



MOUNT NANSEN REMEDICATION PROJECT NEWSLETTER

March 2024 *Dän ze 2024*



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We are excited to share what has been progressed for the Mount Nansen Remediation Project in 2023 and to provide some insight on what we are progressing in 2024.

Have any questions?

Go to the Mount Nansen Remediation Project website:

www.mnrlp.ca

PROJECT OVERVIEW

The closed Mount Nansen Mine is an abandoned gold and silver mine in the Traditional Territory of the Little Salmon/Carmacks First Nation (LSCFN), located about 60 km west from the Village of Carmacks. The Mount Nansen Remediation Limited Partnership (MNRLP) was formed between Ensero Solutions and JDS Energy & Mining to undertake the preferred remediation plan agreed upon by the Yukon Government, the Canadian Government, and the LSCFN. This Project is the Mount Nansen Remediation Project.

SITE CLOSURE OBJECTIVES

The Little Salmon/Carmacks First Nation, Government of Canada, and Yukon Government collaboratively agreed upon **5 objectives** for the remediation of the site:

Protect human health and safety.

Return the mine site to an acceptable state that reflects original, traditional, and pre-mining land use.

Protect and restore the environment including land, air, water, as well as fish and wildlife and their habitat.

Maximize local and Yukon First Nations benefits.

Manage risk in a cost-effective manner.

Currently, these Closure Objectives are considered to be more similar to what the industry calls “Closure Principals”. LSCFN, CIRNAC, and MNRLP are starting a process in 2024 to develop more detailed Closure Objectives – and we will share this progress as soon as we can.

We want to respect the requirements set out in the Little Salmon/Carmacks First Nation Dan Yedek’i for the Project and want to hear feedback from you. In the same way that runners were traditionally used to bring messages to and from the broader community, we want to use this newsletter in a similar way.

A WORD FROM THE PROJECT DIRECTOR



Thank you for taking the time to read this newsletter – we are happy to present a summary of the last year at Mount Nansen. This project is very important to us, and despite the challenges faced in 2023, we feel very confident that the Mount Nansen Remediation Project is heading in the right direction, and we embark on 2024 with increased confidence in our relationship with LSCFN.

We want to thank the LSCFN government for their increased support of this project, highlighted by the hiring of a Mount Nansen Coordinator in 2023 and the increased engagement with the LSCFN Lands & Resources Department. This collaboration has resulted in productive discussions about the current care and maintenance of the site and the long-term remediation plan. We were also able to provide over 600 paid training hours in 2023, with the strong support of the Mount Nansen Coordinator.

In 2023, we continued to communicate with our LSCFN partners and the broader community of Carmacks, to provide as much information as we could through a community meeting, Chief and Council meetings, working group meetings, a site tour, and announcements on training and employment opportunities. This 2023/24 newsletter is part of what we hope is an appropriate component of Dan Yedek'i (Consultation and Accommodation Plan).

Throughout 2023, we continued to carry out care and maintenance activities at the site. This involved overseeing the operation of the water treatment plant, which has been effectively treating and releasing water since March 2022. Since the implementation of this system, untreated seepage water from the tailings pond is no longer being discharged into Dome Creek. Concurrently, efforts are underway to reduce the water level in the tailings pond. We are actively engaged in collaborative efforts to revise and update water quality objectives for Dome Creek and its surrounding areas.

The Remediation and Closure Plan is currently being evaluated by the Yukon Environmental and Socio-economic Assessment Board, which is currently in the Pre-Submission Engagement process. This process will be a major focus of 2024, and we will engage and consult with LSCFN and the community of Carmacks on many aspects of the long-term remediation plan.



In April 2023, we held an in-person community meeting to listen to concerns and questions about the project with LSCFN members. MNRLP took the opportunity to provide clarifications and explanations regarding our approach to the project and our commitment to collaboration. There were many insightful questions on topics such as water quality, water treatment, wildlife, site remediation plans, employment, and training. We are eager to integrate the feedback received into our future work and work plans. You can find meeting minutes for the April 2023 community meeting here:

<https://www.mnrlp.ca/engagement/>. We look forward to the next community meeting in April 2024.

MNRLP also returned to Carmacks in November for a meeting with the LSCFN Chief and Council where we were able to further update leadership on our progress and to work collaboratively with the LSCFN lands department on how to approach the management of the site as the assessment work continues.

In September 2023, we welcomed a tour group of 12 LSCFN citizens to the site. We had great discussions about future training and employment opportunities and the remediation plan for the site. You can find the report from the 2023 site tour here: <https://www.mnrlp.ca/engagement/>

One of the challenges of the past year was dealing with rising water levels in the Tailings Storage Facility pond due to higher-than-normal snow pack and precipitation over several years. In September, we applied to the Yukon Water Board for an emergency amendment to our water license to increase the amount of water we can treat and discharge through the water treatment plant. This amendment was accepted in late October 2023 and with the hard work of our team on site, we have increased the amount of water treated and are slowly drawing the pond down to safer levels. We continue to treat to the same quality standards of the current site water use license. We are continuing to work with LSCFN to discuss preparations for spring melt, which has included the submission of another Emergency Amendment to our water license to give us more active control over water management on site.

We also completed three site programs in the fall of 2023, in collaboration with our partners: LSCFN, the Carmacks Development Corporation (CDC), and the Government of Canada. Through a CDC-partnered business, we replaced ageing instrumentation at the Tailings Storage Facility, allowing us to improve monitoring of the tailings dam structure. We also installed 21 new groundwater monitoring wells around the site to provide a better understanding of current conditions and help plan for future remediation. Finally, through another CDC-partnered business, we installed solar arrays at two different site locations, allowing us to generate our own clean electricity and reduce greenhouse gas emissions from current and future operations.

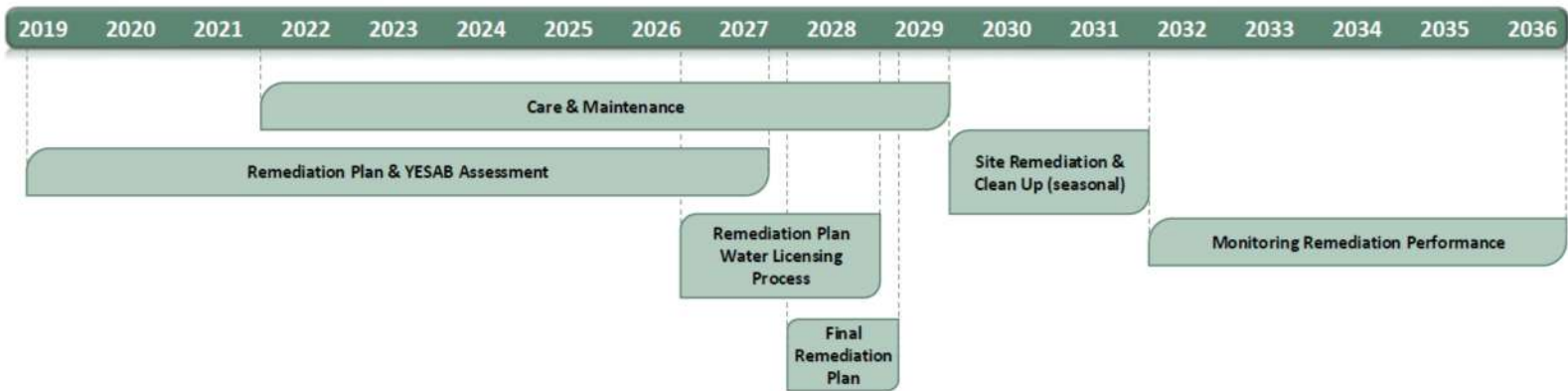
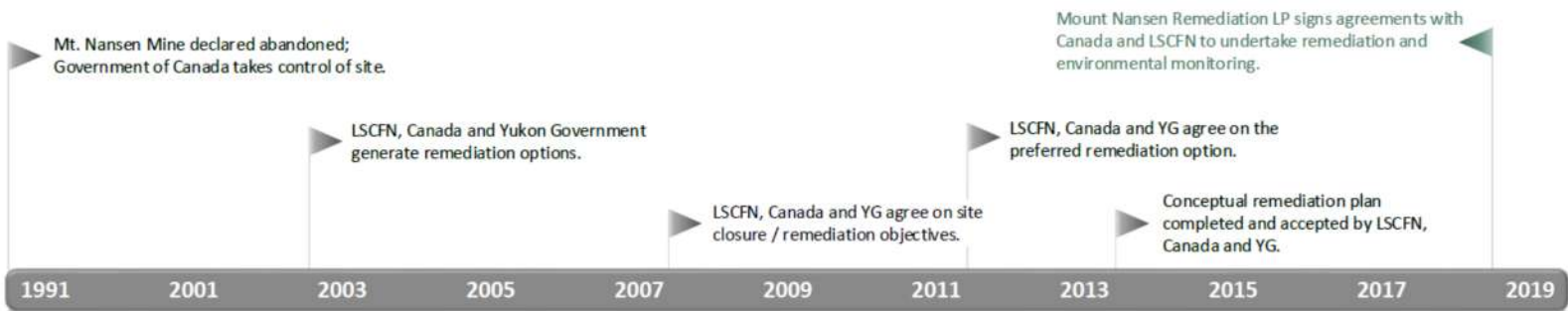
It has been a busy year, and we look forward to what the future of this project brings. We hope this newsletter was helpful, and that we will continue to get feedback from all members of the community. We are updating the project website, and we encourage everyone to visit the website for news on the project, including employment and training opportunities: www.mnrlp.ca. As mentioned, our long-term vision for the Mount Nansen mine remains the same — provide local benefits to the Yukon and First Nations through collaborative planning and successful execution of our remediation objectives.

JIM HARRINGTON
PROJECT DIRECTOR



PROJECT TIMELINE

In early 2024, MNRLP re-estimated the timeline for the project based on the new permitting guidelines established by the Yukon Environmental and Socio-economic Assessment Board.





SITE PROGRAMS COMPLETED IN 2023

Revegetation Trials

To support decision-making for final revegetation of the site, MNRLP has established eleven (11) vegetation trial plots in 2021 and 2023. The purpose of these trial plots is to help inform how and what plants will grow well in the available soils on site. The first five (5) trial plots were established in 2021 with locally sourced *k'áy* (willow) and *t'ó* (poplar) stakes, local *ts'aw* (spruce) seedlings, local *K'i* (scrub birch) seedlings, and Yukon *Ts'aágó* (Labrador tea) seedlings. In addition, a number of plots were seeded with grasses and fertilized to study how the grasses and fertilizer may improve survival and growth rate of the planted seedlings and stakes. Five LSCFN citizens were involved in the planting of the 2021 vegetation plots. MNRLP has now monitored the 2021 plots in 2022 and 2023.

MNRLP established six new vegetation trial plots in 2023 which were prepared using three different soil types and included *k'áy* (willow) and *Nänddhi* (blueberry) grown from seeds collected in 2021 from the Mount Nansen area, Yukon *Ts'aágó* (Labrador tea) seedlings, and a seed mix of grass. Coarse woody debris, which comprised of fallen branches sourced from on site and within the surrounding site area, was spread across half of each plot. Coarse woody debris was applied to study whether the woody debris provides protection, shade, and nutrients to the planted seedlings and seed, helping them grow. One LSCFN citizen was involved in the planting of the 2023 vegetation trial plots.



Revegetation Trials Continued...

Prior to revegetating the land, earth will be moved to recontour areas where contaminated soil has been excavated, including reshaping the area of where the mine tailings are removed. Additionally, the open pit that was created during mining will be filled in with excavated material and covered. The disturbed surfaces will be revegetated with seedlings and seed.



We anticipated a variety of seed will be collected from the Mount Nansen area and either grown into seedlings for planting or spread across the land as seed. We will continue looking at the data from the previous revegetation trials to identify what species are thriving in the soil we have, and plan how to harvest local seed for full-site revegetation. In 2024, we plan to meet with LSCFN to define what site revegetation will look like and discuss what will be achievable with the information we have to date.



Water Treatment Plant Upgrades

The site Water Treatment Plant (WTP) has been operational since March 2022 and continues to meet our treatment objectives. A new pump and piping system were installed in February 2023 and now the Water Treatment Plant treats water directly from the Tailings Storage Facility rather than the Seepage Collection Pond. Water from the Seepage Collection Pond is being pumped up into the Tailings Storage Facility for treatment.

Additional Water Treatment Plant upgrades were completed in June 2023 to reduce downtime and increase the volume of water which can be treated at the plant. The major upgrades included the addition of a new Tailings Storage Facility pump, new flow meter, replacement of the original air compressor, replacement of the reaction tank outlets, lime circuit modifications and upgrades, piping, valves, and generator fuel system modifications. The control and automation systems were also modified to accommodate the upgrades.



Water Treatment Plant Upgrades Continued...



As part of our Water Licence, issued to us in August 2021 by the Yukon Water Board, we are authorized to discharge treated water from the plant that meets specific environmental standards. MNRLP monitors water at over 70 locations across the site, including the treated water that comes from the WTP, groundwater, surface water, and as part of aquatics monitoring programs. The water samples are tested for over forty potential contaminants in the water to better understand water at the site, the environment impacting the water quality, and to determine things that can be done to protect the lands and waters in the valley.

The Water Treatment Plant operated to meet our discharge limit of 360 m³ per day throughout the entire summer of 2023. Despite this, the water level in the tailings pond rose above a safe operating level, putting the dam at risk. In August 2023, we engaged with LSCFN and regulators to develop mitigation measures, and applied for an Emergency Amendment to our Water License to allow us to treat more water each day to lower the water level in the tailings pond. The Emergency Amendment was received at the end of October 2023.

Groundwater Well Installation Program

The groundwater monitoring well network at the site is used to monitor for environmental impacts in groundwater. The existing network of monitoring wells is over 10 years old, and some of the existing wells have been severely damaged by frost-heave and are no longer able to be used for monitoring at the site.



In fall 2023, 21 new groundwater monitoring wells were installed around site. Some of these wells were installed to replace the damaged or destroyed monitoring wells around the pit, the Mill Area, the Tailings Storage Facility, and at various other locations. Additional wells were installed in new locations to address concerns raised by LSCFN and Yukon Government related to the groundwater monitoring network. Background monitoring wells were installed to monitor groundwater quality upgradient of historic mine infrastructure, to provide an indication of groundwater conditions not impacted by the Mount Nansen Mine site.

Groundwater Well Installation Program Continued...

As there were around 15 people in camp during the groundwater well installation program, Central Hub Catering, an LSCFN business, was contracted to provide meals and catering services to the workers on site for the duration of the program.

Throughout the program, two LSCFN citizens supported the drilling operations, groundwater well installation, and the well development as a training opportunity! Keep an eye out for future training opportunities on the MNRLP website: <https://www.mnrlp.ca/jobs-training/>



Geotechnical Instrumentation Installation Program



The Tailings Storage Facility is monitored by a series of geotechnical instruments installed around the dam. The instruments are located on the dam crest, the downstream slope, and the area downstream of the dam. Data is collected from the instruments every month and is reviewed to detect potential problems with the stability of the dam. Many of the instruments are aging and some have stopped working altogether, so in October 2023, a program was completed to replace the non-functioning instruments.

The newly installed instruments will allow us to continue monitoring for movement of the dam structure. Temperature data is also collected, allowing us to monitor the seasonal frost depth immediately below the ground surface, and both seasonal and long-term changes in ground temperature in the permafrost.



Solar Panel Installation



Two arrays of solar panels were installed on site in October 2023: one at the Water Treatment Plant and one at the bunkhouse. The solar panels will reduce the use of generators, fuel consumption, and CO2 emissions at the site, notably in the summer when daylight hours are long.

An LSCFN citizen worked with the solar team to construct and install the arrays on site! Keep an eye out for future training opportunities on the MNRLP website: www.mnr/p.ca/jobs-training/



LSCFN Site Tour



In September 2023, LSCFN citizens were invited to participate in a tour of the Mount Nansen site to discuss short- and long-term employment and training opportunities. Fourteen (14) LSCFN citizens attended the tour and joined in open discussions around the Water Treatment Plant, Tailings Storage Facility dam, Seepage Collection Pond, Open Pit, and the Vegetation Test Plots.

The tour provided MNRLP an opportunity to learn from LSCFN citizens who have experience on the site and in the area and to answer questions about the current and future project activities. A report of the site tour can be found on the MNRLP website here:

<https://ww.mnrlp.ca/engagement/>



Winter Road Maintenance

The 60 km drive from Carmacks to the Mount Nansen site has proven to be one of the biggest risks workers and visitors face while working on the Project. Proper maintenance of the Mount Nansen Road, especially in winter conditions, is vital to ensure the safety of anyone attending site. HighWind Construction, an LSCFN-owned and operated business, has been directly contracted to maintain the road and remove built-up ice 'glaciers' which pose a risk to anyone driving on the road. Maintenance is only performed up to the site, so drivers should continue to be cautious if they venture on the public road past the site.



PROJECT DESIGN UPDATE

The formulation of the Detailed Design and Remediation Plan (DDRP) is currently underway and is scheduled to commence in 2024. Our primary focus is to understand the additional efforts required to meet the stringent requirements outlined in the Remediation and Security Agreement guidelines for the DDRP. In early 2024, we will be working to scope the 2024 site activities to provide information that will support & feed into the detailed design.

Key areas of emphasis for advancing the DDRP include, but are not limited to:

- Conducting a thorough assessment of volumes and areas containing contaminated soils, including legacy sites and blackened vegetation areas.
- Validation of the Non-Acid Generating and Potentially Acid Generating waste balance through a combination of fieldwork and modeling techniques.
- Development of a comprehensive demolition plan for existing infrastructure.
- Progressing Primary Containment Structure Engineering to achieve a 90% completion level.
- Creating an Adit Remediation and Stability Plan.
- Completing a Trench Field Assessment and Remediation Plan.



PROJECT DESIGN UPDATE Continued...

The formulation of these work plans serves a dual purpose. Firstly, they are designed to fulfill the core requirements delineated in the Remediation and Security Agreement guidelines, ensuring strict adherence to regulatory and legal standards. Additionally, this proactive approach is aimed at de-risking the project by addressing potential challenges related to quality and execution.

In alignment with our commitment to a robust risk management framework, a Failure Modes and Effects Analysis (FMEA) workshop was successfully conducted for the Preliminary Design and Remediation Plan (PDRP). This workshop provided a comprehensive basis for identifying and assessing potential risks. An upcoming iteration of engineering will include an update to the Failure Modes and Effects Analysis, evaluating how the proposed engineering designs and associated mitigations effectively address identified risks. This iterative process underscores our dedication to the continuous improvement of our projects, ensuring they meet the highest standards of quality and resilience.



PRE-SUBMISSION ENGAGEMENT PROCESS

The Pre-Submission Engagement (PSE) process established by the Yukon Environmental and Socio-economic Assessment Board is a proactive approach to developing a Project Proposal. This process requires engagement with First Nations, governments, and the public in the development of a Project Proposal which is submitted to the Executive Committee of Yukon Environmental and Socio-economic Assessment Board for screening. This process was implemented June/Ezra Ze of 2022 and aims to make the development of the Project Proposal collaborative, bringing interested and affected parties together to identify issues and concerns, to define values, and identify information requirements.



In fall of 2022, MNRLP submitted the Project Description for Mount Nansen to the Executive Committee for review, thereby initiating the Pre-Screening Engagement Process. The Project Description outlined general components of the Project at a high level. The Executive Committee held a public comment period on the Project Description which informed the development of draft Project Proposal Guidelines. Another public comment period was held on the draft Project Proposal Guidelines allowing Yukon Environmental and Socio-economic Assessment Board to finalize and issue the Project Proposal Guidelines to MNRLP in spring of 2023. In developing the draft and final Project Proposal Guidelines, the Executive Committee considered comments and input received from First Nation Governments, government departments, and other participants.

PRE-SUBMISSION ENGAGEMENT PROCESS Continued...

The Project Proposal Guidelines outlines project-specific information requirements that must be provided by MNRLP in the Project Proposal. This includes information such as description of Project activities, baseline information requirements, valued components for consideration, and engagement with affected First Nations. The next, and current phase, of the PSE process is for MNRLP to develop a Project Proposal Guideline Response. This Project Proposal Guideline Response will describe how MNRLP will meet the information requirements identified in the Project Proposal Guidelines. Where there are information gaps, the Project Proposal Guideline Response will also describe how those gaps will be addressed prior to submission of the Project Proposal. The Dan Yedek'i will continue to be carried out through the PSE process as we move through the next phases.



Our assessment team will be continuing to move the project through the PSE process by developing the Project Proposal Guideline Response and ultimately the Project Proposal. We will work with, and seek feedback from, LSCFN as we move through the next steps. MNRLP recognizes that as part of Dan Yedek'i, LSCFN will want to better understand the PSE process, and its potential implications on the Project. A strength of the new process is that earlier involvement by potentially affected First Nations and communities is required, leading to better identification of potential impacts, values, mitigations, and design elements. LSCFN's input and collaboration will continue to be critical in finalizing the design of project components, final remediation approaches, end land use objectives, and the incorporation of Traditional Knowledge through all phases.

EMPLOYMENT & CONTRACTING OPPORTUNITIES

Currently, we have **three LSCFN citizens employed** on the Care and Maintenance team. These individuals hold the positions of the Care & Maintenance Supervisors and Water Treatment Plant Operator-in-Training.

We do not currently have any open positions, but please check the **Jobs & Training page** on the MNRLP website for future postings:

<https://www.mnrlp.ca/jobs-training/>



TRAINING OPPORTUNITIES

In 2023, various training opportunities were offered at the site, including hands-on training during our revegetation trials, groundwater well installation, solar panel installation, and general Care & Maintenance operations. Additionally, heavy equipment operation training was offered in December. A total of 601 training hours were provided in 2023!

As we undertake new activities at site in 2024, we will continue to offer additional training opportunities whenever possible. You can **find a potential Future Job & Training Opportunities List on the MNRLP website here:**

<https://www.mnrlp.ca/jobs-training/>

Dates	Type of Training	Hours
June 7-8, 2023	Standard First Aid / CPR-C Course (Blended Online Training and 1-day In-Class)	14
July 13-14, 2023	Standard First Aid / CPR-C Course (Blended Online Training and 1-day In-Class)	14
July 17-18, 2023	Vegetation Planting	14
August 12, 2023	Standard First Aid / CPR-C Course (Blended Online Training and 1-day In-Class)	14
September 5-6, 2023	Student Field Trip (Aquatics Tag-Along)	20
September 16, 2023	Standard First Aid / CPR-C Course (Blended Online Training and 1-day In-Class)	14
October 1-9, 2023	Driller Helper Trainee (Groundwater Well Installation)	90
November 2-8, 2023	Solar Installation Trainee	73
November 8-13, 2023	Care & Maintenance Trainee	66
November 14-15, 2023	Driller Helper Trainee (Groundwater Well Installation)	20
November 22-27, 2023	Driller Helper Trainee (Groundwater Well Installation)	66
November 28-30, 2023	Care & Maintenance Trainee	32
December 2-11, 2023	Advanced First Aid Training	40
December 3-5, 2023	Groundwater Well Development Trainee	27.5
December 10-13, 2023	Care & Maintenance Trainee	37
December 7-13, 2023	Heavy Equipment Operation Training	21
December 18, 2023	Heavy Equipment Operation Training	2
December 12-15, 2023	Heavy Equipment Operation Training	37
Total LSCFN Training Hours In 2023		601.5
January/February 2024	Emergency Medical Responder Training	40
Total LSCFN Training Hours In 2024 (to date)		40

DEMOLITION & SALVAGE PLANNING

In 2024, MNRLP will continue planning demolition of the historic mill buildings and other existing infrastructure on site. A site salvage tour was undertaken in 2022 to determine if there were components people in the community were interested in salvaging, or if there was any value for pieces of steel and other commodity items. We are not planning a formal site salvage tour this year, but if community members are interested in visiting the site to see if there is anything they would like to salvage, please contact us to arrange a visit: info@mnrlp.ca



Have any questions?

Go to the Mount Nansen Remediation Project website:
www.mnrlp.ca