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

Chemical Operations

25. All chemical loading and blending shall be done inside the facility, with no chemical containers being opened outside. All vessels will be blanketed to eliminate vapour or odour releases.

26. 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 Prevention and Containment

27. 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.
28. 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 Service NL. All aboveground storage tanks shall be clearly and visibly labelled with their GAP registration numbers.
29. 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 Director.
30. **BMSI** shall submit an inventory of all petroleum and chemical storage tanks to the Director for review by **December 30, 2020**. 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 Director within three (3) months of the change having occurred.

31. Refuelling and maintenance of vehicles and equipment shall, whenever possible, be undertaken on a prepared impermeable surface with an oil containment or collection system. When this is not possible, due care shall be taken to prevent spillage on the ground and to the surrounding environment, particularly streams and other water bodies. The Contingency Plan for fuel storage shall detail the specific response actions in the event of a spill from refuelling or maintenance activities.

Contingency Plan

32. A Contingency Plan for the operation of Barite Mine Project shall be submitted to the Director for review by ***December 30, 2020***. 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. **BMSI** 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 Director for review. Changes which are not considered significant include minor variations in equipment or personnel characteristics which do not effect implementation of the Plan.

33. Every time **BMSI** 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.

Rehabilitation and Closure

34. Upon acceptance of a site Rehabilitation and Closure Plan by the Department of Natural Resources, **BMSI** shall submit the Plan to this Department. The Plan shall be implemented progressively as required and completed upon site closure.
35. As part of the site decommissioning and restoration process, **BMSI** 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, **BMSI** shall proceed through the process outlined in the Guidance Document to achieve regulatory site closure.

Used Oil and Used Glycol

36. Used oil and used glycol shall be retained in separate approved or registered tanks or closed containers, and disposed of by a company licensed for handling and disposal of used oil and/or used glycol products.

Ambient Air

37. **BMSI** shall operate an ambient air monitoring program as per the conditions in this Approval and its amendments. Approval shall be obtained from the Director prior to purchase or installation of any monitoring equipment.
38. Parameters to be monitored include PM_{2.5} and TPM. A proposal outlining the location for monitoring site shall be submitted to the Director by **January 31, 2022** for approval. All necessary equipment upgrades and installations shall be in place and operational to the satisfaction of the Director by **July 06, 2022**.
39. Ambient air monitoring shall be done in accordance with the *Ambient Air Monitoring Guidance Document (GD-PPD-065)*, or its successors.
40. Information regarding calibrations, site visits and maintenance for all continuous ambient air monitors shall be recorded into the DR DAS electronic logbook.

Effluent Monitoring and Discharge

41. **BMSI** shall perform an Effluent Monitoring Program as per **Table 2**. The applicable limits for the effluent discharge are listed in **Table 3**. Analytical results shall be submitted as per the Reporting section.

Table 2 - Effluent Monitoring Program

Location	EDMS Location Code	Parameters	Frequency
TP1 Siphon Discharge	00514 00742	<p>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 (CaCO₃), hardness (CaCO₃), bicarbonate (CaCO₃), TPH</p> <p>Metals Scan: aluminium, 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</p>	Four (4) times per year (at least one month apart)
TP1 Siphon Discharge	00514 00742	Effluent Discharge Criteria	Weekly (during discharge)

42. Refer to **Table 3** for the Effluent Discharge Criteria.

Table 3 – Effluent Discharge Criteria

Parameter	Allowable Limit
Arsenic	0.50 mg/L
Copper	0.30 mg/L*
Lead	0.20 mg/L*
Nickel	0.50 mg/L
Zinc	0.50 mg/L*
TSS	30.00 mg/L
pH	5.5 to 9.0 units
* The allowable limit is in excess of the background level	

Analysis and QA/QC

43. 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 **BMSI** shall be billed for each laboratory inspection in accordance with Schedule 1 of the *Accredited Laboratory Policy (PD:PP2001-01.2)*. Recommendations of the Director stemming from the annual inspections shall be addressed within 6 months, otherwise further analytical results shall not be accepted by the Director.
44. If **BMSI** 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, **BMSI** shall contact that commercial laboratory to determine and to implement the sampling and transportation QA/QC requirements for those activities.
45. **BMSI** shall bear all expenses incurred in carrying out the environmental monitoring and analysis required under conditions of this Approval.
46. The exact location of each sampling point shall remain consistent over the life of the monitoring programs, unless otherwise approved by the Director. Using a GPS or similar device, the northing and easting of each sampling location shall be recorded and submitted by to the Department.

Monitoring Alteration

47. The Director 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.
48. **BMSI** may, at any time, request that monitoring programs or requirements of this Approval be altered by:
 - requesting the change in writing to the Director; and
 - providing sufficient justification, as determined by the Director.

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

Reporting

49. Monthly reports containing the environmental compliance monitoring and sampling information required in this Approval shall be received by the Director in digital format within 30 calendar days of the reporting month. All related laboratory reports shall be submitted with the monthly report in XML format and Adobe Portable Document Format (PDF). Digital report submissions shall be uploaded through the EDMS web portal. The Pollution Prevention Division shall provide details of the portal web address and submission requirements.
50. 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.
51. All incidents of:
- *Contingency Plan* implementation; or
 - non-conformance of any condition within this Approval; or
 - spillage or leakage 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 **BMSI** and related to the Barite Mine Project, including complaints submitted anonymously;

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

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

52. Any spillage or leakage of gasoline or associated product shall be reported immediately through the Canadian Coast Guard at 1-(709)-772-2083.

Expiration

53. This Certificate of Approval expires *June 26, 2025*.
54. Should **BMSI** wish to continue to operate the Barite Mine Project beyond this expiry date, a written request shall be submitted to the Director for the renewal of this Approval. Such request shall be made prior to *December 30, 2024*.

cc: Mr. Gary Kennell
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