

Quarterly Activities Report: December 2022

Highlights

- Continued execution against renewed strategy to prioritise earlier production and cash flow
- All shareholders resolutions passed at the Annual and Extraordinary General Meeting
 - All resolutions relating to Northern Minerals strategic partnership with Iluka Resources Limited passed
- \$3.9m 2022 R&D Rebate Received
- \$3.7M raised from the Company's Share Purchase Plan
- Board and Executive changes
- Drilling activities commenced in early November at Wolverine with 2,123m of drilling during the Quarter
- Key Early Contractor Involvement Contracts let for the engineering and design of the Browns Range Beneficiation Plant



Figure 1: Geotechnical Drilling – Wolverine HREE Deposit

Powering Technology.

Northern Minerals
Ground Floor
34 Colin Street
West Perth WA 6005

PO Box 669
West Perth WA 6872
northernminerals.com.au
info@northernminerals.com.au

ASX: NTU
T: +61 8 9481 2344
ABN: 61 119 966 353

Executive Chairman's Review

The December quarter saw Northern Minerals hold both its Annual General Meeting and an Extraordinary General Meeting a month later. All resolutions put to shareholders at the Annual General Meeting (25 November 2022) and Extraordinary General Meeting (12 December 2022) were successfully passed and decided by way of a poll.

The first three motions shareholders were asked to vote on at our Extraordinary General Meeting (EGM) in December were in relation to our strategic partnership with Iluka Resources Limited (ASX:ILU) announced in October 2022. Those motions were to ratify the initial investment made by Iluka and to authorise the subsequent investments, subject to other performance conditions being met.

The partnership is a key component of our strategy, which is initially focused on prioritising the rich Wolverine deposit and aiming to bring forward plans for commercial production. The partnership with Iluka reinforces the Board's confidence in its strategy and the enormous potential of the precinct. We are pleased that Shareholders were receptive to our plans at the EGM and supported all three resolutions.

This is a mutually beneficial partnership, with Iluka agreeing to purchase all available concentrate from the Browns Range project, until the delivery of contained rare earth oxide (REO) has reached 30.5kt. This covers the initial 8 years plus mine life based on the current known mineral resource. The supply agreement with Iluka de-risks and accelerates the development of the Browns Range Project, significantly reducing our likely capex.

Iluka has initially invested \$20 million in Northern Minerals via a \$15 million convertible note and a \$5 million share placement. This will provide our Company with the funding required to complete a definitive feasibility study (DFS), promoting delivery of a final investment decision (FID) on Browns Range over the next year.

In addition to its initial investment, Iluka has committed to provide additional equity funding towards Browns Range post FID through a further placement, subject to certain conditions.

Following shareholder approval at the EGM in December, Iluka and Northern Minerals have also agreed to the grant of put and call options over additional Northern shares. This provides Iluka with a pathway up to an ultimate 19.9% shareholding in Northern Minerals.

For Iluka, the Browns Range concentrate will be an additional source of quality differentiated feedstock for the integrated rare earths refinery it is building at Eneabba in Western Australia and will be a significant contributor to establishing the Eneabba refinery as a long-term producer of highly valued heavy, as well as light, permanent magnet REOs. Having the concentrate processed at Eneabba will be the first time that the value addition will occur in Australia and demonstrates the refinery's strategic importance in fostering a new critical minerals supply chain.

Following the successful shareholder vote, Northern Minerals now has a clear path towards production underpinned by a strategic relationship with Iluka Resources. We own an orebody rich in the strategic heavy rare earths dysprosium and terbium, and an aspiration – together with Iluka – to create an Australian-based supply chain for prized rare earth metals critical in the production of the permanent magnets used in high performance electric vehicles and wind turbines.

Board and Executive Changes

Mark Tory, who has been with the Company since December 2012 and has been Chief Executive Officer since July 2020, left the Company on 30 November 2022, following an orderly transfer of executive responsibilities. The Board wishes to thank Mark for his long and productive service to the company.

On 2 December 2022 Shane Hartwig joined to the Board as Executive Director – Finance. Located in the Sydney Office, he is responsible for the Company's financial governance and reporting and capital management and will assist in the commercial aspects of developing the Browns Range Project.

On 9 December, Mr Ming Lu resigned from his position as Non-Executive Director of Northern Minerals. Mr Lu was appointed to the Board of Northern Minerals in October 2018. The Company and the Board wishes Mr Lu every success in his future endeavours and thanks him for his contribution to the Company.

Share Purchase Plan

During the quarter the Company announced that its Share Purchase Plan had closed with total funds raised of \$3.66 m before costs being received.

2022 R&D Rebate Received

During the quarter Northern Minerals Limited received a refund payment of \$3.9 million from the Australian Tax Office (ATO). This relates to the Company's refundable R & D tax offset claim for the financial year ended 30 June 2022.

Definitive Feasibility Study

The establishment of the strategic partnership with Iluka underpinned the commencement of the Definitive Feasibility Study (DFS) on the Wolverine Rare Earth Project during the quarter with a focus on mobilising the project team including several key consultants and engineers to contribute to the DFS.

This team will leverage work undertaken in the earlier 2015 DFS combined with the experience and knowledge gained from operating the large scale 10 tph pilot plant at Browns Range from 2018 to 2022.

The DFS, expected to be completed in Q4 2023, will be for a commercial scale mining and beneficiation plant at Browns Range that will mine and process ore from the Wolverine deposit to produce a xenotime concentrate for supply to Iluka's rare earth refinery at Eneabba.

The Iluka Supply Agreement covers the current Mineral Resource over an initial 8+ year mine life for 30,500 tonnes of contained TREO in concentrate, of which 2,800 tonnes will be dysprosium and 420 tonnes will be terbium.

Mineral Resource Estimate

During the quarter, international geological and mining consulting firm CSA Global prepared an updated Mineral Resource estimate for the Wolverine deposit, reported in accordance with the JORC Code¹, and announced to the market on 10 October 2022.²

Mine Design & Scheduling

The updated Wolverine Mineral Resource estimate required alternative mining methods to be assessed. Entech Pty Ltd have been engaged for the DFS mining studies and preliminary optimisation studies were undertaken during the quarter to assess the feasibility of an open pit at Wolverine prior to proceeding to an underground mine. The assessment showed that an initial open pit at Wolverine, approximately the same size as the 2015 DFS open pit, is viable and further work is underway to determine the optimum cut-over point to transition from open pit to underground mining.

A second program of geotechnical drilling commenced during the quarter to provide additional data for the open pit and underground mine designs.

Process Design and Engineering

The process design package for the Beneficiation process plant as well as the preliminary layout for the process plant was completed during the quarter.

The process includes crushing, ore sorting, milling, magnetic separation, flotation and filtration to produce a high grade 25% TREO xenotime concentrate rich in dysprosium and terbium. Following the 60% improvement in ore-sorted product grade evidenced from the pilot plant ore sorter operation, the inclusion of ore sorter circuit in the commercial scale plant to increase mill feed grade and de-risk mining dilution is a notable improvement to the 2015 DFS Beneficiation process plant design.

Geotechnical investigation for the process plant is scheduled to be completed in the next quarter.

The Company appointed GR Engineering Services Ltd and MACA Interquip to undertake a dual-party Early Contractor Involvement (ECI) process for the Beneficiation Plant during the quarter. This requires the contractors to perform all engineering, design and costing activities required to enter into an executable lumpsum Engineering Procurement and Construction (EPC) contract for the delivery of the Beneficiation Plant.

Work has commenced and completion of the ECI is anticipated during Q2 2023, with the final preferred EPC contractor being notified during Q3 2023.

¹ Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, The JORC Code 2012 Edition, Effective December 2013, Prepared by the Joint Ore Reserves Committee of the Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

² ASX announcement 10 October 2022: Updated Wolverine Mineral Resource Estimate at Browns Range

Non-Process Infrastructure

Non-Process Infrastructure (NPI) design and studies was commenced in several areas including

- Tailings Storage Facility,
- Surface water management
- Water supply and dewatering study
- Airstrip upgrade design
- Road and earthworks design
- Camp water services equipment
- Accommodation village upgrade and NPI buildings design
- Communications study
- Route survey and logistics study

Expenditure on development activities during the quarter was approximately \$1.82 million.

Exploration Activities

Expenditure on exploration and evaluation activities during the quarter was approximately \$0.71 million.

Drilling activities commenced in early November at Wolverine. An outline of the programme is given below.

Wolverine geotechnical assessment of the hanging wall (HW), footwall (FW) and orebody.

Work completed in the second half of 2022 concentrated on collecting samples from the Wolverine HW and FW zones and undertaking unconfined compressive strength testing (UCS and Tri-axial test work). This test work provided further additional detail to support an underground sub level cave mining model. These results were analysed by Beck Engineering who made the following recommendations earlier this year for further testing.

- Rock mass property testing (UCS and Tri-axial) within the orebody
- Further test work in the HW particularly the upper western HW

A total of 11 diamond drill holes have been planned to achieve the suggested geotechnical objectives and in addition, are targeting areas of the orebody that have a lower level of grade and geological confidence due to the current drill hole spacing.

A total of six holes have been completed for 2,123m of drilling during the Quarter. Drilling is expected to be completed by the end of January.

Proposed Tailings Storage Facility (TSF)

Soil compression testing of the sub surface material beneath the proposed embankment walls was completed. Five shallow holes were cored and sampled with an average depth of 20 metres.



Figure 2: DDH1 – Geotechnical Drilling

Payments to related parties of the entity and their associates

Payments made during the quarter and included in 6.1 and 6.2 of Appendix 5B – Mining exploration entity quarterly cash flow report are detailed below:

Aggregate amount of payments to related parties and their associates included in cash flows from operating activities total \$0.34 million.

This comprises of payments to Executive and Non-executive directors remuneration from services. There were no payments to related parties and their associates included in cash flows from investing activities.

Authorised by The Board of Directors of Northern Minerals Limited

For further information:

Northern Minerals

Nick Curtis
Executive Chairman
+61 411 425 784

For media and broker enquiries:

Domestique Consulting

Alan Jury

+61 418 833 149

alan@domestiqueconsulting.com.au

Roger Newby

+61 401 278 906

roger@domestiqueconsulting.com.au

About Northern Minerals:

Northern Minerals Limited (ASX: NTU) (Northern Minerals or the Company) owns 100% of the Browns Range Project in northern Western Australia, tenements uniquely rich in the heavy rare earth elements dysprosium (Dy) and terbium (Tb).

Dysprosium and terbium are critical in the production of dysprosium neodymium iron-boron (DyNdFeB) magnets used in clean energy, military, and high technology solutions. Dysprosium and terbium are prized because their unique properties improve the durability of magnets by increasing their resistance to demagnetisation.

The Project's flagship deposit is Wolverine, which is thought to be the highest grade dysprosium and terbium orebody in Australia. The Company is preparing to bring Wolverine into production with the objective of providing a reliable alternative source of dysprosium and terbium to production sourced from China. Northern Minerals is one of only a few companies outside of China to have produced these heavy rare earth elements.

To further its strategic objective, Northern Minerals is preparing to undertake a Definitive Feasibility Study for a commercial scale beneficiation plant to process Wolverine ore.

Apart from Wolverine, Northern Minerals has several other deposits and prospects within the Browns Range Project that contain dysprosium and other heavy rare earth elements, hosted in xenotime mineralisation.

For more information: northernminerals.com.au.



ASX Code:	NTU	Market Capitalisation:	A\$208.4m
Issued Shares:	5,082m	Cash (as at 31 December 2022)	A\$22.3m

Tenement Report

Project	Location	Tenement ID	State	Status	Holder Application	Interest
Browns Range WA	Browns Range	E80/4479	WA	Granted	Northern Minerals	100%
	Browns Range	E80/4782	WA	Granted	Northern Minerals	100%
	Browns Range	E80/5040	WA	Granted	Northern Minerals	100%
	Browns Range	E80/5041	WA	Granted	Northern Minerals	100%
	Browns Range	M80/627	WA	Granted	Northern Minerals	100%
	Browns Range	L80/76	WA	Granted	Northern Minerals	100%
	Browns Range	L80/77	WA	Granted	Northern Minerals	100%
	Browns Range	L80/78	WA	Granted	Northern Minerals	100%
	Browns Range	L80/79	WA	Granted	Northern Minerals	100%
	Browns Range	L80/107	WA	Application	Northern Minerals	100%
	Browns Range	E80/5260	WA	Granted	Northern Minerals	100%
	Browns Range	E80/5261	WA	Granted	Northern Minerals	100%
	Browns Range	E80/5367	WA	Granted	Northern Minerals	100%
	Browns Range	E80/5368	WA	Granted	Northern Minerals	100%
	Browns Range	E80/5369	WA	Granted	Northern Minerals	100%
	Browns Range	E80/5370	WA	Granted	Northern Minerals	100%
	Browns Range	E80/5418	WA	Granted	Northern Minerals	100%
Browns Range NT	Browns Range	EL24193	NT	Granted	Northern Minerals	100%
	Browns Range	EL24174	NT	Granted	Northern Star Resources	REE rights only
	Browns Range	EL26270	NT	Granted	Northern Minerals	100%
	Browns Range	EL26286	NT	Granted	Northern Minerals	100%
	Browns Range	ELA32161	NT	Application	Northern Minerals	100%

Project	Location	Tenement ID	State	Status	Holder Application	Interest
	Browns Range	ELA32162	NT	Application	Northern Minerals	100%
John Galt	John Galt	E80/4298	WA	Granted	Northern Minerals	100%
	John Galt	E80/4967	WA	Granted	Northern Minerals	100%
	John Galt	E80/5070	WA	Granted	Northern Minerals	100%
	John Galt	E80/5230	WA	Granted	Northern Minerals	100%
Boulder Ridge	Boulder Ridge	EL29594	NT	Granted	Northern Minerals	100%
	Boulder Ridge	ELA24849	NT	Application	Northern Minerals	100% (excluding gold rights)
	Boulder Ridge	ELA24935	NT	Application	Northern Minerals	100% (excluding gold rights)
	Boulder Ridge	EL24177	NT	Granted	Northern Minerals	100%
	Boulder Ridge	EL25171	NT	Granted	Northern Star Resources	REE rights only
	Boulder Ridge	ELA28868	NT	Application	Northern Star Resources	REE rights only
	Boulder Ridge	EL27590	NT	Granted	Northern Star Resources	REE rights only
Gardiner-Tanami NT	Tanami	EL23932	NT	Granted	Northern Star Resources	REE rights only
	Tanami	EL25009	NT	Granted	Northern Star Resources	REE rights only
	Ware Range	EL26498	NT	Granted	Northern Minerals	100%
	Ware Range	EL26541	NT	Granted	Northern Minerals	100%
	Pargee	EL27367	NT	Granted	Northern Minerals	100%
	Tanami	EL29592	NT	Granted	Northern Star Resources	REE rights only
	Tanami	EL29593	NT	Granted	Northern Star Resources	REE rights only
	Tanami	EL29595	NT	Granted	Northern Minerals	100%
	Tanami	ELA29619	NT	Application	Northern Star Resources	REE rights only
	Tanami	EL26635	NT	Granted	Northern Star Resources	REE rights only

Project	Location	Tenement ID	State	Status	Holder Application	Interest
	Tanami	ELA32163	NT	Application	Northern Star Resources	REE rights only
	Tanami	ELA32164	NT	Application	Northern Star Resources	REE rights only
Rabbit Flats	Rabbit Flats	ELA25159	NT	Application	Northern Star Resources	REE rights only
	Rabbit Flats	ELA25160	NT	Application	Northern Star Resources	REE rights only