Land Use Permit MV2018C0011 Renewal Workplan

March 11, 2025

NWT RARE EARTHS JV - SUBMITTED BYNECHALACHO RESOURCES





Document details

Document title	Land Use Permit MV2018C0011 Renewal Workplan
Document subtitle	
Date	March 11, 2025
Version	
Author	Nechalacho Resources on behalf of NWT Rare Earths

Document history

VERSION	DATE	AUTHOR	COMMENTS
1.1	01.17.2025	S. Woolfenden	First draft
1.2	03.03.2025	S. Woolfenden	Draft for review
1.3	03.10.2025	S. Woolfenden	Amendments per Cllint Ambrose comments
1.4	03.26.2025	A. Blajchman – Avalon S. Woolfenden – Vital Metals	Review/comment from Avalon, amendments made to address
1.5	03.26.2025	S.Woolfenden	Removed draft for review, document to be submitted



NECHALACHO PROJECT

20025 - Five Year Work Program

CONTENTS

CONTENTS	3
TABLES	
FIGURES	4
OVERVIEW AND OBJECTIVES	6
LOCATION AND MINERAL TENURE	7
MINERAL TENURE	7
EXPLORATION AND DEVELOPMENT HISTORY1	2
WORK PROGRAM OVERVIEW1	3
EXPLORATION WORKPLAN1	3
BULK SAMPLE PROJECT1	5
AIRSTRIP EXTENSION24	4
SCREENING COMPARISON BETWEEN APPROVED AND PROPOSED WORKS20	6
CONCLUSION2	8
APPENDIX A29	9
Knight Piesold Memo dated Dec 20,2011 titled "Thor Lake Project – Phase 1 Quarry and Borrow Details	



TABLES

TABLE1 MINERAL LEASES, NECHALACHO	10
TABLE 2 MINERAL CLAIMS LIST, NECHALACHO	11
TABLE 3 List of Onsite Fuel Storage, NECHALACHO	22
TABLE 4 SUMMARY OF AUTHORIZED ACTIVITIES UNDER LAND USE PERMIT MV2018 COMPARISON WITH RENEWAL APPLICATION	
TABLE 5 LUP RENEWAL COMPARISON TO EXISTING 2018C0011	28
FIGURES	
8	
FIGURE 2 NECHALACHO PROJECT PROPERTY MAP (CLAIMS, LEASES,)	12
FIGURE 3 CURRENT MAP OF NORTH T ZONE LAYOUT	18
FIGURE 4 DRAWING OF 1 M TONNE OPEN CAST PLAN.	19
FIGURE 5 OVERLAY DRAWING 1 MT VS 600 KT OPEN CAST PLAN	19
FIGURE 6 ORE SORTING PLANT INITIAL INSTALLATION AT NORTH T	22
FIGURE 7 ORE SORTING PLANT AT NECHALACHO IN OPERATION AT NORTH T	22



Acronyms and Abbreviations

Avalon	Avalon Advanced Materials Limited
GNWT	Government of Northwest Territories
GSL	Great Slave Lake
JV	NWT Rare Earth Joint Venture
LUP	Land Use Permit
masl	Metres above sea level
Nechalacho or the Project	Nechalacho Rare Earth Element Project
North T-Zone	Nechalacho Upper Zone – North T Deposit
NWT	Northwest Territories
REE(s)	Rare Earth Element(s)
RL	(Relative Level) Pursuant to the Purchase Agreement, Nechalacho Resources has acquired from Avalon ownership of the minerals in, on or under the area of the Mining Leases from the surface to the depth limit of 150 metres above sea level using the Canadian Geodetic elevations from orthometric heights (HCGVD2013) as defined by the Natural Resources Canada using NNAD83(CSRS) with CGG2013 as the Geoid (the "Upper Zone") and Avalon has ownership of the minerals in, on or under the area of the Mining Leases below the Upper Zone (the "Lower Zone")
STOL	Short takeoff and landing
TREO	Total Rare Earth Oxide
Vital Metals	Vital Metals Ltd.



OVERVIEW AND OBJECTIVES

NWT Rare Earths is a jointly-owned special purpose vehicle held by Nechalacho Resources (formerly Cheetah Resources) and Avalon Advanced Materials Inc. ("Avalon") which holds and manages the permits and authorizations to operate the Nechalacho site. Existing MVLWB authorizations (MV2020D0013, MV2018C0011 & MV2020L2- 0010) previously held by Avalon were assigned to NWT Rare Earths, and this provides the JV companies the ability to individually operate on the Nechalacho site.

Both joint venture partners hold rights to the Nechalacho deposit and work individually towards the development of rare earth element mining projects at the Nechalacho site. Nechalacho Resources owns the rights to all the minerals in, on or under the area of the Mining Leases from the surface to the depth limit of 150 metres above sea level, this deposit is contained within several known mineralized zones collectively called the Nechalacho Upper Zone. Avalon owns the minerals below 150 metres above sea level referred to here as the "Lower Zone".

It is anticipated that new sources of supply of rare earth elements (REE) will be required to meet growing demand, especially in North America. Both the Nechalacho Upper and Lower zones host REE deposits which will be needed source of critical minerals.

Following the formation of NWT Rare Earth, Land Use Permit (LUP) MV2018C0011 was updated to include a bulk sample project containing REE mineralized rock from the North T-Zone. Currently, LUPMV2018C0011 is expiring in June of 2025, and as such NWT Rare Earths is seeking to apply to renew it. This approval provides authorization for the following activities:

- Mineral exploration, including diamond drilling, bulk sampling and trenching
- Use of heavy machinery and vehicles
- Use and storage of fuel
- Construction and maintenance of a camp
- Construction use and maintenance of trails and access roads
- Development of a quarries and
- Use of explosives
- Extension of existing airstrip

The objective of seeking a renewal to the existing permit is to provide both NWT Rare Earth JV companies the ability to continue with their existing operations and plans in alignment with the current approved scopes of works. Renewal of this permit will also ensure consistency in the site operation and regulatory compliance as well as maintain and update the existing financial security amounts held by the Government of the Northwest Territories (GNWT) under the LUP.

This document will outline the works and undertaking which are planned to occur in the next five years.



FIGURE 1 GENERAL LOCATION NECHALACHO PROJECT



LOCATION AND MINERAL TENURE

The Nechalacho Project is situated approximately 5 km north of the Hearne Channel of Great Slave Lake and approximately 100 km southeast of the City of Yellowknife.

The project is located within the traditional territory of the Akaitcho Dene First Nations including the Yellowknives Dene First Nation, Deninu Kue First Nation and the Łutsël K'é Dene First Nation and within the Akaitcho Territory land claim area which is subject to an interim agreement with the federal government. The site is located within *Mowhi Gogha de Niilee* as defined under the Tlicho land claim agreement as well as the traditional territories of both the Northwest Territory Métis Nation and the North Slave Métis Alliance.

The Blachford Lodge tourist facility is located approximately 5km to the north.

MINERAL TENURE

On June 24, 2019, Avalon announced that it had entered into a definitive agreement with Vital Metals to transfer ownership of the near-surface mineral resources on the Project (above 150 m RL). This agreement was later announced to be finalized (Avalon News Release dated 30 October 2019), and on February 6, 2020, the completion of a co-ownership agreement was announced. Nechalacho Resources Pty Ltd. acquired ownership of the near-surface resources



of the Project, including the Upper Zone, and a jointly -owned special purpose vehicle to hold and manage the permits and authorizations to operate at the site was created.

The Nechalacho property is comprised of five contiguous mining leases totaling 10,449 acres (4,249 hectares).

Nechalacho is located on Mineral Leases NT-3178, NT-3179, NT- 3265, NT-3266, NT-3267, NT-5534, NT-5535, and NT-5561 are described on the NWT's Mining Recorder's Office Mineral Tenure Web Map as being actively held by Avalon Advanced Materials Inc. (50%) ("Avalon") and Nechalacho Resources Corp (50%) with expiration dates ranging from May 21, 2027, to October 24, 2039.

On November 25 and 26, 2024, three new mineral claims (M11875 to M11877) were acquired measuring 11.50 km² (1,150 ha), 7.61km² (761 ha) and 5.95km² (595 ha), and are 100% owned by Nechalacho Resources Corp.



Table 1 Nechalacho Resources and Avalon co-owned Mineral Leases, Nechalacho

Lease number	Status	Start of term	Expiry	NTS	Lot	Acres	Hectares
3178	1st Renewal	May 22-06	May-22-27	85102	1001	2,602	1,053
3179	1st Renewal	May 22-06	May-22-27	85102	1000	2,321	939
3265	1st Renewal	March-02-08	March-02-29	85102	1005	906	367
3266	1st Renewal	March-02-08	March-02-29	85102	1007	2,100	850
3267	1st Renewal	March-02-08	March-02-29	85102	1006	2,570	1,040
TOTAL						10,499	4,249



Table 2 Nechalacho Resources 100% owned Mineral Claims List, Nechalacho

Claim name	Number	NTS	Date Staked	Due Date	Area		Status
		Location			acres	hectares	
THL01	M11875	8212	25-Nov-2024	25-Nov-2026	2,841	1,150	Active
THL02	M11876	8212	25-Nov-2024	25-Nov-2026	1,880	761	Active
THL03	M11877	8212	25-Nov-2024	25-Nov-2026	1,470	595	Active
TOTAL					6,191	2,506	



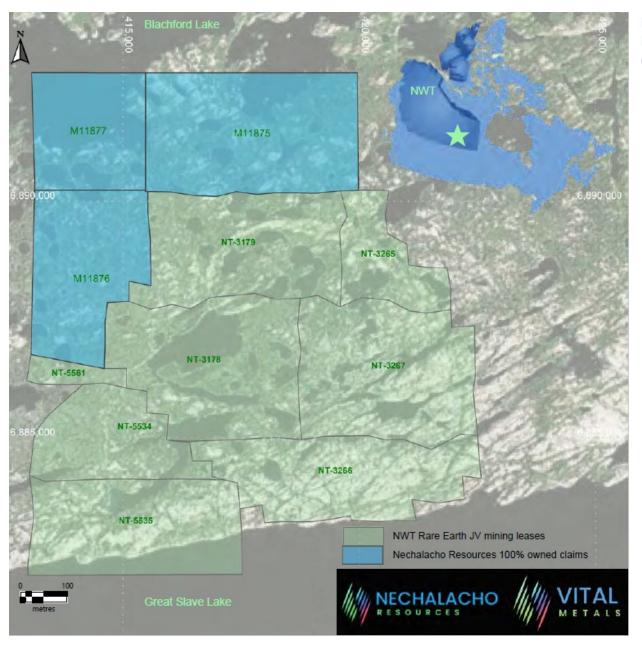


FIGURE 2 NECHALACHO
PROJECT PROPERTY MAP
(CLAIMS, LEASES, ACCESS)



EXPLORATION AND DEVELOPMENT HISTORY

Metal mineralization was first discovered in the Thor Lake area in 1976 with the discovery of the T-Zone. The first drilling was carried out on the property in 1977-78. Avalon acquired the property in 2005. Since then, an estimated \$100 million has been invested by Avalon in exploration and development work on the property.

The Upper Zone was previously evaluated on two occasions for its potential as a primary tantalum resource, but tantalum mineralization proved too refractory for conventional processing techniques and further development work was not initiated. Mineralogical studies on the Upper Zone samples revealed that mineralization also contained significant quantities of REE mineralization including yttrium as well as niobium and zirconium, but there was insufficient demand for REE's in the 1980s to justify evaluating the deposit purely as a REE resource.

The Basal and Upper Zone Deposits were originally drilled during campaigns dating back to 1977-79, 1980-81 and AVL then drilled again in 1988 and continuously from 2007 to 2014. In May of 2007, a positive Preliminary Economic Assessment was completed, followed by the issuance of the first type A Land Use Permit, MV2007C0039, in July 2007.

By June 2010, a positive Prefeasibility Study was completed, and in July of that year, a 5-year Land Use Permit, MV2011C0006, was issued. In June 2012, an airport extension Land Use Permit, MV2012G0005, was issued to Avalon.

Avalon continued to work on the Nechalacho lower zone project, also referred to as the 'Thor Lake Project' and in April of 2013, released a positive Feasibility Study and by July 2013, the Mackenzie Valley Environmental Impact Review Board had completed an Environmental Assessment and recommended approval.

In 2019, Nechalacho Resources purchased the top portion of the Nechalacho property down to 150 RL and leased the Avalon exploration camp. In 2019 it conducted a limited resampling and drilling campaign at North T-Zone.

Between 2020 and 2024, North T-Zone Permitting Activities were conducted. In 2021, Nechalacho Resources initiated extraction of rare earth mineralized rock through a bulk sample at the North T-Zone with the intention to send it to a demonstration plant in Saskatoon. The demonstration plant was not completed, and the extracted rock was subsequently sold to the Saskatchewan Research Council in June of 2024.

Tardiff exploration activities, were initiated by Avalon in 2013 and were then continued by Nechalacho Resources upon purchase of the deposit. In 2022 and 2023 drilling at Tardiff totaled 110 drill holes. In 2024 Nechalacho Resources conducted metallurgical test work on the upper Tardiff resource to produce a new MRE and scoping study for Tardiff. It also conducted a small reconnaissance mapping and sampling program to collect surface samples to assist with building a property scale map and investigate additional commodities.

.



WORK PROGRAM OVERVIEW

NWT Rare Earths is seeking to continue advancing studies and operations on the jointly held Nechalacho leases and 100 % owned Nechalacho Resource claims to advance towards full scale development of the contained mineral resources. This includes studies which focus on continuing exploration of the deposits and technical work which further develops REE low impact extraction and processing at sites such as the North T-Zone and Tardiff. This will include work intended to improve and expand dry separation on site and reduce the need for tailings generation. All comprehensive work plans have been developed to incrementally drive the project forward towards a feasibility level study.

The workplan describes three main areas of focus which encompasses the past work and future activities to be captured within a renewed LUP process. These include:

- Exploration Activities
- Continuation of Bulk Sample Project
- Runway Expansion as previously permitted

Tables 3 & 4 document how these plans align with previous workplans and approvals to demonstrate how the workplan proposed here is a continuation and/or aligns with previously screened, reviewed and approved scopes of work.

The work programs described here are subject to change according to the progress of prior stages in the project and financing. However, it is anticipated that the activities and quantities (water, fuel, manpower) will not appreciably change from the descriptions provided within.

EXPLORATION WORKPLAN

Nechalacho is planning an exploration program for the Nechalacho Upper Zone Project, with a goal of advancing toward development of mineral resources. Work will be planned annually and will depend on the success of the previous year's program and market conditions. Over the next five years, activities will include re-sampling and relogging of existing diamond drill core, trench sampling, diamond drilling, and bulk sample collection for advanced metallurgical and processing test work. Some quarrying and/or use of borrow sites may occur to maintain the existing road network supporting the exploration activities.

The program will focus on two main areas: the T-Zones and Tardiff.

North and South T-Zones

In the North T-Zone, work will focus on delineating the resources for continued bulk sample extraction of REEs, including re-evaluation of historic drill holes and mapping of the pit walls. Drilling will continue within and outside the pit to explore possible extensions of REE mineralization and to further define the resource. The current 600 Kt bulk sample pit design will be re-evaluated and possibly expanded to the 1 Mt option as a result.



The South T-Zone will be drilled to evaluate REE and Niobium resource potential and the potential for resource expansion. This will include drilling of up to 75 drill holes per year for the next 2-3 years, including oriented drilling, to assist with developing a potential geological and resource model. Surface exploration mapping and prospecting will be conducted around North T-Zone and include the recently staked and 100% mineral claims (M11875-M11877). Geophysical surveys and/or Lidar may be conducted in years 2 or 3.

Tardiff

In the Tardiff area, work will focus on continued resource development to bring the project to a Feasibility category within the constrained pit model. This will include extensive drilling to convert inferred to indicated resource categories. Drilling will likely include up to 75 holes per year for the next 3-5 years and will be inclined and oriented to improve the accuracy of the geological model and resource model. Metallurgical sampling will likely be based on drilling and potentially test pits. Location and size of test pits will be based on improved geological model and requirement for variability testing. Test pits are not anticipated to commence until year 2 or later. Possible down hole drill surveys will be used to collect additional data for engineering and other geological modelling. There will be continued geological mapping of the mining leases to define the limits of Tardiff mineralization. Should possible extensions to the mineralization be discovered within NWT Rare Earths leases and/or Nechalacho claims, exploration for REE and Nb mineralization potential will be included. Surface surveys will be conducted to establish topography and other impacts on the resource and potential mine development.

Supporting Work

The following works will be required to support the Exploration Program:

- Quarrying and/or use of borrow sites to maintain the existing road network
- Drill access trails will be required throughout all operating seasons
- Corduroying or similar techniques will be employed to prevent rutting or gouging to the underlying ground surface."

Some hydrogeological and geotechnical programs environmental studies will be initiated alongside exploration programs to confirm existing baseline conditions, make comparisons to past studies and address gaps in knowledge.



BULK SAMPLE PROJECT

Introduction

Nechalacho's first phase of work for the Nechalacho Upper Zone consisted of the small-scale bulk sample project and enabling infrastructure which commenced in March of 2021. Extraction activities started in May of 2021 with the removal of overburden and sorting commenced in June of that year and continued until October 2, 2021. Demobilization from site occurred on the last barge of the season. The project did not extract and/or process the full volume of mineralized material planned and several sorted and unsorted stockpiles remain at site. Going forward Nechalacho Resources plans to restart the bulk sample extraction at North T-Zone.

This document provides an updated work plan for the bulk sampling at the North T-Zone. Additional approvals held by NWT Rare Earth covering activities on the site are Land Use Permit MV2020D0013 and Water Licence MV2020L2-0010, issued by the Mackenzie Valley Land and Water Board (MVLWB) are not affected by this LUP renewal request

Planned Works

Nechalacho Resources will focus on completing the bulk sample extraction from the Upper zone through a return to operations. Within the previously cleared North T-Zone of operations (Figure 3), the small scale open-cast bulk sample, dry separation, and transportation activities will be reinitiated. The mineralized bastnaesite (rare earth fluoro carbonate mineral as well as other rare earth minerals) in a quartz matrix, will be sorted with a Tomra COM TERTIARY XRT Sensor Based Sorter.

Consistent with 2021 works, the sensor-based Ore Sorter allows seasonal operation without process water or reagents. Feed preparation will again be carried out by screening and crushing to a particle size of 8-60 mm. As grinding is not required, coarse reject material will be produced rather than a 'conventional' fine tailings. The ore sorter requires an accurate feed system as well as discharge conveyor systems for the two discharge streams. Future sorting works may be optimized through the addition of different sized screens or sorting processes within the current area of operations.

The beneficiated REE material produced from the sorting process will be transported by barge or ice road to Hay River or Yellowknife and then further to an off-site process plant. Additionally, existing sorted stockpiles may be bulk loaded into sea cans or directly onto barges and transported offsite as feed for demonstration scale processing programs.

The current layout of North T-Zone bulk sample operations and infrastructure is shown in Figure 3. This layout is based on the originally approved 600,000 kt design. Based on additional open-cast pit planning work completed in 2021/2022, the company is now proposing a minor expansion of the existing footprint to be a 1 Mt tonne configuration. This is outlined in the pit shell drawing Figure 4 while Figure 5 demonstrates the small expansion of the 1 Mt pit (in blue) beyond the existing 600,000 kt plan. Detailed design and bulk sample plans will be submitted to the GNWT, MVRB and WSCC as needed to support regulatory requirements.



The purpose of the Bulk sampling operations is to:

- optimize the environmentally benign Sensor-Based Ore Sorting and other physical separation equipment on a rare earth resource in the economically important bastnaesite and other REEs minerals found at the Nechalacho site.
- Provide Nechalacho with a continuous bulk sample of a dry separated rare earth mineral concentrate for additional downstream metallurgical testing at an off-site for optimization testing, piloting and demonstration scale processing.
- Further optimize and demonstrate the ability to establish 'low impact' open-pit extraction and sorting operations, which use minimal water and no reagents.
- Demonstrate the ability to stockpile and reuse benign non-mineralized rock for future site construction activities. Additional work will be completed to evaluate a non-waste approach and determine potential uses for any waste material.
- Demonstrate to global markets the ability of the Nechalacho site specifically and the Northwest Territories generally to supply critical minerals.
- Demonstrate environmental sustainability and community acceptance.
- Provide 'on the job' training to employees on small scale operations in preparation to take leadership roles in future larger scale operations contemplated for the Upper Zone and AVL Lower Zone resource.



Figure 3 – Current North T Zone Layout





Figure 4. - Drawing of potential 1 M tonne open-cast plan

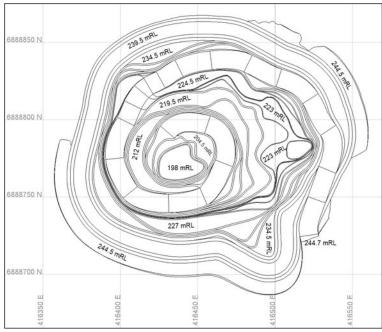
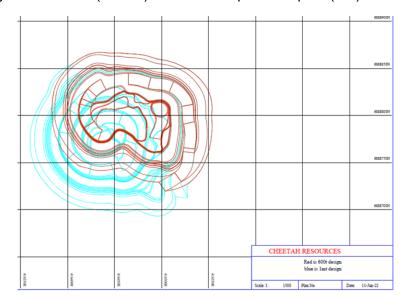


Figure 5. Overlay of 1 M tonne (in blue) over 600 kt open-cast plan (red)





North T-Zone - Environmental Management Plans

Nechalacho has updated management plans approved under the current Land Use Permits and will ensure all management plans approved under MV2020D0013, and Water Licence (MV2020L2-0010) are amended as needed to align with the proposed work.

This includes:

- Engagement Plan
- Explosives Management Plan
- Waste Management Plan
- Spill Contingency Plan
- Erosion and Sediment Control Plan.
- Waste Rock Management Plan
- Geochemical Characterization Plan
- Wildlife Effects Monitoring Plan
- Closure Reclamation Plan

Mobilization

To transport equipment and materials to the North T-Zone, an ice road may be constructed from Yellowknife to the existing barge landing on Great Slave. The ice road will also be used for mobilization of the contractor's equipment to the site. NWT Rare Earth acknowledges that the Łutsël K'é Dene First Nation, travel a similar route across Great Slave Lake during winter snowmobile trips to Yellowknife. NWT Rare Earths will engage the community during the planning, development and use of the winter road to facilitate both the community and company activity. The existing road network onsite will be used to move equipment from the Great Slave Lake barge landing site to the project site. Crew changes will occur by charter aircraft from Yellowknife. Additional equipment and materials may alternatively be mobilized in the summer by barge on Great Slave Lake either from Hay River or Yellowknife.

Camp

NWT Rare Earths will continue to use the existing and permitted 40-person exploration camp at Thor Lake for the bulk sample project. While Nechalacho is not planning to materially expand the existing camp, the setup of a larger 5 m x 6 m dry, and upgrade of some existing buildings may occur. Other camp improvements may be conducted but at no time will the exploration camp capacity exceed 50 persons.

Open-pit Surface Extraction Operations

The bulk sample that was initiated through a small-scale, open-cast surface extraction operation will be restarted. The program will provide opportunities for local contractors and consist of:

- Limited clearing, grubbing and top-soil removal where necessary as the site footprint is well established
- Grade control
- Drilling and blasting with up to 1400 kg of ANFO or emulsion per day
- Use of the current water storage pond



- Establishment and/or maintenance of any required safety berms
- Continued excavating and hauling overburden and host rock material to temporary stockpiles for ongoing and subsequent use in infrastructure development
- Excavating and hauling mineralized material to stockpiles for crushing and sorting with the sorted rare-earth higher-grade concentrate removed by barge or winter road for processing off-site
- Rehabilitation works, as per the Closure and Reclamation Plan filed with MV2020D0013 and Water License MV2020L2-0010

The bulk sample operation will extract a total of approximately 600,000 tonnes (t) with the potential to increase to 1 M tonnes of rock from the single open cut that was started in 2021. Extracted rock will be classified for two uses:

- Mineralized rock: Approximately 120,000 t of undiluted mineralized rock will be excavated, screened and sorted.
 - The sorted rare earth ore may be transported in summer via barge trips on Great Slave Lake per summer to Yellowknife or Hay River, or in winter via ice road to Yellowknife.
 - The remainder will be used for site infrastructure or stockpiled along with the nonmineralized rock.
- 2) Non-mineralized rock: Approximately 970,000 t of non-mineralized rock will be used as aggregate for site infrastructure. Previously, most non-mineralized rock generated was used to build the water control pond structure at North T-Zone. Future uses of this material include upgrading of roads and airstrip improvements or stockpiled on-site. The Waste Rock Management Plan will be updated to provide additional information on stockpiles once plans for pit expansion are finalized.

Supporting Work

The following works will be required to support the Project:

- Construction, maintenance, use and upgrading of site roads, letdown areas and pads
- Development of sand and hard rock quarries
- Construction or maintenance of sediment erosion control structures
- Construction or maintenance of water management structures to store water from the open-cast pit and seepage from rock storage
- Possible upgrading and lengthening the existing all-season airstrip and aprons
- Upgrade, operation and maintenance of the existing exploration camp
- Continued use of the installed diesel fuel storage tanks and storage of fuel
- Establishment of temporary power supply
- Temporary storage of explosives and Ammonium Nitrate
- Crushing and/or use of rock for site preparations



- Construction of concrete foundation for infrastructure
- Construction of settling ponds, if required

Mobile Equipment

Consistent with the bulk sample extraction work which occurred in 2021 and 2022, mobile equipment will be required for the Bulk Sample Project and the equipment is listed in the Land Use Permit application. The actual fleet brands and models will be confirmed in consultation with the primary contractor.

Crushing, Screening, and Sorting

The initial process flowsheet will principally be maintained with some optimization sought to improve past performance. The ore sorting will be screened on a double screen at 60 mm and 8 mm. The +60 mm material will be crushed to -60mm with the crushed rock returning to the double screen. The -8mm material will be stockpiled for processing at a later stage. Material between 8 and 60 mm will be further screened at an intermediate aperture to produce two particle sizes for feed to the Sorting Plant. Each of the sizes will pass through the Sorting Plant to upgrade the material. Final rejects from the Sorting Plant will be stockpiled for use for other aspects of the Project. Potential flowsheet enhancements include the addition of screens and changes to fraction sizes. Changes to the ore sorter process are not anticipated to impact on the local environment around the North T site.

Photos of the sorting plant used at the North T-Zone are provided in Figure 6, and Figure 7. The installed electrical power for the sorting plant is expected to be about 250 kW, supplied by diesel generators.

Fuel Storage and Use

Bulk fuel storage of 491,000 litres of diesel fuel will be consistent with the current approvals, including MV2020D0013 and MV2020L2-0010. Additional fuels to be stored onsite and the details are outlined in Table 3. below:

Table 3: List of onsite fuel storage

Type of Fuel	Number of containers	Capacity of containers	Type of container	Proposed storage or staging location(s)
Diesel	200	205 litres each		Camp fuel berm cache or other laydowns throughout the property.
Gasoline	10	205 litres each		Camp fuel berm cache or other laydowns throughout the property.
Avgas/Jet Fuel	7	205 litres each		Camp fuel berm cache, airstrip or other laydowns throughout the property.
Propane		20-100 pounds each	Drum	Camp
Diesel	4	,	Double-walled fuel tank	Airstrip





Figure 6: Ore Sorting Plant initial installation at Nechalacho North T Bulk Sample Project



Figure 7: Ore Sorting Plant in operation at Nechalacho North T Bulk Sample Project



Water Usage

Process water is not required for the Sorting Plant. Site water usage will be limited to dust suppression and camp water requirements. This also means there will continue to be no processed water discharged from the plant, therefore no evaporation or tailings ponds are required. The Sorting Plant also does not require any chemicals or reagents.

Water withdrawal from Thor Lake or Great Slave Lake for camp use will be less than 100 m³ per day (the equivalent of five community water trucks). Water will be discharged to the locations approved under the Water Licence MV2020L2-0010. Existing watercourses will remain undisturbed by the bulk sample footprint. The water control pond will continue to be used to hold and settle water from the open-cast and seepage from the rock storage areas prior to discharge according to the effluent quality criteria defined in the water Licence.

Site Access and Maintenance

The North T Zone site will continue to be accessed via an ice road from Yellowknife to the barge landing at Great Slave Lake and then the existing all-season roads or winter trails from the barge landing (Figure 2). Alternatively, the site will also be accessed by barge at the barge landing site, ice road, helicopter, wheeled and float aircraft.

Portions of the existing road between the barge loading/unloading area and the airstrip, camp, and open-cast areas will be upgraded or maintained as necessary to facilitate safe and efficient vehicle and equipment transportation. Should it be required for the movement of larger equipment, winter road portages may be required throughout the land use area and will be constructed with a minimum of 10 cm of ice/snowpack.

Some minor realignments to the existing roads may also be required to improve the transport of equipment or material. Per the Erosions and Sediment Control Plan, silt fences (or equivalent erosion control measures) will be employed to prevent sediment release in watercourses. Embankment slope compaction, texturing, rip-rapping and active re-vegetation techniques will be employed as necessary to minimize potential erosion and sedimentation associated with development. All erosion and sediment control structures will be periodically monitored and maintained to ensure proper functioning.



AIRSTRIP EXTENSION

Should the results of the exploration program and Bulk Sample Project warrant additional flight capacity and transport capabilities, NWT Rare Earths may require the previously planned extension of the airstrip to facilitate safe landing of aircraft on wheels and enable work in all four seasons.

The LUP for this work was first applied for and received on March 29, 2012, as LUP MV2012G0005 authorizing Avalon to extend the existing airstrip. Avalon did not renew this permit when it expired on March 28, 2017, but did include the proposed extension again in the application for MV201800011.

The construction of the airstrip is estimated to require 23 personnel. The extension may include additional quarrying and haulage of rock and gravel to the airstrip site. While it is unlikely that the airstrip extension will occur at the same time as the exploration program or bulk sample project activities, the existing camp limit of 50 people and the water limit of 100 cubic meters/day will not be exceeded even if there is some overlap of the work. Fuel needs should be readily managed with the existing storage capacity onsite.

It is requested that the financial assurance component of this work be phased such that it is timed with and commensurate with the project proceeding. That is, the financial payments for the airstrip extension will not be required until the decision to extend it has been made and communicated with the GNWT.

The approval will entitle NWT Rare Earths to conduct the following activities:

- Extension of existing airstrip,
- Access road construction,
- Development of sand and hard rock quarries
- Use of equipment, vehicles and self-propelled power-driven machines,
- Establishment of a fuel cache(s), and
- Use of explosives.

In addition, a quarry permit which was also previously screened, issued and subsequently relinquished will likely be needed to provide aggregate for the runway extension. It is noted that road and airstrip construction has historically been completed within the limitations of the Land Use Permit. NWT Rare Earths will ensure that this will continue with appropriate scheduling to ensure that the camp, fuel and water use limitations are not exceeded. The quarry and runway extension plan will be consistent with the Knight Piesold Memo dated Dec 20,2011 titled "Thor Lake Project – Phase 1 Quarry and Borrow Details" appended to this workplan.

NWT Rare Earths requests that the airstrip extension be included in this Land Use Permit renewal, as it is necessary to improve operation conditions of the airstrip when used on a regular basis. NWT Rare Earths requests that this be granted as follows:

- NWT Rare Earths will review and update all quarry, and airstrip plans and specifications for the runway extension to ensure compliance with all aeronautic regulations and standards.
- NWT Rare Earths requests from the MVLWB that the additional security required will be filed only after the decision to proceed with the airstrip is made and notification given by NWT Rare Earths to the MVLWB of that decision.



- NWT Rare Earths may require additional permits to develop and extract from an additional quarry area to supply aggregate\
- No work would proceed without these conditions above being satisfied.



SCREENING COMPARISON BETWEEN APPROVED AND PROPOSED WORKS

Overview

Table 4: Summary of Authorized Activities under Land Use Permit MV2018C0011 and Comparison with renewal application

Approved Activities	MV2018C0011	Renewal Application within Scope of an Existing Land Use Permit?	Previously screened activity
Mineral exploration,	Open-cast surface extraction of a	Yes, although increased in scale	Yes
including diamond drilling, bulk sampling and trenching	600,000-tonne bulk sample	to 1 M tonne potential extraction	
Use of heavy machinery and vehicles	2 excavators, 3 articulated trucks, 2 drills, 1 front-end loader, and 1 dozer used for bulk open-cast surface extraction operations. A 250-kW generator, jaw crusher, cone crusher, ore sorter, and two screens are required for ore sorting operations.	Yes, the equipment list provided in the application aligns with the previous list with additional mobile fleet added to support the bulk movement of stockpiles off the site and provide winter trail work that was previously required.	
Use and storage of fuel	Storage of 491,000 litres of diesel and other fuels	Yes, no change from current LUP	Yes
Construction use and maintenance of a camp	No change: use, maintenance and upgrade of existing 50-person exploration camp.	Yes, no change from current LUP	Yes
Construction use and maintenance of trails and access roads	No change: use and maintain existing roads. Minor realignments to existing roads may be required	Yes, no change from current LUP	Yes
Development of a quarry	Yes, development of sand and/or hard rock quarries to support the bulk sample and airstrip extension	Yes, no change from current LUP	Yes
Use of explosives	1,400 kg of ANFO or emulsion used per day	Yes, no change from previous LUP	Yes
Extension of existing airstrip	Extension of existing airstrip consistent with permit to 1000 m	Yes, no change from current LUP	Yes



Table 5: LUP Renewal Comparison to existing MV2018C0011

Characteristic	2018C0011LUP	2025 LUP Renewal
	Construction: 3-6 months	Potential for continued operation of
Project Schedule	Operation: 3 years	the North T bulk sample
Footprint Total	20 hectares (including previously disturbed land)	No change to approved footprint
Product	Rare earth ore bulk sample	Rare earth ore bulk sample
Footprint Tailing Facility	Not required	Not required
Underground Mine	Not required, though portal to underground is already approved	Not required
Quarry	Airstrip and Road Maintenance & Extension work	Airstrip and Road Maintenance & Extension/Development
Bulk Sample - Open-cast	Excavation 600,000 tonnes	Excavation up to 1 M tonnes
Final Effluent Treatment Location	Not required	Not required
Mine Waste Rock Dump	During construction only	No change
Surface Ore Stockpile	Smaller temporary on-site footprint	No change
Mine Life	Bulk Sample Project: 3 years	Duration of LUP
Concentrator	Sensor-Based Ore Sorting Plant only, no reagents, no water use other than dust control	Continued use of Sensor based ore sorting plant and other low small-scale sorting
Mineral Concentrate Storage	Use of bulk bags or containers.	Continued use of bulk bags, sea can containers, or potential bulk material transport
Site water collection	May require up to 2 site collection ponds.	Continued use of current water control pond
Transportation	Barge, aircraft, ice road	Barge, aircraft, ice road
Incinerator	Yes	Yes
Landfill	None	None
Airstrip	Possibly increase to 1,000 m	Maintain option to increase runway to 1,000m
Camp - Construction	Not required, using existing exploration camp	Not required, use existing exploration camp
Camp - Operations	Use existing exploration camp	Use existing exploration camp
Diesel storage	491,000 litres	Maintain 491,000 litre capacity
Power Generation	250 kW	Continued 250kW
Sewage Treatment	Pit and composting toilets. Grey water into sump	Pit and composting toilets. Grey water into sump
Explosives Supply	No explosive manufacture facility on site, storage only use of up to 1400 kg per day	No explosive manufacture facility on site, storage only use of up to 1400 kg per day
Personnel	Maximum 35	Maximum 50



CONCLUSION

This document provides a work plan for the renewal of LUP MV2018C0011. The scope of work is largely unchanged from the allowable activities, limits and conditions of Land Use Permits MV2018C0011, MV2020D0013 and Water Licence MV2020L2-0010. Land Use Permit MV202D0013 and Water Licence MV2020L2-0010 will be assessed and renewed or modified as required to support the needs of NWT Rare Earths.



APPENDIX A

AFFLINDIA	
Knight Piesold Memo dated Dec 20,2011 titled "Thor Lake Project – Phase 1 Quarry and Borrow Details	