

NWB Annual Report

Year being reported: 2022

License No: 1BR-ELR1829 Issued Date: June 28, 2018
 Expiry Date: June 27, 2029

Project Name: Ennadai Lake Long Term Monitoring

Licensee: Crown-Indigenous Relations and Northern Affairs Canada
 (CIRNAC) Contaminated Sites

Mailing Address: PO Box 2200
 Iqaluit NU
 X0A 0H0

Name of Company filing Annual Report (if different from Name of Licensee please
 clarify relationship between the two entities, if applicable):

General Background Information on the Project (*optional):

The Ennadai Lake site was a former weather station, located approximately 370 km west of Arviat (the nearest community) and 500 km southwest of Rankin Inlet, Nunavut, at approximately 61° 07' 51" N latitude and 100° 53' 14" W longitude. The site was developed in the 1950s and was operated both as a manned and unmanned station, at different times since its construction and was abandoned in the late 1980s to early 1990s.

Remediation activities at the site were undertaken between 2014-2015, and included the construction of a non-hazardous waste landfill (NHWL), demolition and disposal of onsite structures, and clean-up of hazardous materials and contaminated soil.

As per departmental commitments to monitor the NHWL post-closure, a 25-year long term monitoring (LTM) program was initiated at Ennadai Lake in 2016 and includes visual inspection, groundwater sampling, soil sampling (as required), and natural environment monitoring. Refer to the *Ennadai Lake Long Term Monitoring Plan* (2016) for more details.

Year 1, 3 5 and 7 of the LTM Plan took place in 2016, 2018, 2020 and 2022 respectively. Future events are scheduled for 2025, 2030, 2035, and 2040.

Licence Requirements: the licensee must provide the following information in accordance with

Part B ▼ Item 1 ▼

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	Monitoring Wells at the NHWL (See GPS Coordinates Page)	
Water Quantity:	1/day	Quantity Allowable Domestic (cu.m)
	<0.05	Actual Quantity Used Domestic (cu.m)
	0	Quantity Allowable Drilling (cu.m)
	0	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

☒ Solid Waste Disposal

☐ Sewage

☐ Drill Waste

☐ Greywater

☐ Hazardous

☐ Other:

Additional Details:

CIRNAC was onsite on August 11th, 2022. A groundwater sample and a duplicate were collected from monitoring well MWLF-3. The other two wells were unable to be sampled as MWLF-1 was dry within the active layer, and MWLF-2 was frozen. The total volume of water used/collected was less than 10 litres. Excess purge water was disposed in the center of the NHWL.

Monitoring activities were conducted within a single day and were based out of Rankin Inlet, NU so no camp was required. Solid wastes (packaging, paper towels, paper, kimwipes, filters, Teflon tubing) generated (< 0.5 m3) were collected and removed from the site at the completion of monitoring activities.

Refer to the *Ennadai Lake Lake Long Term Monitoring Plan (2016)* and *Ennadai Lake 2022 LTM Report* for details.

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: No spills (as reported to the Spill Hot-line)
 Date of Spill: N/A
 Date of Notification to an Inspector: N/A
 Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

N/A

Revisions to the Spill Contingency Plan

Other: (see additional details) ▼

Additional Details:

A General LTM Spill Plan was submitted to the Nunavut Water Board on November 2, 2018 for consideration.

Revisions to the Abandonment and Restoration Plan

N/A - not applicable

Additional Details:

N/A

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

No progressive reclamation work was undertaken in 2022.

Year 7 of LTM occurred on August 11th, 2022. A visual inspection of the NHWL and surrounding area was conducted in accordance with the Abandoned Military Site Remediation Protocol (AMSRP) and the site-specific LTM Plan. The NHWL was found to be in acceptable condition. No new staining or seepage points were observed, and settlement features previously identified do not appear to be notably changing or affecting the stability or performance of the landfill. None of the features noted in the report are considered to affect the physical integrity of the NHWL. Significant erosion was observed along the access road to the airstrip during the site visit. This area of erosion does not appear to impact the integrity of the NHWL but could impact access to both the NHWL and the weather station.

A total of 2 groundwater samples were collected (1 samples and 1 blind duplicate from MWLF-3). The samples were submitted for analysis and detailed results can be found in the *Ennadai Lake 2022 LTM Report*. Soil samples were not collected because there was no indication of new seepage or staining.

As per the *Ennadai Lake Lake Long Term Monitoring Plan (2016)*, future LTM events are scheduled for 2025, 2030, 2035, and 2040 (Years 10, 15, 20, and 25 respectively).

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details attached

Additional Details:

Additional details regarding water sources can be found in the *Ennadai Lake Long Term Monitoring Plan (2016)*.

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Not Applicable (N/A)

Additional Details:

Remediation was completed in 2015 and the only structure remaining at the site is the NHWL. No waste was deposited on site in 2022. Any solid waste generated is removed from the site at the completion of LTM activities.

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board ▼

Additional Details: (date of request, analysis of results, data attached, etc)

N/A

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board ▼

Additional Details: (Attached or provided below)

N/A

Any responses or follow-up actions on inspection/compliance reports

No inspection and/or compliance report issued by INAC ▼

Additional Details: (Dates of Report, Follow-up by the Licensee)

The last inspection conducted at Ennadai Lake was in 2015. The 2015 Inspection Report is available on the NWB ftp site. The majority of issues were identified during remediation and no issues remain applicable to post-remediation monitoring activities.

Any additional comments or information for the Board to consider

Physical observations of the NHWL conducted during the 2022 LTM event indicate that the NHWL at Ennadai Lake is in acceptable condition, is performing as designed, and is containing the enclosed waste.

Date Submitted:

March 23, 2023

Submitted/Prepared by:

Selma Al-Soweydawi, Contaminants Specialist

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