



SOW Ref: 16.F.5.d

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Nunavut Water Board Compliance Assessment

Record of Revision



BAF-3 Compliance Assessment

B3 Item	8BC-BAF1929	B3 Compliance Assessment
General Conditions		
B1	The Licensee shall file an Annual Report on the Appurtenant Undertaking with the Board no later than March 31st of the year following the calendar year being reported, containing the following information:	Report provided annually
B1	a. A summary report of Water use and Waste disposal activities;	Report provided annually
B1	b. Quantity of Water (in cubic metres/day) obtained for domestic and other purposes from sources on, in or flowing through Crown Lands reporting period;	Report provided annually
B1	c. Quantity of Waste backhauled to approved facility for disposal;	Report provided annually
B1	d. A list of unauthorized discharges and a summary of follow-up actions taken;	Report provided annually
B1	e. Any revisions to the Spill Contingency Plan or the QA/QC Plan for Berm Water Sampling at CAM-M, CAM-3, FOX-M, FOX-3, and DYE-M as required by Part B, Item 6, submitted in the form of an Addendum;	Report provided annually
B1	f. A description of all progressive and or final reclamation work undertaken, including photographic records of site conditions before, during and after completion of operations;	Report provided annually
B1	g. A summary of all information requested and results of the Monitoring Program;	Report provided annually
B1	h. A summary of public consultation/participation, describing consultation with local organizations and residents of the nearby communities, if any were conducted;	Report provided annually
B1	i. Any other details on Water use or Waste disposal requested by the Board by the 1st November of the year being reported.	Report provided annually
B2	The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.	No changes were made to the site that required notification to the NWB.
B3	The Licensee shall install flow meters or other such devices, or implement suitable methods required for the measuring of Water volumes as required under Part J, Item 3.	A flow meter was installed before the raw water tanks in 2009.
B4	The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.	Complete
B5	The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing	Complete
B6	The Licensee shall review the Plans referred to in this Licence, as required by changes in operation and/or technology, and modify the Plan accordingly. Revisions to the Plans shall be submitted in the form of an Addendum to be included with the Annual Report.	Complete
B7	The Board has approved or accepted the following Plans for implementation under the relevant sections in the Licence:	Complete
B7	a. Spill Contingency Plan for the North Warning System (March 29, 2018)	Complete
B7	b. Sewage Disposal Update: Sumps for Sewage Outfalls at CAM-3, FOX-3, DYE-M, and BAF-3 (July 13, 2018)	Complete
B8	Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.	Complete
B9	The Licensee shall ensure a copy of this Licence is maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:	Complete
B9	See Table 6 - Contact Information	Complete
B9	See Table 6 - Contact Information	Complete
B10	The Licensee shall submit an electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut and Inuinnaqtun.	Complete
B11	The Licensee shall ensure that all documents or correspondence submitted by the Licensee to the NWB are received and acknowledged by the Manager of Licensing	Complete
B12	This Licence is assignable as provided for in Section 44 of the Act.	Complete
B13	The expiry or cancellation of this Licence does not relieve the Licensee from any obligation imposed by the Licence, or any other regulatory requirement	Complete



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Conditions Applying to Water Use		
C1	The Licensee shall obtain all water from Water Supply Lake. Total Water use shall not exceed two-hundred and ninety-nine (299) cubic metres per day. The volume of Water for all purposes under this Licence shall not exceed one thousand seven hundred and fifty (1750) cubic metres per year	Complete, water use has been under the daily and annual limit.
C2	The use of Water from streams or any Water bodies not identified in Part C, Item 1, is prohibited unless authorized and approved by the Board in writing	Complete
C3	The withdrawal of Water from any stream shall not exceed ten (10) per cent of the low flow of that stream unless approved by the Board in writing.	Complete
C4	Where the use of Water is of a sufficient volume that the source Water body may be drawn down, the Licensee shall submit, for approval of the Board in writing, the following information: the volume required, a hydrological overview of the water body, details of impacts, and proposed mitigation measures.	Complete
C5	The Licensee shall submit to the Board for approval in writing, the following information at least thirty (30) days prior to the use of Water of a sufficient volume that the source water body may be drawn down: volume required, hydrological overview of the water body, details of impacts, and proposed mitigation measures	Complete
C6	The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw Water at a rate such that fish do not become impinged on the screen.	Complete
C7	The Licensee shall not conduct any work below the ordinary High Water Mark of any water body unless approved by the Board in writing	Complete
C8	The Licensee shall not cause erosion to the banks of any body of Water and shall provide necessary controls to prevent such erosion	Complete
C9	Sediment and erosion control measures shall be implemented prior to and maintained during the undertaking to prevent entry of sediment into Water.	Complete
Conditions Applying to Waste Disposal		
D1	The Licensee shall implement the Plan entitled "Sewage Disposal Update: Sumps for Sewage Outfalls at CAM-3, FOX-3, DYE-M, and BAF-3," dated July 13, 2018, as approved by the Board.	Complete
D2	The Licensee shall locate areas designated for Waste disposal at a minimum distance of thirty-one (31) metres from the ordinary High Water Mark of any water body such that the quality, quantity or flow of Water is not impaired, unless otherwise approved by the Board in writing.	Complete
D3	The Licensee shall not practice on-site land filling of domestic Waste, unless otherwise approved by the Board in writing.	Complete
D4	The Licensee is authorized to dispose of all acceptable food Waste, paper Waste and untreated wood products in an incinerator.	Complete
D5	The Licensee shall not open burn plastics, wood treated with preservatives, electric wire, Styrofoam, asbestos or painted wood to prevent the deposition of Waste materials of incomplete combustion and/or leachate from contaminated ash residual, from impacting any surrounding Waters, unless otherwise approved by the Board in writing.	Complete
D6	The Licensee shall provide to the Board documented authorization from all communities in Nunavut receiving Wastes from the Project prior to any backhauling and disposal of Wastes to those communities.	Complete
D7	The Licensee shall backhaul and dispose of all hazardous Wastes, Waste oil and noncombustible Waste generated through the course of the operation at a licensed Waste disposal site.	Complete
D8	The Licensee shall maintain records of all Waste backhauled and records of confirmation of proper disposal of backhauled Waste. These records shall be made available to an Inspector upon request.	Complete, records are included in the annual reports.
D9	The Licensee shall direct all Greywater to the Sewage Disposal Facility Sump. All Effluent shall be disposed to a Sump located at a distance of at least thirty-one (31) metres above the ordinary high water mark of any water body, at a site where direct flow into a water body is not possible and no additional impacts are created, unless otherwise approved by the Board in writing.	Complete



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B3 Item	B3 Item Description	B3 Compliance Assessment
D10	The Licensee may manage Toilet Wastes through the use of incineration toilets, and dispose of all resulting ash in the Landfill. In the event that the on-site population exceeds the capacity of the incineration toilet, the Licensee shall direct Toilet Wastes to the Sewage Disposal Facility.	Complete
D11	The Licensee shall submit to the Board for approval sixty (60) following the issuance of this Licence, a Landfarm Operation and Maintenance Plan for the Landfarm Facility.	landfarm plan to be provided
D12	All soil placed in the Landfarm must be treated to meet the appropriate post-treatment, land-use criteria outlined in the Canadian Council of Ministers of the Environment's (CCME) Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil (2008) and the Government of Nunavut – Department of Environment's Guidelines for Contaminated Site Remediation (Revised 2009).	n/a landfarm inactive
D13	All discharge of Effluent at Monitoring Station BAF-3 (Landfarm Facility) shall not exceed the following Effluent quality limits:	n/a landfarm inactive
D13	See Table 1 to 3 - Criteria	n/a landfarm inactive
D14	The Licensee shall treat, as required, the Effluent generated by the Landfarm Facility such that the Effluent discharged shall not exceed the Effluent quality limits established under Part D, Item 13, prior to Discharge into the receiving environment.	n/a landfarm inactive
D15	The Licensee shall confirm compliance with respective Effluent quality limits in Part D, Item 13, prior to Discharge.	n/a landfarm inactive
D16	The Licensee shall provide at least ten (10) days notice to the Inspector prior to any planned Discharges from any facilities. The notice shall include an estimated volume proposed for Discharge and the receiving location.	n/a landfarm inactive
D17	The Licensee shall implement measures to ensure leachate from the Landfill does not enter water	n/a landfarm inactive



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Conditions for Camps, Access Infrastructures and Operations		
E1	The Licensee shall not store material on the surface of frozen streams or lakes including the immediate banks except what is for immediate use.	Complete
E2	The Licensee shall not erect camps or store material on the surface of frozen streams or lakes including the immediate banks except what is for immediate use. Camps shall be located such as to minimize impacts on surface drainage.	Complete
E3	The Licensee shall conduct all activities in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake corrective measures in the event of any impacts on surface drainage.	Complete
E4	The Licensee shall construct all winter lake and stream crossings, including ice bridges, entirely of Water, ice or snow. The Licensee shall minimize disturbance by locating ice bridges in an area that requires the minimum approach grading and the shortest crossing route. Stream crossings shall be removed or the ice notched prior to spring break-up.	Complete
E5	Stream crossing shall be a minimum of five hundred (500) meters from spawning areas	Complete
E6	With respect to access road, pad construction or other earthworks, the deposition of debris or sediment into or onto any water body is prohibited. These materials shall be disposed a distance of at least thirty-one (31) metres from the ordinary High Water Mark in such a fashion that they do not enter the Water.	Complete
E7	The Licensee shall not mobilize heavy equipment or vehicles unless the ground surface is capable of fully supporting the equipment or vehicles without rutting or gouging. Overland travel of equipment or vehicles shall be suspended if rutting occurs.	Complete
Conditions Applying to Drilling Operations		
F1	The Licensee is authorized to drill only for the purpose of installing groundwater monitoring wells at a Landfarm Facility.	Complete
F2	The Licensee shall not conduct any land based drilling within thirty one (31) metres of the ordinary high water mark of any water body, unless otherwise approved by the Board in writing.	Complete
F3	The Licensee shall ensure that all drill waste, including water, chips, muds and salts (CaCl ₂) in any quantity or concentration, from land-based drilling, shall be disposed of in a properly constructed sump or an appropriate natural depression located at a distance of at least thirty one (31) metres from the ordinary high water mark of any adjacent water body, where direct flow into a water body is not possible and no additional impacts are created.	Complete



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B3 Item	B3 Compliance Assessment
Conditions Applying to Modifications	
G1	The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:
G1	a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
G1	b. such Modifications do not place the Licensee in contravention of the Licence or the Act;
G1	c. such Modifications are consistent with the NIRB Screening Decision;
G1	d. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
G1	e. the Board has not rejected the proposed Modifications.
G2	Modifications for which all of the conditions referred to in Part F [G], Item 1 have not been met can be carried out only with written approval from the Board.
G3	The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.
Conditions Applying to Spill Contingency Planning	
H1	The Board has approved the Plan entitled "Spill Contingency Plan for the North Warning System" dated March 29, 2018 that was submitted as additional information with the Application.
H2	The Licensee shall prevent any chemicals, petroleum products or Wastes associated with the project from entering Water. All Sumps and fuel caches shall be located at a distance of at least thirty-one (31) metres from the ordinary High Water Mark of any adjacent water body and inspected on a regular basis.
H3	The Licensee shall conduct any equipment maintenance and servicing in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other Waste and contain potential spills.
H4	The Licensee shall maintain secondary containment for hazardous waste and fuel storage area.
H5	If during the term of this Licence, an unauthorized discharge of Waste occurs, or if such a discharge is foreseeable, the Licensee shall:
H5	a. Employ the approved Spill Contingency Plan;
H5	b. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 and to the Inspector at (867) 975-4295; and
H5	c. For each spill occurrence, submit to the Inspector and the NWB, no later than thirty (30) days after initially reporting the event, a detailed report that will include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.
H6	The Licensee shall, in addition to Part H, Item 4, regardless of the quantity of releases of harmful substances, report to the NWT/NU Spill Line if the release is near or into a Water body.
Conditions Applying to Abandonment and Restoration or Temporary Closing	
Omitted from this summary. To be considered upon the Abandonment of the NWS	
n/a site is not closing	



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B3 Item	B3 Compliance Assessment
Conditions Applying to the Monitoring Program	
J1	The Licensee shall maintain Monitoring Stations at the following locations:
J1	See Table 4 - Monitoring Locs
J2	The Licensee shall measure and record, in cubic metres, the daily quantities of water pumped from Monitoring Program Station BAF-1 for all purposes.
J3	The Licensee shall sample at Monitoring Program Station BAF-2 , prior to Effluent discharge from the Sewage Disposal Facility Sump. Samples shall be analyzed for the parameters listed: Biological Oxygen Demand, Total Suspended Solids, Oil and Grease (and Visual), Faecal Coliforms, pH
J4	The Licensee shall, prior to release of effluent from the Landfarm Facility, sample at Monitoring Program Station BAF-3 for the parameters listed in Part D Item 13.
J5	The Licensee shall monitor groundwater using the monitoring wells at the Soil Remediation Facility at BAF-5 for the parameters listed under Part D, Item 13.
J6	The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where Wastes are deposited.
J7	The Licensee shall provide the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where sources of Water are utilized for all purposes.
J8	All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of <i>Standard Methods for the Examination of Water and Wastewater</i> , or by such other methods approved by the Board in writing.
J9	All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.
J10	The Licensee shall within ninety (90) days following issuance of the Licence, submit to the Board for review a Quality Assurance/Quality Control (QA/QC) Plan for the monitoring program. The Plan shall include up to date field sampling methods to all applicable standards, acceptable to an accredited laboratory as required by Part J, Item 8 and Part J, Item 9. The Plan shall include a covering letter from the accredited laboratory confirming acceptance of the Plan for analyses to be performed under this Licence.
J11	The Licensee shall annually review the QA/QC plan submitted under Part J, Item 10 and modify it as necessary. Revised plans shall be submitted to the NWB with an approval letter from an accredited lab that meets standards set in Part J, Item 8 and Part J, Item 9.
J12	The Licensee shall include in the Annual Report required under Part B, Item 1 all data, monitoring results and information required by this Part.



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Discharge Criteria

Table 1 – Sewage discharge criteria

Parameter	Maximum Concentration of any Grab Sample
pH	6.0 to 9.0 (pH units)
Oil and Grease	No visible sheen
Biological Oxygen Demand	120 mg/L
Total Suspended Solids	180 mg/L
Faecal Coliforms	10,000 CFU/100 mL

Table 2 – Water from bermed fuel storage facilities discharge criteria

Parameter	Maximum Concentration of any Grab Sample (µg/L)
pH	6.0 to 9.5 (pH units)
Oil and Grease	5000
Benzene	370
Toluene	2
Ethylbenzene	90
Lead (dissolved)	50

Table 3 – Water from landfarm facilities discharge criteria

Parameter	Maximum Concentration of any Grab Sample (µg/L)
pH	6 to 9 (units)
Oil and Grease	5000
Arsenic (total)	100
Cadmium (dissolved)	10
Chromium (dissolved)	100
Cobalt (dissolved)	50
Copper (dissolved)	200
Lead (dissolved)	50
Mercury (total)	0.6
Nickel (dissolved)	200
PCB (total)	1000
Phenols	20
Zinc (total)	500
Benzene	370
Toluene	2
Ethylbenzene	90



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Monitoring Locations

Table 4 – Monitoring Locations

Site	Station Number	Description	Status
BAF-3	BAF-1	Raw water supply prior to deposit in water tanks	Active (Volume cubic metres)
BAF-3	BAF-2	Final discharge point from the Sewage Disposal Facility	Active (Quality)
BAF-3	BAF-3	Final Discharge Point from the Landfarm	Active (Quality)
BAF-3	BAF-4	Final Discharge Point of the Bermed Fuel Storage Facility	Discontinued
BAF-3	BAF-5	Groundwater monitoring wells at the Soil Remediation Facility	Active (Quality)



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CIRNAC Water Licence Inspections, Comments, and Actions Taken

Table 5 – Record of CIRNAC Inspection Comments

Inspection Date	Site	Section	Condition	Comment	Action Taken to Address Comment
19-Jul-16	BAF-3	Waste Disposal	Waste Water	On-going and continued maintenance of the sewage treatment/Lagoon systems are to be maintained. Wash outs and overtopping of these facilities can be avoided through regular inspections. It is recommended that the Licensee and the contractor on site develop some schedule for regular inspections of these facilities.	The erosion that was noted by the water licence inspector in 2016 was repaired in 2017. The Operations and Maintenance Contractor performs preventive maintenance to ensure that there is no erosion on the sewage effluent receiving sump. As part of a long term solution a project is being designed to resize the sewage sump, this longer term solution will ensure that the sewage sump is large enough to accommodate the sewage that can be discharged from the waste water holding tanks in the building. An addendum to the "Sewage Disposal Update: Sumps for Sewage Outfalls at CAM-3, FOX-3, DYE-M, and BAF-3" dated 13-Jul-2018 was submitted to the NWB in response to the water licence 8BC-FOD1828, item D2. The licensee intends to apply this addendum to all sites listed in the document title. The NWB accepted this document on 23-Jul-2018.
19-Jul-16	BAF-3	Waste Disposal	Solid Waste	Waste materials that are no longer in use and are left over from previous activities should be consolidated and if no longer required either stored or shipped off site. Materials left open to the elements are subject to deterioration and to be windblown / ejected off site. This can be avoided and is to be addressed prior to the period of the next inspection.	There is a project being drafted to address the non-hazardous waste materials stored externally at BAF-3.
19-Jul-16	BAF-3	Water Management Structures	Reclamation Activities	Long write up about the 2015 spill reclamation activities.	Remedial activities ongoing
19-Jul-16	BAF-3	Water Management Structures	Signage	Nothing noted in comments	N/A
19-Jul-16	BAF-3	HAZ/MAT Management	Storage	Nothing noted in comments	N/A



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Inspection Date	Site	Section	Condition	Comment	Action Taken to Address Comment
19-Jul-16	BAF-3	HAZ/MAT Management	Spills	<p>Without Prejudice.</p> <p>The Nunavut Waters and Nunavut Surface Rights Tribunal Act;</p> <p>12. (1) Subject to subsection (2) and except in accordance with the conditions of a license, no person shall deposit or permit the deposit of waste</p> <p>(a) in waters in Nunavut; or</p> <p>(b) in any other place in Nunavut under conditions in which the waste, or any other waste that results from the deposit of that waste, may enter waters in Nunavut.</p> <p>(2) Subsection (1) does not apply in respect of</p> <p>(a) any unlicensed deposit of waste that is authorized by the regulations; or</p> <p>(b) the deposit of waste in a national park.</p> <p>Based on observations and photos collected during the period of the Inspection, the Inspector believes that the Licensee has failed to adhere to section 12 as above and is in contravention of the Act.</p> <p>No further enforcement actions are recommended at this time given the remedial actions undertaken by the licensee. However, on-going compliance and inspection activities will be required to ensure continuing efforts are maintained to achieve and maintain compliance with the Act and the License.</p>	Remedial activities ongoing
19-Jul-16	BAF-3	HAZ/MAT Management	Spill Plan	Nothing noted in comments	N/a
24-Aug-17	BAF-3	None	None	Inspection with no unacceptable conditions noted.	N/A
3-Sep-18	BAF-3	Sewage	Sewage outfall capacity	12. The Sump pit appeared to be full, and was built up on one side of the wall with rocks. Seepage appears to have leaked through the rocks (See photo 11).	Comment only, project has been started to reconstruct sewage outfall (EP-1711)
7-Sep-21	BAF-3	Spills	Spill reports	Provide an update for the above noted spill reports [Spill report 2017-438, 2015-321 and 2015-105]	RCL is in the process of actioning this request.



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Contact Information

Table 6 – Contact Information

Manager of Licensing	Inspector
Nunavut Water Board P.O. Box 119 Gjoa Haven, NU X0B 1J0 Telephone: (867) 360-6338 Fax: (867) 360-6369 Email: licensing@nwb-oen.ca	Manager of Field Operations, CIRNAC Nunavut District, Nunavut Region P.O. Box 100 Iqaluit, NU X0A 0H0 Telephone: (867) 975-4295 Fax: (867) 979-6445