



# 2022 Northwest Territories Exploration and Mining Overview

## Territoires du Nord-Ouest 2022 Aperçu des activités d'exploration minérale



Barrett Elliott, Merilie A. Reynolds, Charlene Squibb, and Landen Powell

NORTHWEST TERRITORIES **COMMISSION GÉOLOGIQUE DES**  
**GEOLOGICAL SURVEY** TERRITOIRES DU NORD-OUEST

Government of **Northwest Territories** **Gouvernement des**  
**Territoires du Nord-Ouest**

Cover image:  
Pine Point Camp – Osisko Metals Inc.  
Photo provided by Robin Adair.



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English

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French

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Kīspin ki nitawihtīn ē nīhīyawihk ōma ācimōwin, tipwāsinān.

Cree

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Tłıchq̄ yatı k'èè. Dı wegodı newq̄ dè, gots'o gonede.

Tłıchq̄

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ʔerihł'ís Dēne Sų́lné yatı t'a huts'elkēr xa beyáyatı theʔą ʔat'e, nuwe ts'ēn yółtı.

Chipewyan

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Edı gondı dehgáh got'je zhatié k'èé edat'éh enahddhę nıde naxets'é edahlı.

South Slavey

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K'áhshó got'jne xədə k'é hederı ʔedjhtl'é yerınıwę nıde dúle.

North Slavey

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Jii gwandak izhii ginjik vat'atr'ijahch'uu zhit yinothan ji', diits'at ginohkhii.

Gwich'in

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Uvanittuaq ilitchurisukupku Inuvialuktun, ququaqłuta.

Inuvialuktun

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Ċ'bdċ ɳɳ'bbΔċ ʌʌLJΔʌʌċ Δɔbɳɳċ-ʌʌʌʌɳɳ, ɔʌʌʌʌ-ɔċ ɔʌʌʌʌ-ʌʌʌʌɳɳ.

Inuktitut

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Hapkua titiqqat pijumagupkit Inuinnaqtun, uvaptinnut hivajarlutit.

Inuinnaqtun

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## Executive summary

During 2022, as COVID-19 related restrictions were being lifted across Canada, high interest in critical metals and high gold prices resulted in renewed exploration activity in the Northwest Territories (NWT). According to Natural Resources Canada, mineral exploration companies anticipated spending \$92.3 million in the NWT over the 2022 fiscal year, which represents approximately 2.2% of the total anticipated exploration expenditures Canada wide. This is somewhat higher than the \$75.4 million in exploration expenditures during the 2021 fiscal year. In the past year, 177 claims were recorded or are pending and eight claims were cancelled. Eighty-three claims were taken to lease and 99 leases were cancelled. Four prospecting permits were cancelled. A summary of mineral exploration in the NWT for 2022 is presented in Table 1.

While diamonds, gold and base metals have had a long history of exploration and mining in the NWT, the increased demand for critical and strategic metals is driving mining projects and advanced exploration projects such as Nechalacho, NICO, Pine Point, Prairie Creek as well as various cobalt, rare earth element (REE) and lithium exploration projects. The NWT, with its wealth of untapped geological resources and well developed mining sector, is positioned not only to become a supplier of critical minerals, but to be a leader in how they are developed in an environmentally and socially responsible way.

At the Ekati Diamond Mine, production continued at Sable open pit and Misery underground operations, while the Pigeon open pit was mined out. Dewatering for the Point Lake open pit took place during summer 2022 as did an exploration program which discovered two new kimberlites. Production continued at the Diavik Diamond Mine which is scheduled to cease operations in 2025. Work continued at Gahcho Kué on the recently discovered Hearne Northwest Extension, along with the filing of a revised NI 43-101 report and the recovery of a 151.6 carat diamond. Operations continued at Vital Metals' Nechalacho project, Canada's first REE producer, and their resource was expanded by further definition drilling.

2022 also saw continued advanced exploration at Gold Terra's Yellowknife City Gold project, Nighthawk's Indin Lake project and Osisko's Pine Point project. Gold Terra filed an updated mineral resource for their Yellowrex Main, Yellowrex North and Kam Point deposits and continued their exploration work in the Con Mine and Mispickle areas. Nighthawk Gold Corp. continued work on the Indin Lake Gold property with over 40 kilometres of drilling and a new resource estimate. Osisko's Pine Point project also saw continued exploration work as well as an updated Preliminary Economic Assessment. Norzinc Ltd.'s Prairie Creek project saw a 5,300 metres drilling campaign as well as continued progress through the permitting process.

Diamond exploration work continued at Arctic Star's Diagas project and Mountain Province's Kennady Diamonds project, both of which announced new kimberlite discoveries. Gold exploration continued at Golden Pursuit Resources Ltd.'s South Gordon Lake property, and at Sixty North Gold Mining Ltd.'s Mon Gold project. Several lithium projects from various companies were bought or initiated in the Yellowknife area, with exploration programs anticipated for 2023.

The Mining Incentive Program (MIP) was launched in 2014 to help increase levels of mineral exploration in the NWT. From 2014 to 2021, the MIP provided over \$6 million in government support to NWT mineral exploration projects. This \$6 million investment resulted in additional project spending of over \$29 million from MIP recipients. 2022-23 saw the MIP budget increase to \$1.3 million. This funding was awarded to five prospector-driven and 11 corporate exploration projects.

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## Sommaire

En 2022, alors que les restrictions liées à la COVID-19 étaient en train d'être levées au Canada, l'engouement grandissant pour les métaux critiques et l'augmentation du prix de l'or ont suscité une reprise des activités d'exploration aux Territoires du Nord-Ouest (TNO). Selon Ressources naturelles Canada, les sociétés d'exploration minière prévoient de dépenser 92,3 millions de dollars aux TNO au cours de l'exercice fiscal 2022, soit environ 2,2 % de l'ensemble des dépenses d'exploration prévues à l'échelle du Canada. Ce montant est un peu plus élevé que les 75,4 millions de dollars dépensés en exploration sur le territoire en 2021. L'année dernière, 177 claims miniers ont été enregistrés ou étaient en cours d'enregistrement et huit ont été annulés. En outre, 83 titulaires de claims ont obtenu un bail minier, 99 baux ont été résiliés et quatre permis de prospection ont été annulés. Un résumé de l'exploration minière aux TNO pour 2022 est présenté dans le Tableau 1.

Les diamants, l'or et les métaux communs sont exploités depuis longtemps aux TNO, mais c'est aujourd'hui l'augmentation de la demande en minéraux critiques et stratégiques qui est à l'origine de nombreux projets miniers et d'exploration en phase avancée, comme ceux de Nechalacho, de NICO, de Pine Point et de Prairie Creek, ou de projets d'exploration d'autres minéraux tels que le cobalt, les éléments des terres rares et le lithium. Les TNO, forts de leur potentiel en matière de ressources géologiques inexploitées et de leur industrie minière développée, sont non seulement bien placés pour devenir un fournisseur de minéraux critiques, mais aussi un chef de file de l'exploitation responsable de ces minéraux sur le plan environnemental et social. Les activités de production minière se sont poursuivies à la mine de diamants Ekati, notamment dans la carrière à ciel ouvert Sable et dans la mine souterraine Misery, le gisement de la carrière à ciel ouvert Pigeon a cependant été épuisé. Le dénoyage de la carrière à ciel ouvert Point Lake a eu lieu pendant l'été 2022 et un nouveau projet d'exploration a vu le jour, permettant la découverte de deux nouveaux gisements de kimberlite. La mine de diamants Diavik, dont la fermeture est prévue en 2025, a également continué ses activités. En outre, le personnel de la mine Gahcho Kué a continué les travaux dans la nouvelle extension nord-ouest Hearne, déposé un rapport NI 43-101 révisé et récupéré un diamant de 151,6 carats. Vital Metals a continué ses activités dans la mine Nechalacho, la première productrice de terres rares au Canada, et a découvert des ressources plus importantes à la suite d'un nouveau forage de délimitation.

En 2022, plusieurs sociétés ont poursuivi des projets d'exploitation avancée, c'est notamment le cas de Gold Terra (Projet de mine d'or à Yellowknife), de Nighthawk (Projet Indin Lake) et d'Osisko (Projet Pine Point). Gold Terra a, en effet, déposé un rapport mis à jour sur ses gisements Yellowrex Main, Yellowrex North et Kam Point et a poursuivi ses activités d'explorations dans la zone de la mine Con et de Mispickle. Nighthawk Gold Corp. a continué ses activités sur le site aurifère du lac Indin en forant sur plus de 40 kilomètres et a publié une nouvelle estimation de ses ressources minérales. Le projet Pine Point d'Osisko a également fait l'objet de travaux d'exploration et la société a communiqué une mise à jour de son évaluation économique préliminaire. Enfin, Norzinc Ltd. a mené une campagne de forage de 5 300 mètres à Prairie Creek et a continué les démarches d'obtention de permis.

Les projets d'exploration diamantifère d'Arctic Star (Diagras) et de Mountain Province (Kennady Diamonds) se sont poursuivis, et les deux entreprises ont annoncé avoir découvert de nouveaux gisements de kimberlite. Golden Pursuit Resources Ltd. a poursuivi son exploration aurifère au sud du lac Gordon, à l'instar de Sixty North Gold Mining Ltd. qui a continué les travaux sur la propriété aurifère Mon. Plusieurs projets d'exploration du lithium ont également été lancés par différentes sociétés dans la région de Yellowknife; le début des travaux est prévu pour 2023.

Le Programme d'encouragement aux activités minières (PEAM) a été lancé en 2014 afin d'intensifier la prospection minière aux TNO. De 2014 à 2021, le PEAM a accordé un soutien gouvernemental de plus de 6 millions de dollars aux projets d'exploration minière aux TNO, ce qui a entraîné des dépenses supplémentaires de plus de 29 millions de dollars de la part des bénéficiaires du Programme. En 2022-2023, le budget total du PEAM est passé à 1,3 million de dollars. Ce financement a été accordé à cinq projets d'exploration menés par des prospecteurs et à onze projets menés par des sociétés.



Figure 1. The locations of 2022 mining and exploration projects.

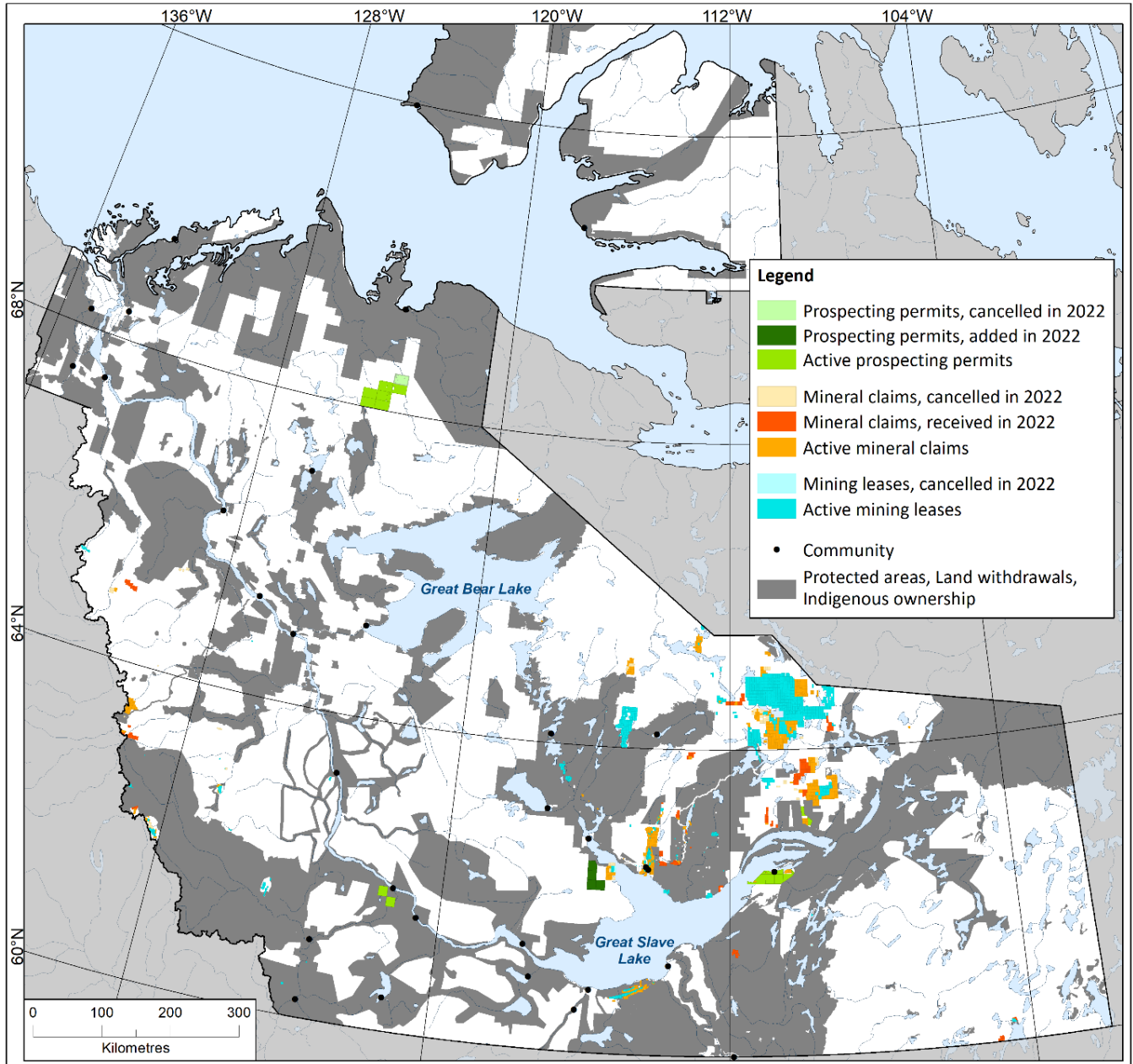


Figure 2. Mineral tenures in the Northwest Territories as of February 2023.

Table 1a. Summary of mining activities in the Northwest Territories.

Property/ Project	Operator/ Partners	Commodity	Drilling	Geophysics	Sampling and other work	Studies and permitting
Ekati Diamond Mine	Arctic Canadian Diamond Company Ltd.	Dia				Point Lake open pit dewatering and permitting; underwater remote mining; property wide exploration data review
Diavik Diamond Mine	Rio Tinto	Dia	7 diamond, 15 RC holes			
Gahcho Kué Diamond Mine	DeBeers Canada Inc., Mountain Province Diamonds Inc.	Dia	16 holes for Hearne Northwest Extension			Revised NI 43-101 report
Nechalacho	Vital Metals Limited	REE	Resource definition drilling		Initial production run of concentrator facility	

Table 1b. Summary of diamond exploration activities in the Northwest Territories.

Property/ Project	Operator/ Partners	Commodity	Drilling	Geophysics	Sampling and other work	Studies and permitting
Kennady North	Mountain Province Diamonds Inc.	Dia	35 holes, 5,000 m of diamond drilling	1,250 line-km airborne MAG / EM; 189 line-km ground resistivity; 30 line-km ground mag; 3,139 gravity stations	Data from over 600 KIM samples received; 300 till samples; additional staking for metal potential	
Diagras	Arctic Star Exploration Corp., Margaret Lake Diamonds Inc.	Dia	9 holes, 1,098 m of diamond drilling	3,294 line-km airborne geophysics; 239.6 line-km ground mag	Caustic fusion analysis	Diamond inclusion studies
Loki	North Arrow Minerals Inc.	Dia			KIM results	

Table 1c. Summary of gold exploration activities in the Northwest Territories.

Property/ Project	Operator/ Partners	Commodity	Drilling	Geophysics	Sampling and other work	Studies and permitting
Indin Lake Gold	Nighthawk Gold Corp.	Au	40,085 m of diamond drilling	Airborne EM		Updated mineral resource
Yellowknife City Gold	Gold Terra Resource Corp.	Au	14,339 m of diamond drilling			Updated mineral resource; metallurgical tests
Mon Gold	Sixty North Gold Mining Ltd.	Au			Sampling	
Cabin Gold	Rover Metals Corp.	Au	Diamond drilling, results pending			
South Gordon Lake	Golden Pursuit Resources Ltd.	Au		Magnetometer and IP	Sampling	

Table 1d. Summary of base metals activities in the Northwest Territories.

Property/ Project	Operator/ Partners	Commodity	Drilling	Geophysics	Sampling and other work	Studies and permitting
Gayna River	Fireweed Metals Corp.	Zn		Ground gravity surveys	Sampling; prospecting; LiDAR	
O'Connor Lake	Slave Lake Zinc Corp.	Zn		Airborne geophysics 900 line-km	Visited historic showings; ground truthing geophysics anomalies	
Pine Point	Osisko Metals Inc.	Pb-Zn	Over 300 drill holes, infill and hydrogeological			Updated PEA
Prairie Creek	NorZinc Ltd.	Pn-Zn-Ag	5,300 m of drilling planned, results pending			Initiated feasibility study-level metallurgical test program; various mine and exploration permitting work
Mactung Tungsten	Fireweed Metals Corp.	W			Sampling; drill core re-assaying; LiDAR	Signed letter of intent to acquire Mactung from the Government of Northwest Territories
NICO	Fortune Minerals Limited	Ni-Co-Au-Ag-Cu	Results of 2,482 m 13-hole program from 2021			
939 and EA South	StrategX Elements Corp.	Co			Surface sampling	
Muskox Lithium	Gama Explorations Inc. and RGV Lithium Explorations Inc.	Li			Channel sampling	
Yellowknife Lithium	Li-FT Power Ltd.	Li				Filing of NI 43-101 report

# Mining

## Diavik Diamond Mine – Rio Tinto

The Diavik Diamond Mine (100% Rio Tinto) comprises 153 leases covering 133,638 hectares. In full year 2022, the Diavik Diamond Mine produced at total of 4,651,486 carats from the processing of 2,158,332 tonnes of ore (Table 2). Note that Rio Tinto’s share of production has increased from 60% to 100% since their acquisition of full ownership of the Diavik Diamond Mine. Rio Tinto has indicated that mine-lease exploration continued at Diavik, with seven diamond holes and 16 reverse circulation (RC) holes. Exploration drilling was completed adjacent to existing mine infrastructure

In January 2023, the Diavik Diamond Mine achieved 20 years of production, with over 140,000,000 carats produced from over 25,000,000 hours of employment and nearly \$7,000,000,000 in Northern spending. A final closure and reclamation plan was submitted at the end of third quarter in 2022, which had production ceasing in 2025.

On Feb 23, 2023, Rio Tinto announced the approval of a \$40-million investment in the first phase of underground mining below the existing A21 open pit. Based on the updated mine plan and production schedule and subject to approval of the second phase of the A21 underground project. The Diavik Diamond Mine is now expected to end commercial production in the first quarter of 2026.

Table 2. Diavik Diamond Mine 2022 production summary.

	First quarter	Second quarter	Third quarter	Fourth quarter	Full year	Full year
Diavik Diamond Mine production	2022	2022	2022	2022	2021	2022
Ore processed ('000 tonnes)	496	537	590	535	2,540	2,158
Diamonds recovered ('000 carats)	991	1,149	1,192	1,319	5,843	4,651

## Ekati Diamond Mine – Arctic Canadian Diamond Company Ltd.

The Ekati Diamond Mine (100% Arctic Canadian Diamond Company Ltd.) comprises 229 mining leases covering 210,950 hectares. Current operations include the Sable open pit and Misery underground mine, while the Pigeon open pit was mined out in April 2022.

The Point Lake open pit project was granted Ministerial approval for an amended Water Licence and Land Use Permit along with approval of a Fisheries Authorization by the Department of Fisheries and Oceans, and a receipt of the Point Lake surface lease during 2022. Dewatering pumps, barge, generator, pipeline materials, and related equipment were delivered to the Point Lake area on the 2022 winter road. The first stage of dewatering (Point Lake to Lac du Sauvage) was completed summer 2022 along with the fish-out of Point Lake.

Advanced engineering work for the Lynx underwater remote mining (URM) trial was completed during early 2022. The construction contract for the Lynx trial launch and recovery platform and the construction contract for the production crawler was signed with IHC Mining. The Lynx production trial is planned in summer 2024.

A property-wide exploration review was completed during early 2022 based on the results from a deep machine learning initiative carried out during 2021. Five drill targets were prioritized using electromagnetic inversions and detailed geophysical analysis. Helicopter supported exploration drilling of three of the prioritized targets was completed in summer 2022 resulting in two kimberlite discoveries located about six kilometers northwest of the Sable pipe.

Arctic Canadian Diamonds announced in August that it had recovered a 71.26-carat fancy yellow octahedron diamond from the Misery Pipe, which has supplied many of the world’s precious yellow diamonds.

## **Gahcho Kué Diamond Mine – DeBeers Canada Inc., Mountain Province Diamonds Inc.**

The Gahcho Kué Joint Venture is a partnership (49% Mountain Province Diamonds Inc. and 51% De Beers Canada Inc.) comprises eight leases covering 5,216 hectares and contains the Gahcho Kué Diamond Mine. De Beers operates the mine and associated exploration activities. The Gahcho Kué Joint Venture hosts several kimberlites currently being mined, developed, and explored for future development. Note that Mountain Province Diamonds Inc. reports funds in \$CAD unless otherwise stated.

Over the course of 2022, the Gahcho Kué mine produced 4.1 million tonnes of ore, processed 3.1 million tonnes of ore, and recovered 5.5 million carats at an average grade of 1.78 carats per tonne (Cpt; Table 3). In 2022, approximately 2.7 million carats were sold at an average value of \$146 per carat (US\$112 per carat). This compared to 3.2 million carats sold at an average value of \$94 per carat (US\$75 per carat) in full year 2021.

*Table 3. Gahcho Kué Mine production summary.*

Gahcho Kué Mine production	Full year 2022	Full year 2021	Year over year variance
Total tonnes mined (ore and waste)	33,947	35,447	-4 %
Ore mined ('000 tonnes)	4,114	3,561	16 %
Ore treated ('000 tonnes)	3,102	3,083	1 %
Carats recovered ('000 carats)	5,519	6,229	-12 %
Recovered grade (carats per tonne)	1.78	2.02	-12 %

The Hearne Northwest Extension was discovered in late 2021 when a 25-metre section of kimberlite was exposed during routine mining operations. Follow-up exploration work led to significant intersections of kimberlite in ten of 16 holes in a 5,040 metre drill program.

A revised NI 43-101 technical report for the Gacho Kué Diamond Mine was filed in March 2022. Highlights include 42.6 million carats reserve grading 1.51 Cpt, 3 million carats indicated at 1.25 Cpt, and 20.3 carats inferred at 1.72 Cpt. In early 2023, Mountain Province provided operation and cost guidance for the upcoming year, with a projected 4.1 to 4.5 million tonnes of ore mined and 5.6 to 6.1 million carats recovered with an anticipated production cost of \$70 to \$80 per carat. In late August, Mountain Province announced that a 151.60-carat coloured octahedron of “exceptional clarity” was recovered from the mine.



## **Nechalacho Project – Vital Metals Limited**

The Nechalacho project (100% Vital Metals Limited) comprises eight leases covering 5,786 hectares and commenced REE production in 2021. Vital Metals Limited are the first REE producer in Canada and the second in North America.

In March 2022, Vital Metals Limited commenced a 48-hole resource definition drilling program at the Tardiff deposit. The resource prior to this drilling program was 16.4 million tonnes at 1.85% of Total Rare Earth Oxide (TREO) for 303,000 tonnes of total contained REE. In February 2023, Vital Metals announced an updated Mineral Resource Estimate for the Tardiff Upper Zone, which indicates a 20% increase in TREO. Tardiff is currently estimated to contain 1.67 million tonnes TREO in 119 million tonnes at 1.4% TREO, and 416,000 tonnes of neodymium and praseodymium.

During summer 2022, Vital Metals Limited announced the first production run of high-grade concentrate at their Saskatoon Rare Earth Extraction plant. This plant will generate a high-purity mixed rare-earth carbonate to be exported to REEtec in Norway and Ucore in the United States for separation into individual magnetic rare earth metals. The product will then be shipped overseas to the Schaeffler Group to be used in building electric motors for vehicles.

## **Diamond exploration**

### **Kennady North Project – Mountain Province Diamonds Inc.**

The Kennady North project (100% Mountain Province Diamonds Inc.) comprises 30 leases and 99 claims covering 113,437 hectares in close proximity to the Gahcho Kué Mine. It currently has three kimberlites which have resource estimates. The Kelvin kimberlite has an indicated resource of 13.62 million carats in 8.50 million tonnes at a grade of 1.60 carats per tonne and a value of US\$63 per carat. Faraday 2 is estimated to contain an inferred resource of 5.45 million carats in 2.07 million tonnes with grade of 2.63 carats per tonne and a value of US\$140 per carat. The Faraday 1-3 kimberlites have a combined inferred resource of 1.90 million carats in 1.87 million tonnes with a grade of 1.04 carats per tonne and a value of US\$75 per carat. All resource estimations are based on a one-millimetre diamond size bottom cut-off.

The 2022 exploration drilling program consisted of over 5,000 metres in 35 drill holes, 25 of which intersected kimberlite, including eight volcanoclastic kimberlite intersections associated with the North Anomaly. The results of this program led to the designation of the new KE kimberlite area, approximately half a kilometre east of the Kelvin kimberlite, which is currently defined by three drill holes into a series of hypabyssal kimberlite sheets. These can be up to 2.13 metres in thickness and appear to be distinct from the Kelvin kimberlite.

Geophysical data from 2022 includes over 1,250 line-kilometres of airborne magnetic and electromagnetic surveys collected over an area to the southeast of Gahcho Kué, 189 line-kilometres of high-resolution ground resistivity surveys, 30 line-kilometres of ground magnetic surveys, and 3,139 ground gravity stations. The kimberlite indicator mineral (KIM) results from over 600 samples collected in 2021 were received and over

300 follow-up samples were taken. These new results identified new areas to target with geophysics and drilling. The re-interpretation of historic geophysical data in the vicinity of the KE kimberlite area yielded an additional 13 drill targets, some of which are associated with areas of KIM dispersal. Additionally, five new claims were added to the western portion of the project tenure block to follow up on historic drilling which has a 68 metre interval visually estimated to contain 2% molybdenite.

## Diagras Diamond Project – Arctic Star Exploration Corp., Margaret Lake Diamonds Inc.

The Diagras Diamond project (owner 18.5% Margaret Lake Diamonds Inc. and operator 81.5% Arctic Star Exploration Corp.), located near Lac de Gras, comprises 58 contiguous claims covering 48,346 hectares. Previous exploration of the area covered by this property led to the discovery of 21 kimberlites. Exploration efforts over the past several years have led to the discovery of five new kimberlites, with the diamond-bearing Sequoia kimberlite averaging 69 stones per 100 kilograms (Table 4). An inclusion study on diamonds from the Sequoia kimberlite indicates that 50% of these diamonds were nitrogen free type IIa diamonds.

The 2022 spring exploration program consisted of nine holes totalling 1,098 metres. Six of these holes were used to further delineate the Sequoia kimberlite complex and three were used to test new targets. On June 1<sup>st</sup> Arctic Star announced the newly discovered diamondiferous Arbutus kimberlite, which was discovered by drilling a magnetic low to the southeast of the previously known Finlay kimberlite. Initial core from Arbutus is coherent kimberlite with sub-centimetre olivine, abundant diamond and mantle indicator minerals with caustic fusion analysis yielding 43 stones per 100 kilogram (Table 5).

Additionally, a 3,294.5 line-kilometre airborne geophysical survey and 27 ground magnetic surveys totalling 239.6 line-kilometres were completed.

*Table 4. Caustic fusion results from the Sequoia kimberlite Diamond project.*

	+0.106	0.15	+0.212	0.3	0.425	0.6	0.85	1.18	Weight	Total	Stones/
Sequoia	mm	mm	mm	mm	mm	mm	mm	mm	kg	Stones	100 kg
2022	608	255	78	35	17	7	2	1	1650.5	1003	61
2021	282	117	39	23	10	6	1	1	505.3	479	95
Total	890	372	117	58	27	13	3	2	2155.8	1482	69

*Table 5. Microdiamond results from the Diagras Diamond project.*

	0.105	0.15	0.212	0.3	0.435	0.6	0.85	1.18	Weight	Total	Stones/
Kimberlite	mm	mm	mm	mm	mm	mm	mm	mm	kg	Stones	100 kg
Arbutus	29	19	5	2	4	2	0	0	143.05	61	43
Birch	10	7	7	3	1	1	0	0	141.5	29	20
Alder	3	6	1	2	1	0	1	0	223.72	14	6
Cedar	1	0	0	0	0	0	0	0	90.6	1	1

## Loki Diamond Project – North Arrow Minerals Inc.

The Loki Diamonds project (100% North Arrow Minerals Inc.) comprises 24 claims covering 13,898 hectares approximately 40 kilometres west of Diavik and 35 kilometres southwest of the Ekati Diamond Mine. Five kimberlites have been discovered to date, all of which are confirmed as diamondiferous. The project area also contains several unsourced KIM trains.

In 2022, KIM results from the 2021 overburden drilling program were received. It was noted that surface samples had KIM concentrations typical of background in the region, while samples from 5 to 25 metres depth returned much higher results, with hundreds of KIM counts in some instances.

## Gold Exploration

### Yellowknife City Gold Project – Gold Terra Resource Corp.

The Yellowknife City Gold (YCG) project (100% Gold Terra Resource Corp.), exclusive of the Con Mine Option, comprises 137 mining leases and 161 claims covering 77,605 hectares. The Con Mine Option property (100% Miramar Northern Mining Ltd.) comprises 19 mining leases and 15 claims covering 2,483 hectares.

The YCG project overlays the Archean Yellowknife greenstone belt, covering nearly 70 kilometres of strike length along the main mineralized shear system that hosts the past-producing high-grade Con and Giant gold mines. The Con Mine produced over six million ounces of gold between 1938 and 2003 and the Giant Mine over seven million ounces of gold between 1948 and 2004. Gold Terra started exploring the area in 2013 and in 2021 entered into an option agreement with subsidiaries of Newmont Corporation that will allow Gold Terra to acquire the Con Mine property. Currently, Gold Terra is primarily focused on drilling the Campbell shear on the Con Mine Option property immediately south of the Con Mine.

In winter of 2022, Gold Terra completed 15 diamond drill holes (8,327.96 metres) on the Campbell shear along strike of the former Con Mine. High-grade gold mineralization was intersected in multiple zones (Table 6). In August 2022, Gold Terra announced the start of a summer drilling program to follow up on the winter program results but no results had been reported at the time of writing.

*Table 6. Highlighted composite assay results from 2022 drilling at the Con mine Option property.*

Zone	Hole name	Drill width (metres)	Gold (grams per tonne)
Yellorex	GTCM22-040	11.00	8.00
Yellorex North	GTCM22-039	6.00	3.31
Y-88 Zone	GTCM22-037	14.57	1.60
Con Shear	GTCM22-029	4.55	3.61

Also, in winter 2022, Gold Terra completed 19 drill holes (6,011 metres) at the Mispickel area, in the northern part of the YCG project. The Mispickel area contains a broad, steeply easterly dipping shear zone upwards of 200 metres wide, primarily hosted in interbedded argillite and siltstone. Ten of the 19 holes drilled at

Mispickel in 2022 intersected visible gold in a sheared vertical structure extending over a minimum strike length of 400 metres. Selected assay results are shown in Table 7. The 2022 drilling program successfully extended gold mineralization with the addition of two new gold zones, MP-Ryan and Zone 14, with mineralization open in all directions.

*Table 7. Highlighted composite assay results from 2022 drilling at Mispickel.*

Hole name	Drill width (metres)	Gold (grams per tonne)
GTWL22-002	4.00	19.00
GTWL22-004	3.00	9.36
GTWL22-008	6.00	4.17
	<i>including</i> 1.00	11.35
	<i>and</i> 1.00	11.80
GTWL22-014	3.00	31.89
	<i>including</i> 1.00	69.40
GTWL22-017	3.00	5.17
GTWL22-019	4.00	2.88
	<i>including</i> 2.10	5.23

In August 2022, Gold Terra announced gold recovery results from its initial metallurgical tests on the Yellorex zone of the Campbell shear (part of the Con Mine Option property). A total gold recovery of 92.1% was achieved in the first test work in high-grade composite samples of ten grams per tonne gold, after flotation concentrate, pressure oxidation, and cyanide leach. Assays of the flotation concentrate reported up to 98.8% gold with close to 7% sulphide content. The results provide Gold Terra with two potential product paths for Yellorex mineralization – either to produce a saleable concentrate or produce gold on site through the pressure oxidation process.

In September 2022, Gold Terra announced an initial mineral resource estimate for the Con Mine Option property, which incorporates 41 diamond drill holes (21,019 metres) completed by Gold Terra from September 2020 to June 2022 and all existing historical holes drilled before 2003. The underground mineral resource is 109,000 ounces of gold in the indicated category and 432,000 ounces of gold in the inferred category (Table 8). At the time of writing, the company had not updated the mineral resource estimate for the rest of the YCG project (*i.e.*, 1.2 million inferred ounces of gold; Table 9) to include results from the 2022 winter drilling program.

In January 2023, Gold Terra announced the start of an 8,000-metre winter drilling program on the Con Mine Option property. The initial program will consist of 20 holes drilled from surface to a depth of 600 metres with the objective of delineating additional ounces at depth and along strike on the Campbell shear. In addition, preparations are underway to move in a second drill which is capable of drilling 2,500 metre holes to test the depth extension of mineralization below the former Con Mine.

Table 8. Initial mineral resource estimate for the Con Mine Option property (2022).

Deposit	Category	Mining method	Cut-off		Grade (gold g/t)	Contained gold (ounces)
			(g/t)	Tonnes		
Yellorex Main	Indicated	Underground	3.5	821000	7.55	109000
	Inferred	Underground	3.5	993000	6.89	220000
Yellorex North	Inferred	Underground	3.5	463000	7.42	111000
Kam Point	Inferred	Underground	3.5	536000	5.83	101
Sub-total	Indicated	Underground	3.5	821,000	7.55	109,000
	Inferred	Underground	3.5	1,992,000	6.74	432,000

Table 9. Mineral resource estimate for the Yellowknife City Gold project (2021).

Deposit	Category	Mining method	Cut-off		Grade (gold g/t)	Contained gold (ounces)
			(g/t)	Tonnes		
Sam Otto/	Inferred	In-pit	0.4	20,403,000	1.10	721,000
Dave's Pond	Inferred	Underground	1.4	948,000	1.75	53,000
Mispickel	Inferred	In-pit	0.4	893,000	2.20	64,000
Crestaurum	Inferred	In-pit	0.4	461,000	6.17	91,000
	Inferred	Underground	2.5	954,000	6.16	189,000
Barney	Inferred	Underground	2.0	646,000	4.30	89,000
	Inferred	In-pit		21,757,000	1.25	876,000
Sub-total	Inferred	Underground		2,548,000	4.04	331,000
	Inferred	In-pit + Underground		24,305,000	1.54	1,207,000

## Indin Lake Gold Property – Nighthawk Gold Corp.

The Indin Lake Gold property (100% Nighthawk Gold Corp.) is located in the Archean Indin Lake greenstone belt, approximately 200 kilometres north of Yellowknife and comprises 68 leases and 81 claims totalling 90,645 hectares. The property contains the past-producing Colomac Mine and numerous satellite showings. The Colomac Mine produced more than 500,000 ounces of gold during its operation as an open pit mine in the 1990s. Gold mineralization is primarily hosted in quartz veins within diorite and felsic volcanic porphyry settings, but is also found in banded iron formation and other settings. Nighthawk acquired the property in 2012.

In 2022, Nighthawk drilled 40,085 metres between May and August with the objective of expanding the potential pit-contained mineralization, particularly in higher-grade areas in the Colomac Main, Grizzly Bear, 24/27, Kim, and Cass deposits. Selected assay results are listed in Table 10.

In August 2022, Nighthawk announced it was conducting an airborne electromagnetic geophysical survey on its property and that it had commenced baseline environmental work at the Colomac Centre area. The geophysical survey identified a high conductive zone along the geological contact that hosts the 24/27 deposit; follow up targeting is being completed in the winter. Strong conductive zones were also identified along the western felsic volcanic boundary to sedimentary rocks at the Cass deposit.

Nighthawk reported an updated mineral resource estimate for the Indin Lake Gold property on March 8, 2022, and on February 9, 2023. An additional 39,065 metres of drilling from 2020 and 2021 and all drilling results from 2022 are incorporated. The 2023 estimate (Table 11) has increased the pit-constrained gold ounces in the indicated category to 2,804,000 ounces at 1.45 grams per tonne gold and in the inferred category to 802,000 ounces at 2.32 grams per tonne gold.

*Table 10. Highlighted composite assay results from 2022 drilling at Indin Lake property.*

Hole name	Deposit	Drill width (metres)	Gold (grams per ton)
C22-04	Colomac Main (Zone 1.0)	60.95	1.91
C22-03	Colomac Main (Zone 1.0)	32.32	1.13
C22-17	Colomac Main (Zone 1.0)	9.50	7.57
C22-25	Colomac Main (Zone 1.5)	126.00	0.53
C22-11	Colomac Main (Zone 1.5)	91.00	0.4
C22-40	Colomac Main (Zone 2.5)	92.00	2.09
C22-45	Colomac Main (Zone 2.5)	34.50	2.72
C22-34	Colomac Main (Zone 2.5)	26.50	1.61
C22-27	Colomac Main (Zone 3.5)	1.00	271.4
C22-26	Colomac Main (Zone 3.5)	70.75	1.51
GB22-31	Grizzly Bear	20.25	3.02
GB22-29	Grizzly Bear	21.50	1.41
GB22-14	Grizzly Bear	14.85	1.40
TFS22-02	24	12.75	6.8
TFS22-16	24	17.00	1.91
TFS22-06	27	45.00	0.67
TFS22-15	27	19.00	1.57
TFS22-20	27	7.50	2.48
TFS22-10	24/27	54.35	2.91
TFS22-08	24/27	40.75	2.52
KM22-04	Kim	17.65	7.3
KM22-06	Kim	29.75	2.44
CM22-22	Cass	2.00	232.18
CM22-07	Cass	0.50	125.5
CM22-31	Cass	33.50	2.67
CM22-29	Cass	24.00	3.15

In the 2023 mineral resource estimate, mineralization at the Colomac Main deposit was expanded to the south and north, and a significant portion of underground mineralization was converted to open pit. At the 24/27 deposit, mineralization was expanded along strike and at depth with a meaningful conversion of the pit-constrained mineralization from the inferred to indicated category. At the Cass deposit, the resource was expanded along strike and at depth, adding an auxiliary pit to the west and increasing the pit-constrained inferred ounces by 67%. The company plans to deliver a preliminary economic assessment for the Indin Lake Gold property in the middle of 2023.

Table 11. The 2023 Indin Lake Gold property mineral resource estimate.

Deposit	Mining method	Indicated resource			Inferred resource		
		Tonnage (t*1000)	Gold (g/t)	Ounces (oz)	Tonnage (t*1000)	Gold (g/t)	Ounces (oz)
Colomac Main	Open pit	54,504	1.45	2,548,000	2,625	1.97	166,000
	Underground	8,750	1.77	498,000	10,017	1.97	634,000
24/27	Open pit	1,451	1.75	82,000	15	1.51	700
	Underground	514	1.55	26,000	305	1.97	19,000
Goldcrest	Open pit	2,849	1.36	125,000	104	1.52	5,000
	Underground	659	1.49	32,000	225	1.29	9,000
Grizzly Bear	Open pit	1,142	1.34	49,000	11	0.69	250
	Underground	563	1.54	28,000	156	1.43	7,000
Cass	Open pit	-	-	-	3,983	2.36	302,000
	Underground	-	-	-	702	2.05	46,000
Kim	Open pit	-	-	-	2,568	1.72	142,000
	Underground	-	-	-	662	1.88	40,000
Treasure Island	Open pit	-	-	-	962	3.86	119,000
	Underground	-	-	-	857	3.01	83,000
Damoti	Open pit	-	-	-	505	4.13	67,000
	Underground	-	-	-	601	2.60	50,000
Total		70,432	1.50	3,388,000	24,299	2.17	1,691,000

## Cabin Lake Gold Property – Rover Metals Corp.

The Cabin Lake Gold property (100% Rover Metals Corp.) comprises five claims in three blocks covering 1,522 hectares and is located 40 kilometres north of Behchokò, with a permitted winter road connection to Highway 3. The property was first prospected in 1939 and has been the subject of various exploration efforts since then. A 1987, NI 43-101 non-compliant resource for the Arrow Zone estimates 91,000 tonnes at 0.30 ounces per tonne gold (average grade of 8.5 grams per tonne gold). Gold mineralization primarily occurs in quartz veins in shears, and is hosted in iron formation of the Archean Yellowknife Supergroup. Since acquiring the project in 2018, Rover Metals Corp. has carried out diamond drilling, airborne magnetic and ground induced polarization surveys, with some accompanying work on their nearby Slemon and Camp Gold projects.

In March 2022, Rover Metals Corp. announced the commencement of a third phase of drilling at the Cabin Lake Gold project with the goal of targeting the highest-grade proven zones at the Arrow Zone and the Beaver Zone, both at depth and along surface strike. No results have been reported as of the time of writing.

## South Gordon Lake Project – Golden Pursuit Resources Ltd.

The South Gordon Lake project (100% Golden Pursuit Resources Ltd.) comprises 18 territorial and 13 federal claims along with four historical mining leases. The property is located approximately 80 kilometres

north-northeast of Yellowknife and contains ten historical high-grade gold occurrences, including the past-producing Camlaren underground gold mine. Camlaren reportedly produced over 992 kilograms of gold from ore with an average grade of 19.54 grams per tonne in the 1960s and 1980s. A historical, NI 43-101 non-compliant resource estimates that 9,979 tonnes at 19.8 grams per tonne gold remains at Camlaren, presumably near the bottom of the old mine workings. Gold mineralization is free-milling and is hosted by quartz veins in metamorphosed Archean turbidites.

At the end of June 2022, Golden Pursuit Resources Ltd. announced it had completed a work program consisting of sampling, line cutting, permitting, and geophysical surveys (magnetometer and IP). At the same time, they announced results from the 2021 work program. Sampling confirmed historical assays results. A number of samples contained two to four grams per tonne gold, some up to 30 to 40 grams per tonne gold, and one sample from the Lynx zone returned 6,190 grams per tonne gold. The induced polarization surveys documented strong resistivity and chargeability zones associated with the Kidney Pond zone.

## **Mon Gold Property – Sixty North Gold Mining Ltd.**

The Mon Gold property (100% Sixty North Gold Mining Ltd.) comprises 14 contiguous mining leases and one claim covering 821 hectares located 40 kilometres north of Yellowknife. It hosts the past producing Mon Mine. Gold mineralization in the deposit is associated with quartz veins and shearing in metamorphosed Archean turbidites. The mine produced 15,000 ounces of gold from 15,000 tonnes of ore between 1989 and 1997. Sixty North Gold Mining Ltd. restarted exploration activities on the property in 2016.

In early 2022, Sixty North constructed a winter road from Highway 4 to the Mon property which was used to transport various supplies to the site including a recently acquired Multipower Pioneer diamond drill.

In March 2022, Sixty North announced assay results from four samples of the Main Vein. A 0.9-metre-wide exposure of the east limb of the Main Vein, 115 metres north of the last stope, returned 10.2 grams per tonne gold from a continuous chip sample. The other three samples were collected across a 1.7-metre-wide vein and returned a composite grade of 4.05 grams per tonne gold. In 2023, Sixty North plans to drive an additional 70 metres of underground drift to develop draw points on the vein that had previously produced at 30 grams per tonne gold. Stopes will then be developed and some of the gold-bearing quartz vein will be extracted and stockpiled on surface.

Sixty North Gold Mining Ltd. followed up on a 2021 outcrop grab sample with greater than 1% nickel, 0.18% cobalt, and 0.429 grams per tonne gold. Six grab samples from the weakly gossanous albitite unit at the discovery outcrop averaged greater than 0.41% nickel, 0.05% cobalt, 0.17 grams per tonne gold, 0.03 grams per tonne platinum, and 0.01 grams per tonne palladium. Nine grab samples collected from the Wayne Zone, along strike of the discovery outcrop, returned copper values up to 0.28%, cobalt to 0.01%, silver to 1.8 grams per tonne, and up to 0.21% nickel, with only slightly elevated REE concentration. Nine grab samples collected from Bear Zone returned gold values up to 5.9 grams per tonne, three samples with elevated palladium, silver to 11.35 grams per tonne, copper to 0.02%, zinc to 0.08%, lead to 0.14%, nickel to 0.05%, and no elevated REE concentrations. Sixty North considers this a prospective iron oxide-copper-gold target.



## Base metals

### Gayna River Project – Fireweed Metals Corp.

The Gayna River project (100% Fireweed Metals Corp.) comprises 11 claims covering 12,875 hectares and is a carbonate-hosted zinc-lead-silver prospect located in the northern Mackenzie Mountains. It is located approximately 150 kilometres southwest of the winter road between Fort Good Hope and Norman Wells. Mineralization was discovered in the 1970s and Rio Tinto had drilled over 28,000 metres by late 1970s. Based on the results of this drilling, a historical estimate of 2,436,798 tonnes of 4.58% zinc and 0.52% lead was calculated. Fireweed Metals Corp. (formerly Fireweed Zinc Ltd.) announced in May 2022 that it had acquired the Gayna River project with an aim to test a new deposit models in which high-grade mineralization forms on the steeply dipping sides of Neoproterozoic carbonate reefs.

During the 2022 field season, Fireweed carried out detailed mapping, prospecting, LiDAR, and ground gravity surveys. Results were reported for eight grab samples with concentrations of zinc as high as 51.2% and lead as high as 73.7%. Gallium and germanium concentrations of up to 42 ppm and 99 ppm, respectively, were also reported.

Fireweed completed a ten-sample soil sampling program across the Jaws anomaly to verify the location and magnitude of the highest historic lead-in-soil values reported for the area and to validate the historical soil geochemical dataset. Consistent with historical results, all ten samples contained more than 4,000 parts per million lead, including seven samples with more than 1% lead, one sample with 27.5% lead and 176 parts per million silver, and another with 0.75% zinc.

A LiDAR survey was flown over the property (128.75 square kilometres) to generate a high-resolution topographic surface and accompanying orthophotos, which will enable high-resolution terrain corrections for the ground gravity survey and provide a base map for future exploration work. Fireweed reported that there is very good agreement (typically within 10 to 15 metres) between the drill collar locations identified in the LiDAR data and the collar locations digitized on historic maps.

A 52.7 line-kilometre ground gravity survey was completed over two areas identified as geologically favourable based on their proximity to carbonate reef rocks and possible buried reef margins. Fireweed reported that gravity highs align with inferred reef margins.

### O'Connor Lake Project – Slave Lake Zinc Corp.

The O'Connor Lake project (100% Slave Lake Zinc Corp.) comprises 10 claims covering 7,624 hectares and is located south of Great Slave Lake, approximately 100 kilometres east of Fort Resolution. Zinc-lead mineralization is hosted in quartz-carbonate veins in sheared gneissic rocks. Historical exploration in the area took place prior to 1952; most work was concentrated in the Shaft Zone and included bulk sampling from trenches, drilling, and underground development. After more than 70 years of no exploration activity, Slave Lake Zinc acquired the property in 2016.

In August and September 2022, Slave Lake Zinc carried out a field program designed to examine and sample more than 25 regional-scale historical mineral showings and to ground truth a series of geophysical anomalies indicated by the 2021 airborne geophysical survey. On October 12, 2022, assay results were reported for four samples collected from a mineralized structure lying approximately five kilometers north of the Shaft Zone with lead concentrations from 2.95% to 12.0% and zinc concentrations from 2.90% to 5.55%.

In November 2022, Slave Lake Zinc released the results from a 900 line-kilometre airborne geophysical survey flown in 2021 over the main structural corridor. The survey results correlate well with ground geophysical anomalies delineated in 2019 and suggest that the hydrothermal structural corridor surveyed has the potential to host similar mineralized structures.

## **Pine Point Project – Osisko Metals Inc.**

Osisko Metals Inc.'s Pine Point project (100% Pine Point Mining Limited) covers a total of 46,884 hectares with 40 leases and 106 claims. The property hosts a past-producing zinc-lead mine located near the south shore of Great Slave Lake between Hay River and Fort Resolution. Mississippi Valley-type base metal mineralization is hosted in early Devonian carbonates. Open pit mining began in 1964 and continued for more than 20 years, producing 68.8 million tonnes at 6.7% zinc and 2.9% lead. Osisko Metals acquired the project in 2018 and has focused exploration efforts on upgrading the historical database, carrying out an infill drilling program, and developing geological and hydrogeological models for the property.

In 2022, Osisko Metals reported drilling more than 300 holes in the North and West zones of Pine Point as part of an ongoing infill and hydrogeological drilling campaign. The infill holes were designed to achieve an average drill spacing of 30 metres with the intention of upgrading resources classified as inferred to the indicated category in order to be used in a feasibility study expected late in the second quarter of 2023. Highlighted assay results include 6.00 metres grading 9.94% zinc and 13.66% lead in hole Y68-22-PP-019, 12.00 metres grading 25.80% zinc and 6.84% lead in hole X71-22-PP-040, 21.00 metres grading 11.65% zinc and 1.57% lead in hole X64-22-PP-002, and 10.00 metres grading 13.46% zinc and 4.14% lead in hole K51-22-PP-002. Osisko reported that six diamond drills were active at Pine Point in January 2023 and that they plan to complete the infill drill program.

In August 2022, Osisko Metals announced the release of an updated preliminary economic assessment for the Pine Point project. The preliminary economic assessment integrated updated long-term prices for zinc and lead, increased mined resources, cost escalations in CAPEX and OPEX, and reduced life-of-mine water management costs resulting from a recently completed hydrogeological model. The latter reduced the estimated dewatering volume by 30% compared with the 2020 preliminary economic assessment, with potential for a further forecasted reduction of 15% as the project advances to feasibility. The updated preliminary economic assessment has indicated an after-tax net present value of \$603M and internal rate of return of 25%. It is based on the current mineral resource estimates that are amenable to open pit and shallow underground mining, which consist of 15.7 million tonnes grading 5.55% zinc equivalent of indicated mineral resources and 47.2 million tonnes grading 5.94% zinc equivalent of inferred mineral resources.

In October 2022, Osisko Metals announced that it had signed a memorandum of understanding with the Northwest Territories Power Corporation (NTPC) that outlines the process of negotiating power connection to

the Taltson hydroelectric grid and power purchase agreements. The memorandum of understanding will allow both parties to explore, discuss, and establish mutually agreeable arrangements through which NTPC can supply and sell hydroelectric power and Osisko can purchase electricity and any related services for use at the Pine Point project site. The sale of excess electricity generated at the Taltson Hydroelectric Facility will be a significant part of the discussions.

On February 22<sup>nd</sup> 2023, Osisko Metals announced that it has entered into an investment agreement with a subsidiary of Appian Natural Resources Fund III LP, which is advised by Appian Capital Advisory LLP, a London-based private equity group specializing in the acquisition and development of mining assets, to form a joint venture to advance the project. This commitment by Appian to invest up to \$100 million (CAD) over an estimated four-year period with the aim of having a “shovel-ready” project will allow them to acquire a 60% interest in Pine Point Mining Limited.

## **Prairie Creek Project - NorZinc Ltd.**

The Prairie Creek project (100% NorZinc Ltd.) comprises 12 leases covering 7,354 hectares and is located in a zinc-lead-silver district in the southern Mackenzie Mountains. Here, Silurian to Devonian sedimentary rocks host three styles of zinc-lead mineralization including quartz-carbonate-sulfide veins, stratabound replacement sulfides, and classic Mississippi Valley-type sulfides. The vein-style mineralization is the most enriched in silver and has been the primary focus of exploration efforts. In the 1970s and early 1980s, the Prairie Creek mine site was developed with extensive surface facilities and underground workings but never saw production due to the collapse of the price of silver in the early 1980s. The current owner, NorZinc, first acquired an interest in the Prairie Creek property in 1991 and secured a 100% interest in 2004. Since becoming involved in the project, NorZinc has completed more than 78,000 metres of diamond drilling and the 2021 mineral resource estimate included 9.8 million tonnes of total measured and indicated resources at 22.7% zinc equivalent and 6.4 million tonnes of total inferred resources at 24.1% zinc equivalent. Results from a 2021 preliminary economic assessment for a 2,400 tonne per day mine plan with a mine life of 20.3 years predicts average annual payable zinc equivalent production of 261 million pounds. NorZinc expects to commence concentrate production by the end of 2025.

In May 2022, NorZinc announced their planned work program for 2022. The plan included a 5,300-metre surface exploration drill program to further validate the geotechnical structural controls and refine the mining dilution volume estimates, some additional metallurgical sample collection and test work to increase the accuracy of the concentrate quality and recovery forecasts for years one to five, and ongoing water treatment activities. An updated feasibility study, incorporating results from the summer drill and testing programs was planned to commence in the fourth quarter of 2022 and to be issued in mid-2023. The start of the drill program was announced in June; no results had been reported at the time of publication. NorZinc announced the initiation of a feasibility study-level metallurgical test program for Prairie Creek in September. The company has engaged SGS Canada Inc. to conduct a full and comprehensive test program with the objective of finalizing milling parameters and performance characteristics for the planned first three to five years of production.

In August 2022, NorZinc announced the signing of an environmental agreement with the Naha Dehe Dene Band and Łı́ı́łı́ Kę́ First Nation Band for the development and operation of the Prairie Creek project and the all-season access road on these communities' traditional territory. NorZinc also announced the signing of a

transportation corridor benefits agreement with Acho Dene Koe First Nation related to the transportation of mineral concentrate from the Prairie Creek project through their traditional territory in the Northwest Territories and British Columbia.

In September 2022, NorZinc announced that the permitting process had been completed for mining operations associated with the mine expansion plan of 2,400 tonnes per day. This includes a new land use permit from the Mackenzie Valley Land and Water Board and a new water licence from the Government of Northwest Territories. In November 2022, NorZinc announced that it had received approval from the Government of Northwest Territories, the Mackenzie Valley Land and Water Board, and Parks Canada for all management plans related to the permit and licence to construct the Pioneer Winter Road. This road represents phase 1 of the 170-kilometre all-season access road connecting Prairie Creek to Highway 7. Preparation work for construction had commenced as of September 19, 2022.

In December 2022, NorZinc announced the completion of an acquisition arrangement with RCF VI CAD LLC, effective immediately. Under the arrangement agreement, described in detail in a September 30, 2022, press release, RCF acquired all of the issued and outstanding common shares of the company not currently owned by RCF or its affiliates for \$0.0325 in cash per NorZinc share. As a result, NorZinc and RCF have amended and restated the credit facility dated May 19, 2022, to provide for an increase in the US\$6 million commitment thereunder by US\$11 million.

## **Mactung Tungsten Project – Fireweed Metals Corp.**

On June 7, 2022, Fireweed Zinc Ltd. (now Fireweed Metals Corp.) signed a binding letter of intent with the Government of Northwest Territories to acquire the Mactung Tungsten project, located in both Yukon and the Northwest Territories. Fireweed Metals also holds the Macmillan Pass project which is located in Yukon directly to the west of Mactung. The 37.6 km<sup>2</sup> Mactung Tungsten project is one of the largest and highest-grade undeveloped tungsten resources in the world.

Field activities in 2022 included an on-site bulk density of resampling program along with analysis and re-assaying of historic drill core to inform a resource estimate expected in early 2023. A LiDAR survey was also flown over the property.

## **NICO Cobalt-Gold-Bismuth-Copper Project – Fortune Minerals Limited**

The NICO Cobalt-Gold-Bismuth-Copper project (100% Fortune Minerals Limited) comprises 10 leases covering 5,138 hectares and is located approximately 160 kilometres northwest of Yellowknife. The recent completion of the Thçhç All-Season Highway will bring significant logistical benefits to this project. The NICO project includes a planned open pit, underground mine, mill, and concentrator in the Northwest Territories and a planned hydrometallurgical refinery in Alberta. The Mineral Reserves for NICO consists of 33.1 million tonnes containing 37.3 million kilograms of cobalt, 1.1 million troy ounces of gold, 46.3 million kilograms of bismuth, and 12.3 million kilograms of copper.

In 2022, Fortune announced the results of their 2,482-metre, 13 drill-hole exploration program from 2021 and continued to work towards the acquisition of a brownfields site in Lamont Country, Alberta, to construct a hydrometallurgical facility.

Four holes were drilled to better determine the extent of mineralization at Peanut Lake, where previous drilling has returned significant gold, cobalt, and bismuth values. Highlights include 6.4 metres of 0.355% cobalt, 1.105 gram per tonne gold, 0.049% bismuth; 3.17 metres of 0.423% cobalt, 0.554 gram per tonne gold, 0.369% bismuth; and 4.8 metres of 0.118% cobalt, 0.500 gram per tonne gold. These results confirm the continuity of mineralization in the Peanut Lake area over at least a 400 metres strike length. Six holes were drilled to test the east strike extension of the NICO deposit beyond what was considered to be a terminal fault. These holes identified NICO-style mineralization along the eastern strike projection beyond the fault.

## **Project 939 and Project EA South – StrategX Elements Corp.**

Project 939 and Project EA South (100% StratigX Elements Corp.) comprises 12 prospecting permits covering 93,821 hectares and 16 claims covering 12,638 hectares in the general area of the East Arm of Great Slave Lake. The company has two exploration properties called Project 939 (north side of East Arm) and Project EA South (south side of East Arm). Work reported in 2022 for the latter project includes rock sample assays which returned values up to 11,400 ppm copper and 3,650 ppm cobalt.

## **Muskox Pegmatite Lithium Project – Gama Explorations Inc. and RGV Lithium Explorations Inc.**

The Muskox Pegmatite Lithium project consists of ten claims covering 4,817 hectares along the Ingraham Trail approximately 40 kilometres east of Yellowknife. On January 16, 2023, Gama Explorations Inc. announced that they have entered into a binding letter of intent for an option to acquire a 100% interest in the property from RGV Lithium Explorations Inc.

Channel sampling work was carried out in 2022, with ten samples returning grades up to 1.34% LiO<sub>2</sub> from the CM-1 pegmatite.

## **Yellowknife Lithium Project – Li-FT Power Ltd.**

On December 30, 2022, Li-FT Power Ltd. announced that they had completed the acquisition of the Yellowknife Lithium project which comprises 13 mineral leases covering 1,497 hectares. Field work was carried out in 2022 to evaluate the extent and tenor of known mineralization. The filing of a NI 43-101 compliant report for the property was announced on January 13, 2023.

## Mining Incentive Program

The Mining Incentive Program (MIP) was launched in 2014 to help increase levels of mineral exploration in the Northwest Territories. The Northwest Territories Geological Survey administers the program which provides funding to prospectors and exploration companies to conduct mineral exploration in the Northwest Territories. From 2014 to 2021, the MIP provided over \$6 million in government support to Northwest Territories' mineral exploration projects. This \$6 million investment resulted in additional project spending of over \$29 million from MIP recipients.

In 2021-22, the Government of Northwest Territories awarded \$1 million through the MIP to 14 successful applicants (7 corporate and 7 prospectors; Tables 12a and 12b), primarily for early-stage mineral exploration projects. In August 2021, the Canadian Northern Economic Development Agency (CanNor) confirmed an additional \$500,000 in funding to support a second call for MIP applications, bringing the total program budget for the year to \$1.5 million. This one-time CanNor MIP funding was awarded to five advanced-stage exploration projects. Each project received \$100,000 to support work taking place between September 2021 and March 2022. MIP support in 2021-22 leveraged more than \$12.6 million in additional investment from the funded projects.

2022-23 saw the MIP budget increase to \$1.3 million. This funding was awarded to 5 prospector-driven exploration projects and 11 corporate exploration projects – See Table 12 for the initial funding awarded.

*Table 12a. The corporate 2022-2023 Mining Incentive Program recipients.*

Corporate recipient	Commodity	Region	Funds awarded
Arctic Star Exploration	Diamonds	North Slave	\$168,000
Fireweed Zinc	Zinc	Gwich'in-Sahtu	\$132,000
Gold Terra-Campbell Shear	Gold	North Slave	\$132,000
Gold Terra-Nib North	Gold	North Slave	\$60,642
Golden Planet	Gold	North Slave	\$129,344
Kennady Diamonds	Diamonds	North Slave	\$136,800
NICAN Resources	Nickel	South Slave	\$67,879
Nighthawk Gold	Gold	North Slave	\$124,800
Redbed Resources	Copper	Dehcho	\$136,800
StrategX Elements	Cobalt	North Slave	\$120,000
Voyageur Exploration	REE	North Slave	\$22,349
<b>Corporate Total</b>			<b>\$1,230,614</b>

*Table 12a. The prospector 2022-2023 Mining Incentive Program recipients.*

Prospector recipient	Commodity	Region	Funds awarded
Danny Yakeleya	Gold	Sahtu	\$17,500
Dave Nickerson	Uranium	North Slave	\$6,840
Dave Webb	Gold	North Slave	\$11,690
Jared Suchan	Diamonds	North Slave	\$20,000
Ryan Bachynski	REE	North Slave	\$15,784
<b>Prospector Total</b>			<b>\$71,814</b>

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