Nechalacho

2021: YEAR ONE AT CANADA'S FIRST RARE EARTH MINE

vital METALS

CHEETAH RESOURCES

Nechalacho Project

A STRATEGIC NWT RESOURCE FOR A HIGH-TECH WORLD

On July 21, 2021, to the beat of Dene drums, a steady stream of high grade rare earth ore spilled from a rolling conveyor belt into a one-tonne shipping bag. It was a great day, marking Canada's first producing Rare Earth Element mine. It unlocked the potential for the NWT and Canada to become an important source of responsibly-mined essential metals for the world's high-tech industries.

Cheetah Resources' first five month summer season saw the successful mining of 5,000 tonnes of bastnaesite ore from the North T Zone's estimated 105,000 tonne resource. A custom-built TOMRA sorter processed 1,000 tonnes of separated ore, half of which has been shipped to Saskatchewan for further processing. The sorter's performance exceeded expectations and is converting waste rock as additional ore.

Mining and concentrating of the North T deposit will continue over the 2022 to 2024 seasons. This is all a prelude to opening the nearby Tardiff zone as early as 2024. This much larger REE deposit, estimated at 95 million tonnes of ore, orders of magnitude larger than North T, will be mined and sorted using the methods demonstrated at Nechalacho. Exploratory drilling continues to delineate Tardiff's potential as a year-round, multi-generational producer.

Environmental Advantage

Ore is mined and processed on site without water or chemicals. No toxic tailings are produced, and the mine's carbon and physical footprints are much smaller than conventional mines.

Social Advantage

Cheetah Resources fosters strong community engagement. The 2021 workforce was more than 70 per cent Indigenous and 85 per cent northern, supported by 162 NWT businesses.

Governance Advantage

We comply with or exceed high standards set for corporate board and management performance. Our mandatory Covid vaccine policy was the first at an NWT mine.

Rare Earth Elements: Where are They Used?

Bastnaesite REE ore from Nechalacho hosts all 17 rare earths, including neodymium and praseodymium, essential to the development of electric vehicles and renewable energy technology.

Rare Earth Elements: Where are They Commonly Used?

SCANDIUM – Aerospace components

YTTRIUM – Spark plugs, cancer treatments, etc.

LANTHANUM – Camera lenses, battery electrodes, etc.

CERIUM – Oxidising agent, glass/ ceramic colouring, etc.

PRASEODYMIUM – Magnets, lasers, goggles, etc.

NEODYMIUM – Magnets, Lasers, electric motors, etc.

PROMETHIUM – Nuclear batteries, luminous paint, etc.

SAMARIUM – Magnets, lasers, control rods for nuclear reactors, etc.

EUROPIUM – Phosphors, Fluorescent lamps, stabiliser of fuel cells, etc.

GADOLINIUM – X-ray tubes, computer memory, etc.

TERBIUM – Fluorescent lamps, stabiliser of fuel cells, etc.

DYSPROSIUM – Magnetostrictive alloys, hard disk drives, etc.

HOLMIUM – Lasers, wavelength calibration standards, etc.

ERBIUM – Infrared lasers, fibre-optic technology, etc.

THULIUM – X-ray machines, metal-halide lamps, etc.

YTTERBIUM – Stainless steel, nuclear medicine, earthquake monitoring, etc.

LUTETIUM – PET scan detectors, LED light bulbs, etc.

KT Graphic – sources: Geology.com, News Investing, and KT Research.

Essential - Critical - Strategic

DEMAND FOR RARE EARTHS SURGES

In today's high-tech world, virtually everything that moves, computes, or communicates has some rare earth element (REE) inside it. Mobile phones need REE to display and process commands, while powerful 'neomagnets' alloyed with REE are essential to medical technology and green-energy wind turbines. The demand for these magnets alone will surge by between 10 and 30 times by 2030. Rare earths are transforming the burgeoning electric vehicle market, forecast to grow from 30 million vehicles today to 125 million by 2030.

The world will need many more good deposits of rare earths to meet this critical demand. Through its Nechalacho and Saskatchewan projects, the first of their kind in Canada, parent company Vital Metals has the opportunity to be the best value producer of mixed rare earth oxide (both light and heavy) outside of China. Vital's progress could make it "the most substantial independent source of clean mixed rare earth feedstock outside China," said the Financial Times of London in content published in 2021.

Electric vehicles are making an impact around the world, even in the North. Electric and conventional fuel vehicles all depend on rare earths, particularly for traction motors to replace gas engines.

Diavik Diamond Mine

Rare earths are the heart of wind turbines. Diavik Diamond Mine's windfarm, installed in 2011, saves about 75 truckloads of diesel a year.

Firmbee.com

Cell phones, medical instruments and computers rely on rare earths for screens, memory, communication and diagnostic magnets.

Vital Metals: A Global Vision

PROGRESS LED BY CANADIAN POTENTIAL

Key players from leading REE companies had a vision for what was needed for a successful REE supply outside of China. Led by Geoff Atkins, they created Cheetah Resources PTY in 2018 and launched a global search of over 400 deposits. This led to the acquisition of Wigu Hill in Tanzania and Nechalacho in the Northwest Territories.

In order to gain rapid access to capital, Cheetah in 2019 executed a reverse takeover of Vital Metals Ltd., an Australian stock exchange-traded company incorporated two decades earlier. This established Vital as the publicly traded parent (ASX:VML) of Cheetah Resources, and subsequently its acquisition of the Kipawa and Zeus deposits in western Quebec.

To advance its supply chain strategy, Vital Metals is investing an initial $20 million in Phase One of its Rare Earth Extraction Facility in Saskatoon, Saskatchewan. Phase One will begin production in the second half of 2022, producing a mixed REE carbonate product for Norwegian and US rare earth separation facilities.

With key resource and processing holdings in Canada, property in Africa, and customers in the United States and Europe, Vital's decisions over just four years have positioned it to be a global leader in the supply of strategic elements.

Night shift operators at Nechalacho, Sept 2021.

Nechalacho Milestones

1970	Polymetallic deposit discovered
1995	Avalon Ventures begins REE exploration, invests $100 million
2000	YKDFN grants permission to use Indigenous Name: Nechalacho
2018	Cheetah Resources Corp founded in Australia
2018	Cheetah acquires mining rights to upper zones of Nechalacho; Avalon retains deeper (Basil) zone.
2019	Vital Metals founded as global REE developer, Cheetah becomes subsidiary
2020	Cheetah opens Yellowknife office, mobilizes for site preparation at Nechalacho
2021	YKDFN-owned Det'on Cho Corporation contracted to mine and crush North T deposit
2021 Feb	130 km winter road opened, fuel, equipment and TOMRA sorter hauled to site
2021 April	First blast begins mining at North T
2021 July	TOMRA sorter commissioned
2021 August	Construction of Vital's Rare Earth Extraction Facility begins in Saskatoon
2021 Oct	5000 tonnes mined, 500 tonnes of sorted ore barged to Hay River, railed to Saskatoon for processing
2021 Oct	Operations paused for winter.
2022 Feb	Delineation drilling program at Tardiff
2022 Spring	Sorting operations resume

Consulting Geologist Chris Pedersen at the site of his Nechalacho discovery in 1970.

Diamond drilling at Nechalacho's Tardiff zone in 2010.

Decades of valuable drill core are stored at Nechalacho.

Applying low-impact mining methods reduces Nechalacho's environmental footprint.

The Environmental Advantage

A CLEANER, SMALLER MINE LEAVES NO TAILINGS

Nechalacho is a new generation of mine with a big advantage over most others. No water or chemicals are used in the sorting that creates the concentrate and no toxic tailings are produced.

Once mined from the open pit, the ore is simply crushed to pebble size and run through a computerized, portable, custom-built sorter. It uses proven X-ray and air jet technology to separate the heavy, reddish REE ore from the lighter, white quartz host rock. The sorted concentrate Is packed into one-tonne megabags ready for shipping, while the benign country rock is piled at site. No new large structures or containment buildings are needed for the 2021-24 project.

Future operations for an expanded Nechalacho program also have a number of environmental advantages. Seasonal ice roads and barge shipping on Great Slave Lake means overland roads – expensive and environmentally impactful – will not be needed. An existing airstrip may be upgraded for larger, more efficient year-round aircraft service. The site is also within reach of the proposed Taltson hydroelectric expansion, an advantage that would considerably reduce the mine's greenhouse gas impact and energy costs.

Environmental Officer Cody Drygeese of the Yellowknives Dene First Nation ensures compliance with land use permits.

A sub-arctic sunset over Thor Lake, site of Cheetah Resources' 40-person camp.

Mine Manager Clarence Pyke and sorter operator Jeremy Catholique at the TOMRA's computerized control panel.

The TOMRA sensor-based sorter is a self-contained, portable machine that processes REE ore without water or chemicals, leaves no tailings and has a much smaller carbon and site footprint than conventional mining.

Heavy Equipment Operator Kyle Bayha of the Dél̨ı̨ę First Nation, answering reporter's questions at media tour in April 2021.

Yellowknives Dene First Nation members marked the first production at Nechalacho on July 21, 2021. Dene Drummers sang from the catwalk of the TOMRA sorter.

YKDFN Chief Ernest Betsina chops the ribbon to open the 2021 winter road to Nechalacho, with Cheetah officials David Connelly and Ray Anguelov.

YKDFN brushing crew Jonathan Mackenzie and Jonas Baillargeon.

The Social Advantage

IT TAKES A COMMUNITY TO BUILD A PROJECT

The community role in building Nechalacho is a social value that Vital Metals and Cheetah Resources count as a key benchmark of success. The progress made at Nechalacho in its first year is a clear demonstration of this core value.

The participation of the Yellowknives Dene First Nation and the support of its leaders has been instrumental. YKDFN's Det'on Cho Corporation, in partnership with Det'on Cho-Nahanni Construction, became the first Indigenous contractor in Canada to undertake mining within its own traditional lands.

Cheetah Resources is exceedingly proud of its hiring results during the 2021 season. Of the 58 staff, some 70 per cent were Indigenous, and 85 per cent called the North their home, a record that exceeds even the enviable results of the NWT's large diamond mines. Their safety record of zero lost-time incidents is a tribute to the care and attention they invest in themselves and their fellow workers.

Northern suppliers have also shown they're up to the challenge of supporting a new remote mine. More than 160 NWT businesses helped Cheetah chalk up an impressive procurement record of 90 per cent northern, and 85 per cent Indigenous by value.

Angus Lockhart of the Łutselk'e Dene First Nation works the core splitter.

Chief Louis Balsillie (left) delivered a load of core boxes, manufactured at the Deninu K'ue Development Corporation in Fort Resolution, to site with his family in March, 2021.

Erasmus Apparel owner Sarah Erasmus, centre, earned Cheetah's thanks as its 100th NWT business supplier, from sorter operator Jeremy Catholique and office manager Sarah Kakfwi.

Cheetah employees worked 24/7 during the 2021 season to construct the mine, crush, sort and bag thousands of tonnes of rare earth ore from the North T pit.

The TOMRA sensor-based sorter is a compact, computerized machine that uses X-ray and air-jet technology to separate bastnaesite ore from country rock. It was funded in part by CanNor (Canadian Northern Economic Development Agency).

Surveyor Neil Renwick maps a blast pattern at the North T pit face.

Proving Nechalacho's REE Potential

OVER $150 MILLION INVESTED TO DATE

Discovered in 1970, the property changed hands several times. In 1998, Avalon Advanced Materials undertook a 10-year, $100 million program to probe its REE potential. Tens of thousands of meters of drill core and a major feasibility study were produced before slumping world markets paused Avalon's work by 2010. In 2019, Cheetah Resources secured rights to mine the surface and near-surface of the Nechalacho project.

The 17 REE in the Periodic Table are divided by their atomic weight into light and heavy REE, and tend to be found in separate deposits. Nechalacho's geology is unusual; both heavy and light REE are present. The North T Zone now being mined is among the world's richest light REE projects, with a small but high grade resource of 105,000 tonnes at 8.9% TREO (total rare earth oxides.)

The much larger future mine, Tardiff, is estimated at 95 million tonnes at 1.46% (TREO). Decades of historic drilling and ongoing exploration have demonstrated its potential for a multigenerational, year-round mine. Mining could begin by 2024. In addition to its multi-million dollar investment to develop the mine, the positive economic and social impacts will benefit the region for generations to come.

Winter of 2022 drilling on the Tardiff zone will help define the mine plan. The program was partially funded by the NWT Government's Mining Incentive program and CanNor.

Mine Manager Clarence Pyke and Executive Vice Chairman Matthew Edler look over high grade ore at the North T pit.

Large red nodes of high grade bastnaesite make it ideal to produce concentrate with sorter technology.

Night Shift Supervisor Kyle Bayha at the North T pit face.


Thor Lake
Crushers and Sorter
Water Settling Pond
Nechalacho Rare Earth Mine, September 4, 2021
North T Pit
Waste Rock

A Long-term Vision for Canada

NWT AND QUEBEC MINES WILL FEED SASKATCHEWAN PLANT

Nechalacho's ore will be the initial feed stock for Phase One of Vital Metal's $20 million Rare Earth Extraction Facility in Saskatoon. It will produce a mixed REE carbonate destined for specialty refineries in Europe and North America. They in turn will separate the carbonate into the individual, high-purity rare earth elements needed by high-tech and clean-tech manufacturers. Recent acquisitions in western Quebec, presently in due diligence stages, would also ship their concentrate to Saskatoon.

Vital and Cheetah are keenly focused on the work ahead, including finalizing Nechalacho's mine plan, building community awareness and support, contracting capable northern suppliers and securing the necessary surface lease and permits for the expansion to Tardiff.

Tanzania Project

WIGU HILL TAKING STEPS TOWARD LICENSE

Cheetah Resources' Wigu Hill rare earth project is in the Morogoro region of Tanzania, about 300 kilometres inland from the Indian Ocean. Previous exploration has shown widespread mineralization across the claim, which has seen only two of 10 targets drilled to date.

Wigu's light rare earth deposit is similar to Nechalacho's bastnaesite mineralization, with an inferred resource estimate of 3.3 million tonnes at 2.6% LREO. Preliminary tests have shown the ore can be processed with the same sensor-based sorting methods successfully used at Nechalacho

Further development at Wigu Hill, which has good road, rail and power access, is paused as Cheetah has been invited by Tanzanian authorities to finalize a mining license.

Vital Metals

Wigu Hill ore has large bastnaesite crystals, similar to Nechalacho, favouring the use of low-impact sensor-based sorting.

Quebec Project

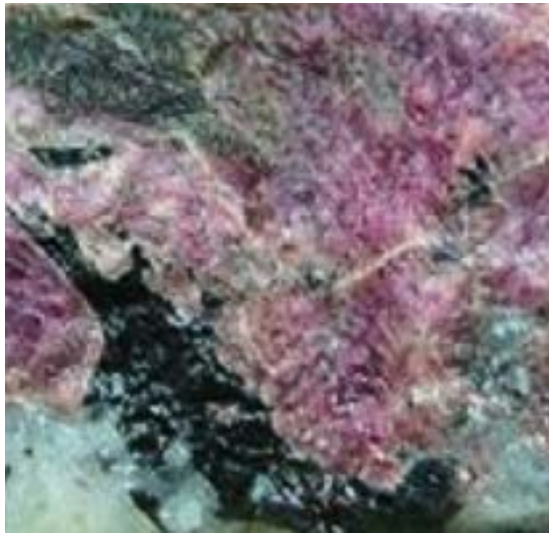
KIPAWA AND ZEUS PROPERTIES COMPLEMENT NECHALACHO

The Zeus and Kipawa deposits in western Quebec, rich in heavy rare earth elements, complement Nechalacho's light REE mineralization. Together, they add to Vital Metals' potential to become the world's only producer of both light and heavy rare earths independent of China.

In August of 2021, Vital Metals secured a 68 per cent interest in Kipawa* and 100 per cent in Zeus from Quebec Precious Metals. Exploration began over a decade ago. The much larger Kipawa deposit has proven and probable reserves of 19.8 million tonnes grading 0.411 per cent TREO. The Zeus Project is less advanced.

Located about 400 kilometres northwest of Ottawa in the historic Abitibi-Témiscamingue mining district, the two projects cover over 43 square kilometres in 73 claims. Year-round road and power infrastructure and a skilled workforce would support further development. In the near term, Cheetah is continuing to define the project as it expands engagement with surrounding communities and the Kebaowak and Wolf Lake First Nations. It will apply environmental, social and governance results demonstrated at Nechalacho to this new venture.

**The Province of Quebec holds the balance through Investment Quebec.*



Quebec Project.

photoholgic/unsplash

Sydney, Australia

Vital Metals home office location.

Yellowknife, Canada

Cheetah Resources' home office.

Nechalacho, Canada

Campsite at Canada's First REE Mine.

Ray Anguelov

Saskatoon, Canada

Vital Metals' Rare Earth Extraction Facility.

REEtec

Norway

REEtec's Rare Earth Separation Facility.

Ucore (artist rendering)

Alaska, United States

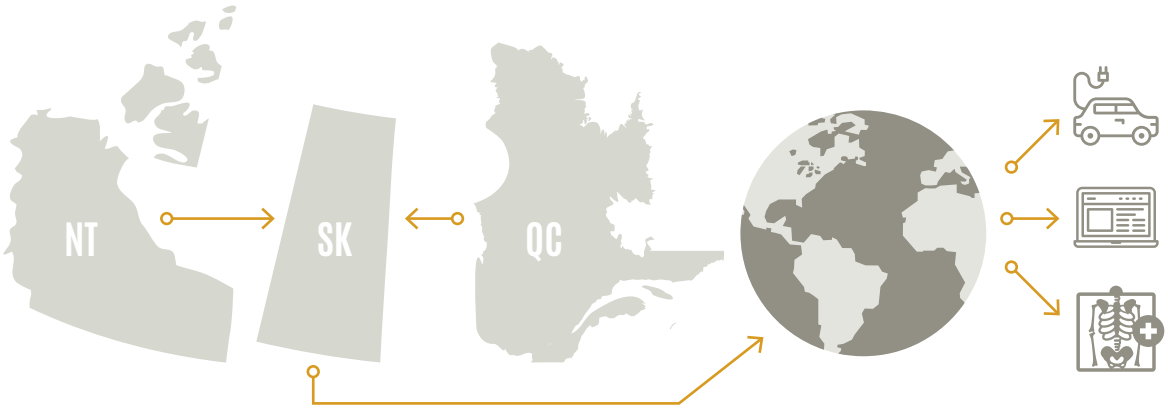
Ucore's Strategic Metals Complex.

Assuring a Global Supply Chain

LINKING CANADA TO THE WORLD

Government and industry recognize there is global risk to the supply chain of essential rare earths. The concern is that Chinese control of over 80 percent of the REE market is neither sustainable nor secure. The United States, Canada and their allies are working together to grow the industry with public and private investment in new deposits and processing infrastructure to assure a responsibly-sourced, secure and affordable supply.

Vital Metals strives to identify the most secure, efficient and socially responsible way to effectively develop rare earth projects. From its headquarters in Australia, it has built an integrated supply network ranging from the Nechalacho mine in the NWT, the Rare Earth Extraction Facility in Saskatoon, to customers in Europe and the United States. As work advances on adding supply from Quebec and Tanzania to its supply chain, Vital and Cheetah are emerging as the world's leading new developer in this expanding and essential market.

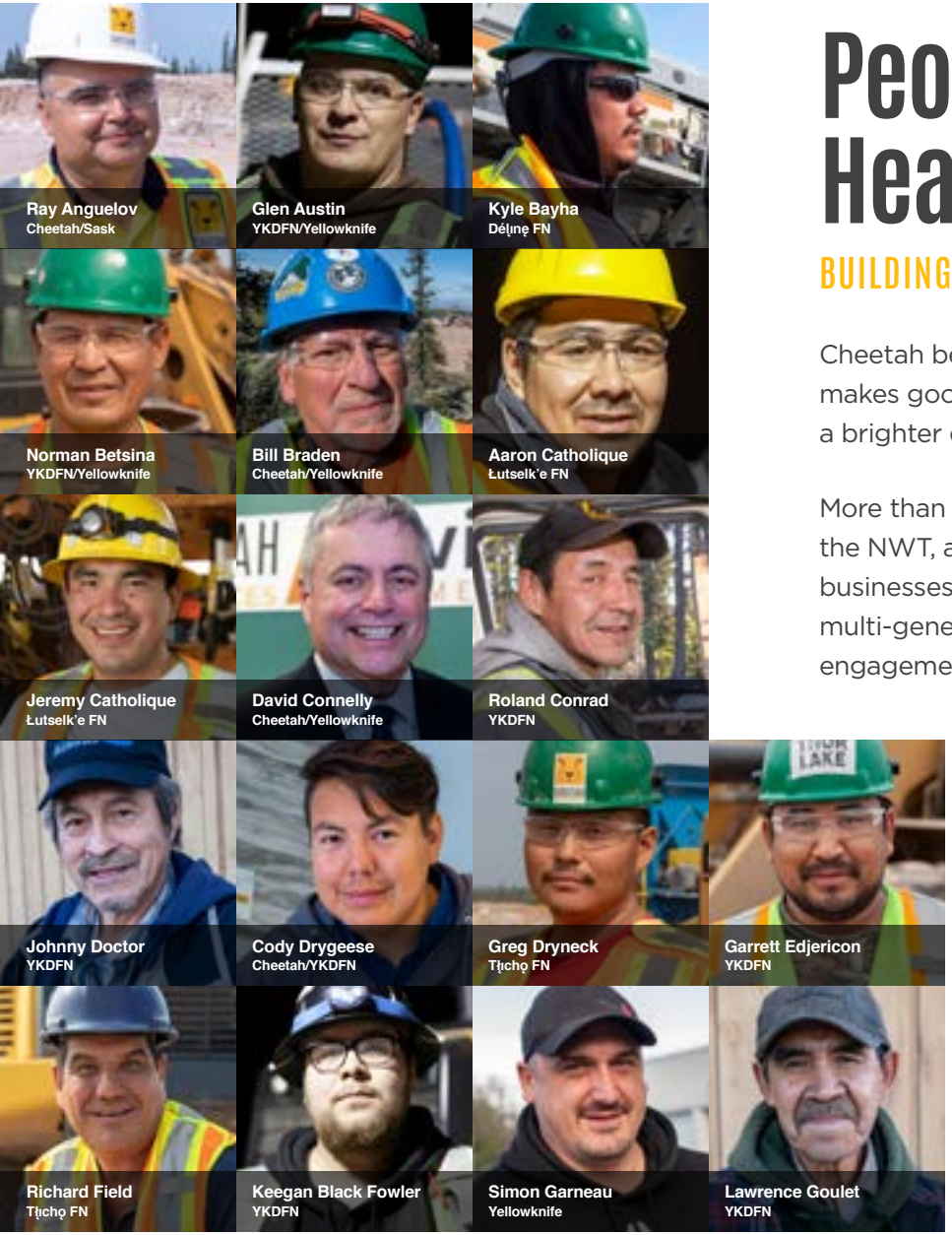


The North T mine will supply the REE concentrate for final processing in Saskatoon, Norway and Alaska.

Cheetah Resources' Nechalacho camp at Thor Lake supports up to 40 workers. It is the only mine in the NWT to provide operations signage in Indigenous, French and English languages.

Cheetah Resources' work at Nechalacho's North T mine is demonstrating its commitment to health and safety as well as the environment and social benefits to the region.

The 2021 season produced 1000 tonnes of concentrated REE ore for shipment by barge and rail to Vital Metal's Saskatoon extraction processing facility.



People are the Heart of the Project

BUILDING A HOMEGROWN WORKFORCE

Cheetah believes that building a homegrown workforce and supply chain not only makes good business sense, it creates careers, pride and ownership in contributing to a brighter economy for the NWT and a greener future for the world.

More than 85 per cent of the 58-person workforce hail from 10 communities across the NWT, and 70 per cent are Indigenous. They're supported by 162 Northern businesses and agencies. As the Nechalacho project holds the potential to be a multi-generational rare earth producer, it also has the potential for employment and engagement with future generations of Northerners.

NO PHOTO AVAILABLE

Shauna Catholique
Łutselk'e FN

Travis Thompson
Yellowknife

Cody Mantla
Tl̨ı̨chǫ FN

Rena McKay
Denínu Kų́ę́ FN

Peter Ross
Gwich'in FN

William Betsina
YKDFN

Seth Ross
Gwich'in FN


Sarah Kakfwi
K'áhshó Got'ıne FN
Fred Lafferty
Denínu Kúé FN
Andrew Catholique
Łutselk'e FN
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Mickey Lafferty
Scott Lafferty
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Chase Loutitt
Denínu Kúé FN
Kevin Mackenzio
Déline FN
Courtland McLean
Yellowknife
Jeffrey Mantla
Tłıchǫ FN
Jessica Michel
Łutselk'e FN
Kyle O'Connor
Yellowknife
Gord Peckford
Chippewa FN
Lorne Poitras
Denínu Kúé FN
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Mi'kmaq FN
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Tłıchǫ FN
Tanya Sjoberg
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Gord Kirby
Neil Renwick
Lynne Carlson
Sooke BC
Jeremy Dyke
Scott King
Steve Hanson
Athabasca AB
Trevor Fitzgerald
Cruze Jerome
Gwich'in FN

By Plane, Ice Road, Barge and Rail

INTERMODAL TRANSPORT IS KEY TO CHEETAH SUPPLY NETWORK

Like remote mines everywhere, Nechalacho's lifelines are the experienced transportation systems that move crews, equipment and product safely and efficiently.

In its 2021 season, Cheetah relied on chartered wheel, ski and float plane services for crew and supply support, along with heavy construction and trucking firms to build and haul on the 130 kilometre ice road from Yellowknife. GNWT and private sector barge services shipped fuel, equipment and concentrate, and CN Rail and trucks delivered 500 tonnes of REE ore from site to Saskatoon, revitalizing Hay River as the multi-modal transportation hub for the NWT.

As Nechalacho evolves, it will rely on using these existing transport systems in new and innovative ways, overcoming many of the disadvantages of remote mining. They illustrate another plus for the Nechalacho project – the need for a disruptive and expensive all-season road is virtually eliminated.

Ray Anguelov

GNWT Marine Transportation Service barges enable equipment and ore shipping to Hay River.

CN Rail

CN Railway ships ore from Hay River to Saskatoon.

Tlicho Air, in partnership with Air Tindi, is a beneficiary of Nechalacho air charter business.

A 130 kilometre ice road provides a heavy freight route from Yellowknife.

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Cover: *Kyle Bayha of the Dél̨ı̨nę First Nation, Lead Hand Supervisor, at the North T pit face, September 2021.*

Inside Cover: *Jeremy Catholique of the Łutselk'e Dene First Nation, Day Shift Supervisor, with bags of sorted ore ready for shipment, August 2021.*

Back Cover: *Chris Pedersen, Geologist and discoverer of the Nechalacho deposit; Jeremy Catholique; Matthew Edler, Executive Vice President, Cheetah Resources; Clarence Pyke of the Mi'kmaq First Nation, Mine Manager.*

All photos by Bill Braden, Cheetah Resources Media Relations Manager, except as noted.

Printed in Yellowknife by Canarctic Graphics Ltd.

Nechalacho is the Wıìlıìdeh Dene name for a small sheltered bay on the rugged north shore of Great Slave Lake. Yellowknives Dene leaders granted permission to use the name at an unveiling ceremony in 2010.


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