



**ASX
NTU**

**ELECTRIC
MOTOR/GENERATOR**



**NORTHERN
MINERALS**

Investor Roadshow

September 2019

Presented by
George Bauk
CEO / MD

Disclaimer

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This document is of a summary form only and therefore contains general background information which may not be complete. It should be read in conjunction with and full review made of Northern Minerals disclosures and releases lodged with the Australian Securities Exchange (“ASX”) and available at www.asx.com.au.

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Compliance Statement

The information in this document that relates to the Mineral Resource Estimates of the Wolverine, Gambit, Gambit West, Area 5, Cyclops, Banshee deposits and Pilot Plant Stockpiles is extracted from the Company’s ASX Announcement dated 28 September 2018 entitled “Mineral Resource and Ore Reserve Update – Post Trial Mining Operations at June 30 2018” available to view on the Company’s website (www.northernminerals.com.au) and www.asx.com.au, and was completed in accordance with the guidelines of the JORC Code (2012). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resource Estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

The information in this document that relates to the Mineral Resource Estimate for the Dazzler deposit is extracted from the Company’s ASX Announcement dated 6 March 2019 entitled “Dazzler shines with high-grade Maiden Mineral Resource” available to view on the Company’s website (www.northernminerals.com.au) and www.asx.com.au, and was completed in accordance with the guidelines of the JORC Code (2012). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Mineral Resource Estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

The information in this document that relates to Ore Reserves is extracted from the Company’s ASX Announcement dated 28 September 2018 entitled “Mineral Resource and Ore Reserve Update – Post Trial Mining Operations at June 30 2018” available to view on the Company’s website (www.northernminerals.com.au) and www.asx.com.au, and was completed in accordance with the guidelines of the JORC Code (2012). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Ore Reserves Estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

The information in this document that relates to the Exploration Results from the Iceman deposit is extracted from the Company’s ASX Announcement dated 11 September 2018 entitled “Assay results confirm Dazzler and Iceman discoveries” available to view on the Company’s website (www.northernminerals.com.au) and www.asx.com.au, and was completed in accordance with the guidelines of the JORC Code (2012). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the Exploration Results in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement.

The information in this document that relates to production targets and forecast financial information derived from a production target is extracted from the Company’s ASX Announcement dated 2 March 2015 entitled “DFS positions Browns Range Project as next dysprosium supplier” available to view on the Company’s website (www.northernminerals.com.au) and www.asx.com.au. The Company confirms that all material assumptions underpinning the production targets and forecast financial information in the announcement released on 2 March 2015 continue to apply and have not materially changed.



TREO = Total Rare Earth Oxides – La₂O₃, CeO₂, Pr₆O₁₁, Nd₂O₃, Sm₂O₃, Eu₂O₃, Gd₂O₃, Tb₄O₇, Dy₂O₃, Ho₂O₃, Er₂O₃, Tm₂O₃, Yb₂O₃, Lu₂O₃, Y₂O₃

HREO = Heavy Rare Earth Oxides – Total of Sm₂O₃, Eu₂O₃, Gd₂O₃, Tb₄O₇, Dy₂O₃, Ho₂O₃, Er₂O₃, Tm₂O₃, Yb₂O₃, Lu₂O₃, Y₂O₃

Our Aspiration

Principal supplier of ethically produced Rare Earth metals and separated products from the world's largest Heavy Rare Earth Element inventory within 10 years

A ten year \$228m journey

|  | DISCOVERY | EXPLORATION | EVALUATION AND APPROVALS | | | DFS | NEW PLAN | DEVELOPMENT | | PRODUCTION |
|---|-----------|-------------|--------------------------|------|------|------|----------|-------------|------|------------|
|  | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 |

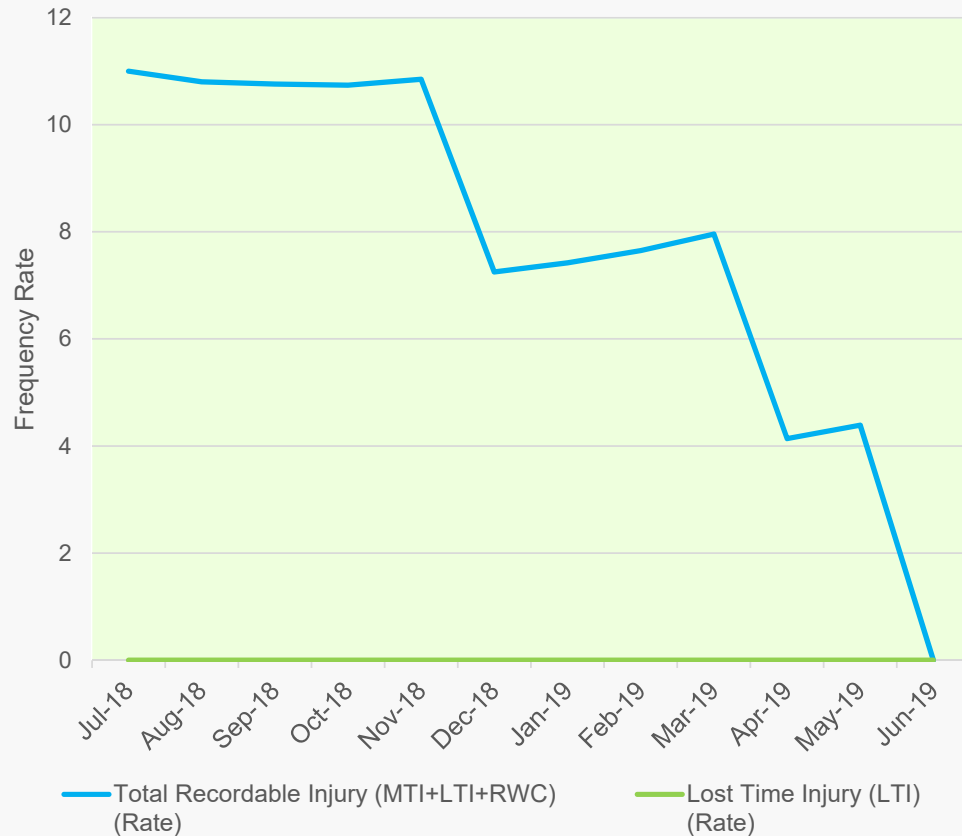
Over the next 18 months our main focus:

- ◆ Accelerated exploration aiming to expand the resource base;
- ◆ Ore sorting implemented;
- ◆ Reach nameplate capacity of the pilot plant;
- ◆ Complete separation scoping study;
- ◆ To test the economic and technical viability of the pilot plant.



Health and Safety

Annual injury performance



Total Recordable Injury Frequency Rate calculations measure the total number of recordable injuries (MTI+LTI+RWC, excluding First Aid) per million hours worked, where MTI = Medical Treatment Injury, LTI = Lost Time Injury, RWC = Restricted Work Case

- ◆ No LTI at the operation for 2 years;
- ◆ TRIFR reached zero in June 2019;
- ◆ Emergency Response training – e.g. confined space rescue;
- ◆ Improvement in Safety Culture;
- ◆ Enhancing safety team.



Environment

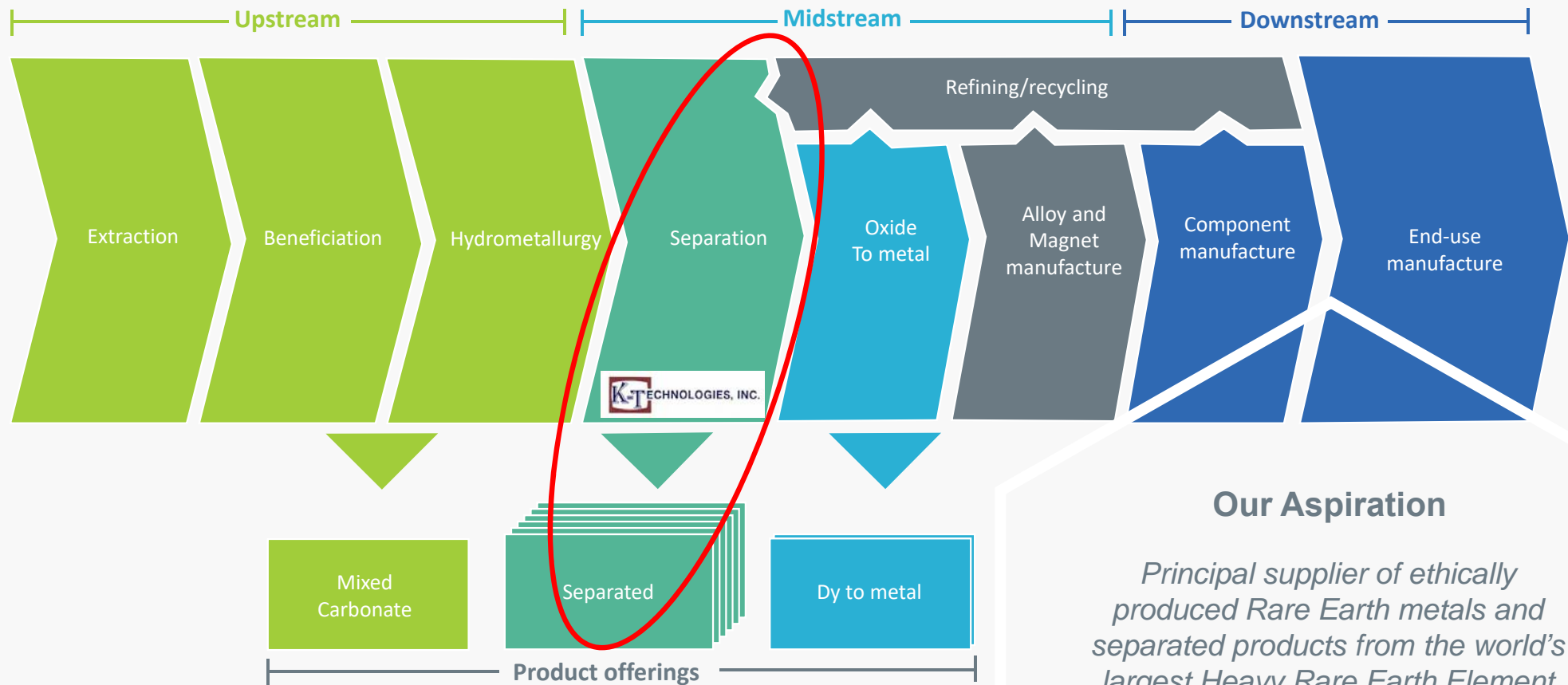
- ◆ Committed to ethically produced rare earths;
- ◆ Environmental Management System in place;
- ◆ Updated Mine Closure Plan submitted to DMIRS;
- ◆ Progressive rehabilitation as areas become available;
- ◆ Expanding the environment team;
- ◆ Ore sorter approvals underway;
- ◆ Dingo Risk Management Strategy - long-term welfare of the local dingo population and the safety of site personnel and visitors.



Browns Range East Kimberley, WA



Product separation



Our Aspiration

Principal supplier of ethically produced Rare Earth metals and separated products from the world's largest Heavy Rare Earth Element inventory within 10 years

Value proposition



Globally significant

Browns Range is one of a few non-Chinese producers of dysprosium



Initiatives

Several projects underway, including ore sorting and separation, to increase value



EV growth & military use

A key ingredient in permanent magnets used in EVs and military use



Exploration upside

New Dazzler Mineral Resource points to improved economics



Pilot plant production

Commissioning has commenced and mixed rare earth carbonate produced



Stable investment jurisdiction

First world economy, infrastructure, environmental and work practices

Dysprosium – critical to the EV evolution

With each electric vehicle using just over 100g of dysprosium, the company understands that demand may increase to over 3,500tpa by 2030. With over 98% of Dy production from China, there is strong interest in the US and globally for new, sustainable sources of supply.



Chinese dominance

State controlled production from largely dirty in situ leach deposits



US critical alert

Trump Government identified rare earths as critical to US economic growth



Defence reliance

State controlled production from largely dirty in situ leach deposits





Pentagon in talks with Australia on rare earths plant: official

Reporting by Ernest Scheyder and Bryan Pietsch. Additional reporting by Melanie Burton in MELBOURNE editing by Jonathan Oatis & Simon Cameron-Moore

“Continuity and guarantee of supply of rare earths and critical minerals is vital to a range of sectors, including defense. Cooperation with international partners is integral to this effort,” a Defence spokeswoman told Reuters.

FINANCIAL REVIEW

Brad Thompson Reporter

Reynolds welcomes deal on rare earths with non-Chinese customer

Defence Minister Linda Reynolds has stressed the importance of rare earths supply to Australia and its allies amid fears that China will use market domination to cripple technology companies and key military suppliers.

FINANCIAL REVIEW

Brad Thompson Reporter

MCA boss pushes case for rare earths investment

Minerals Council of Australia boss Tania Constable is urging overseas investors to back rare earths projects here as concerns grow over China's stranglehold on global supply.

Rare earths put WA on priority list

SARAH ISON

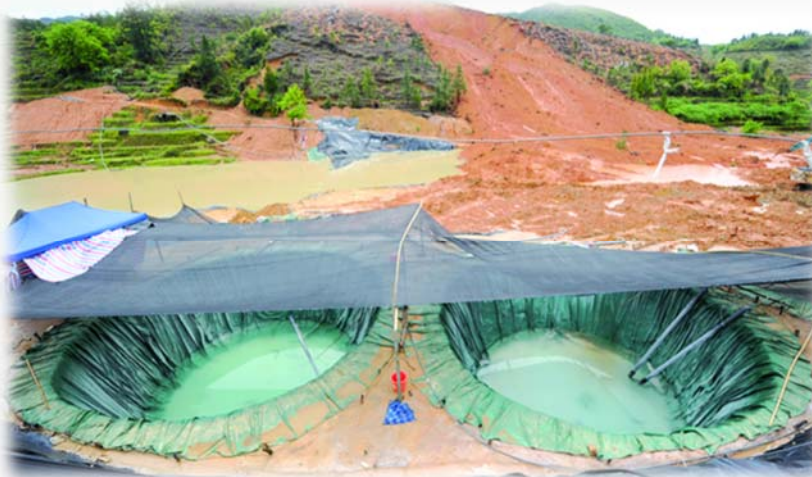
The West Australian last month reported Mr Morrison would talk about a plan for Australia's strategic minerals, including rare earths, when he meets President Donald Trump in Washington next month.

Pentagon looks down under to cut China out of its technologically critical rare earth supply chain

by Russ Read | September 03, 2019 03:08 PM

“Continuity and guarantee of supply of rare earths and critical minerals is vital to a range of sectors, including defense,” an Australian defense ministry spokesperson told the *Washington Examiner*. “Cooperation with international partners is integral to this effort.”

The competition is unsustainable



Southern China in situ leach mining operation



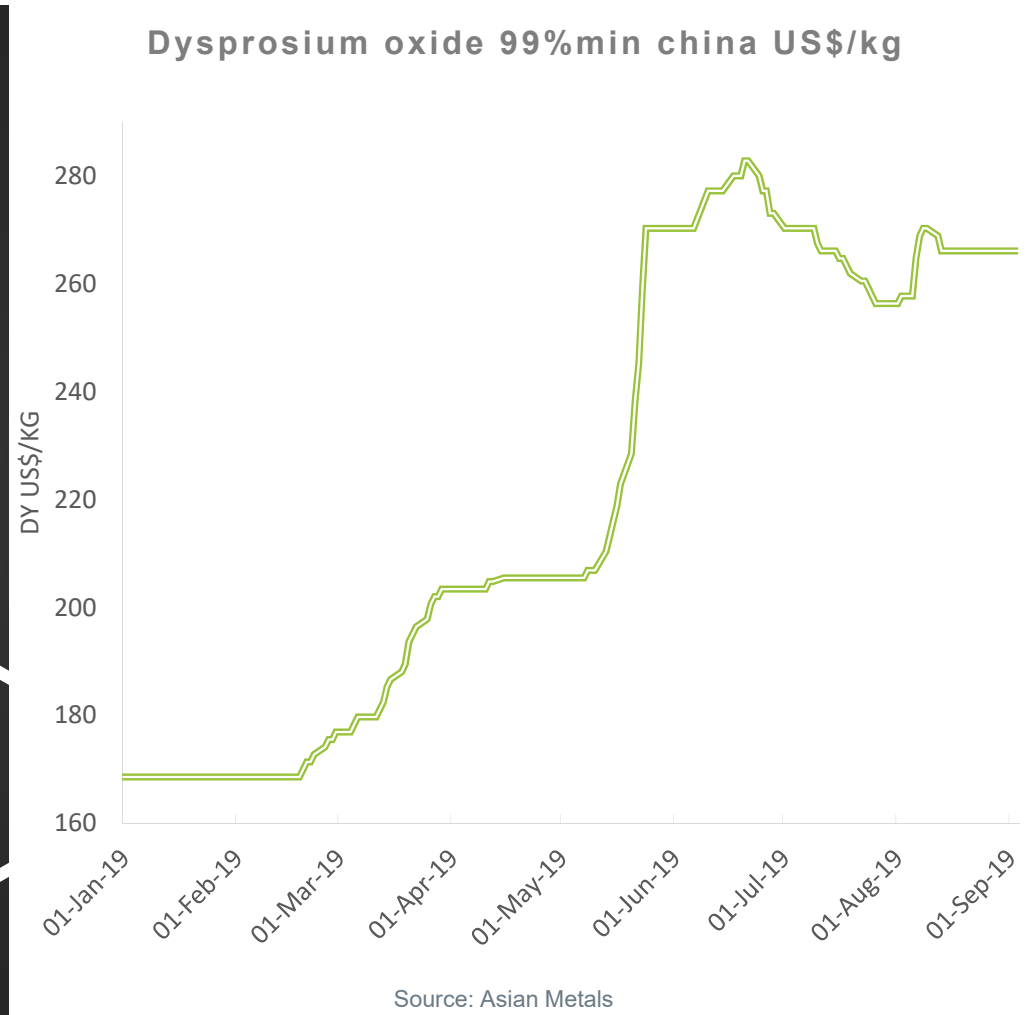
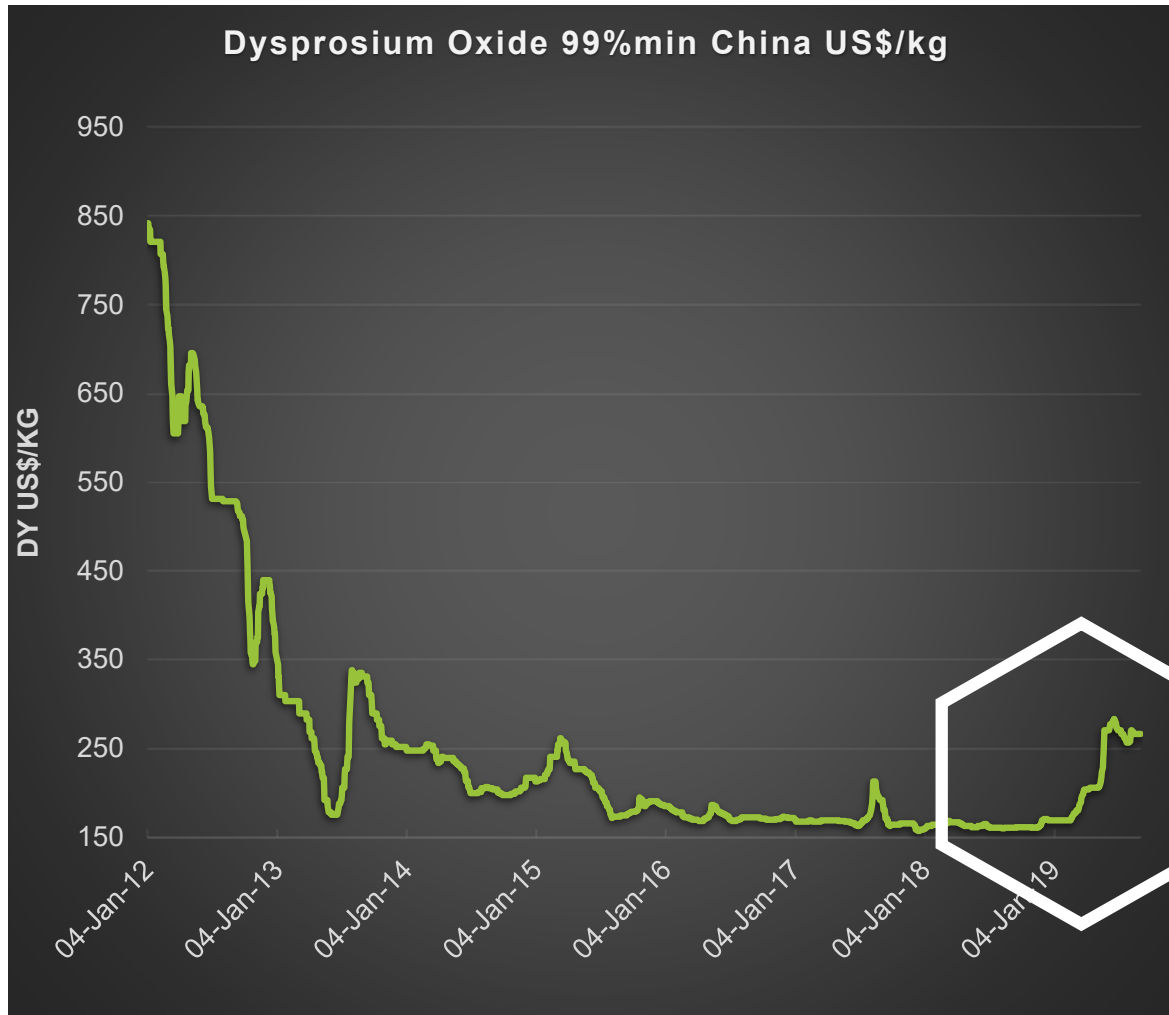
Northern Minerals Browns Range

- ◆ 98% of world's heavy rare earths produced by China;
- ◆ Many operations are in situ leach operations, which are dirty and environmentally dangerous;
- ◆ Leaching affects the groundwater and water table, making it unsafe for residents;
- ◆ Chinese Government has clamped down on illegal operators, either by shutting down or 'legalising' through assimilation into current operators;
- ◆ These types of operations are being phased out, however there are no economic alternatives for this type of deposit;
- ◆ In May 2019 we expect China will ban imports from Myanmar which will tighten availability of HREO feedstocks and strengthen prices of certain rare earths; namely dysprosium, terbium and gadolinium.

China dominates global supply including unsustainable supply, **not green not clean.**



Dysprosium price is up 58% since the start of 2019



Source: Asian Metals

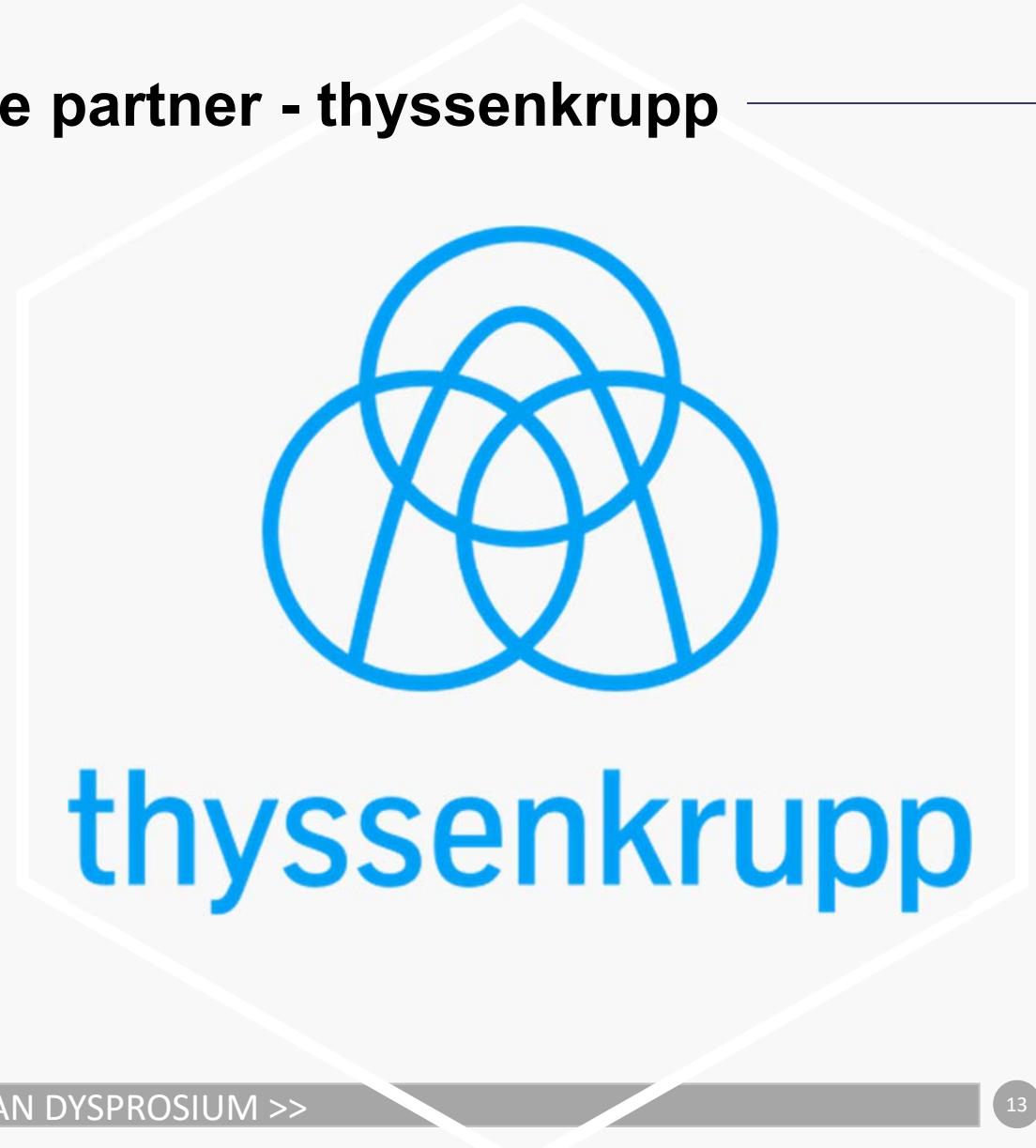


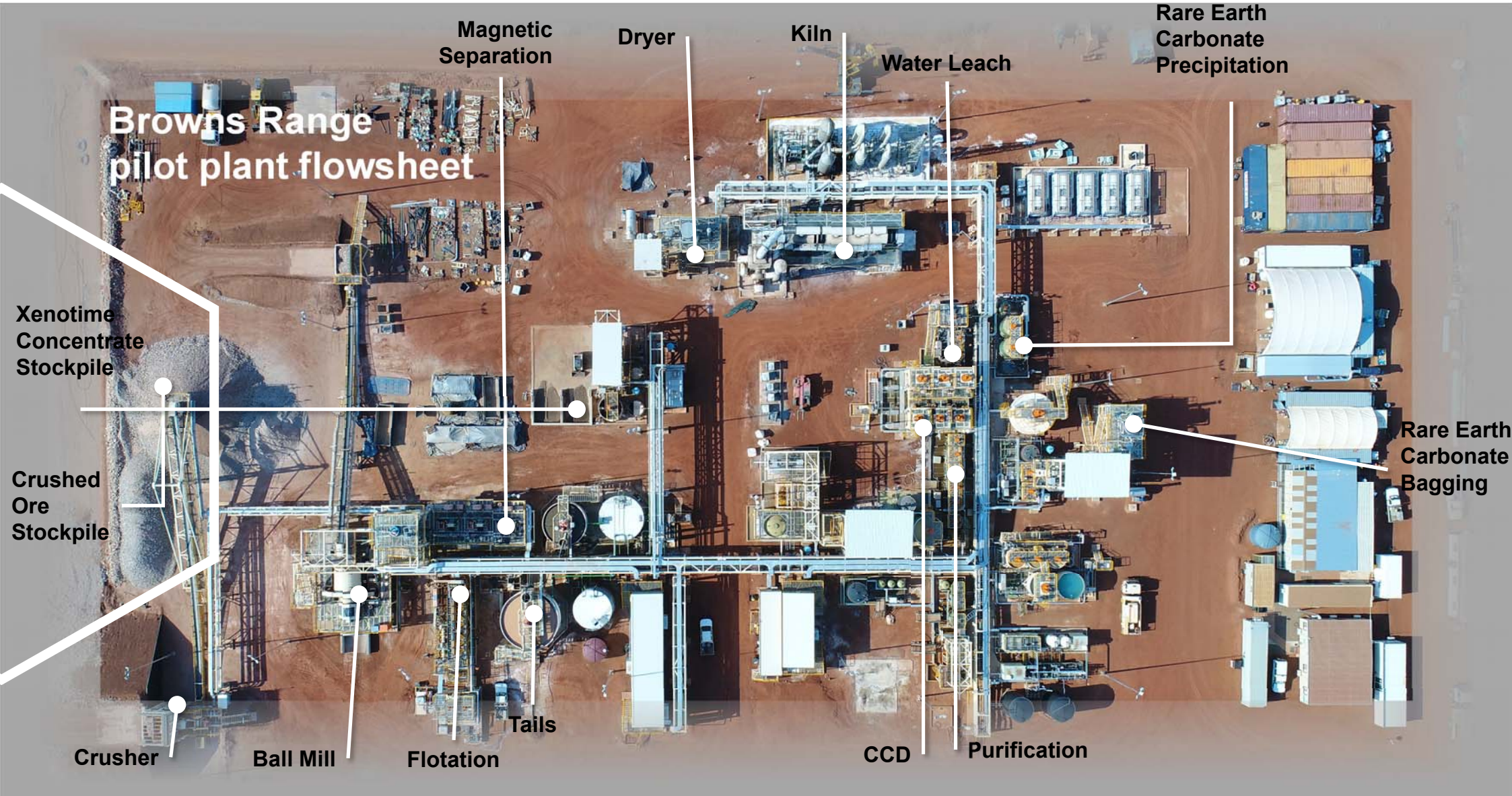
Quality offtake partner - thyssenkrupp

Northern Minerals has entered into an offtake agreement with thyssenkrupp Materials Trading GmbH (thyssenkrupp) for all mixed heavy rare earth carbonate from the Browns Range Pilot Plant Project, including all stockpiled product.

The agreement also includes an option for thyssenkrupp to participate in the potential full-scale project.

The previous offtake agreement with JFMAG has been terminated.





Debottleneck project

Bottlenecks in the Pilot Plant process that are preventing nameplate capacity being achieved were identified during commissioning through to early 2019. Work was initially delayed due to financial constraints and a A\$2.1M budget was approved in April 2019 with targeted completion end of October 2019.

Debottlenecking items include:

- ◆ Additional thickener for flotation concentrate;
- ◆ Improve tailings pumps and pipeline;
- ◆ Oil coolers for WHGMS;
- ◆ Modify the kiln feed and sealing systems;
- ◆ Improve waste gas pumps and off-gas pipe;
- ◆ Aluminium Removal polishing filter;
- ◆ Modify CCD and purification tank overflows;
- ◆ Modify reagent system;
- ◆ Flow and density measurement in hydromet plant;
- ◆ Implement PI historian for process data;
- ◆ Modify Ion exchange to series operation;
- ◆ Install cooling water system for safety showers.



Ore sorting – a game changer

- Steinert ore sorter machine purchased;
- Front end engineering & design nearing completion;
- Process design frozen with detailed engineering design to commence;
- Equipment and installation package RFQs being prepared and tendered;
- Subject to approvals, aim to have ore sorter installed and commissioned end Q2 2020.

2.2x

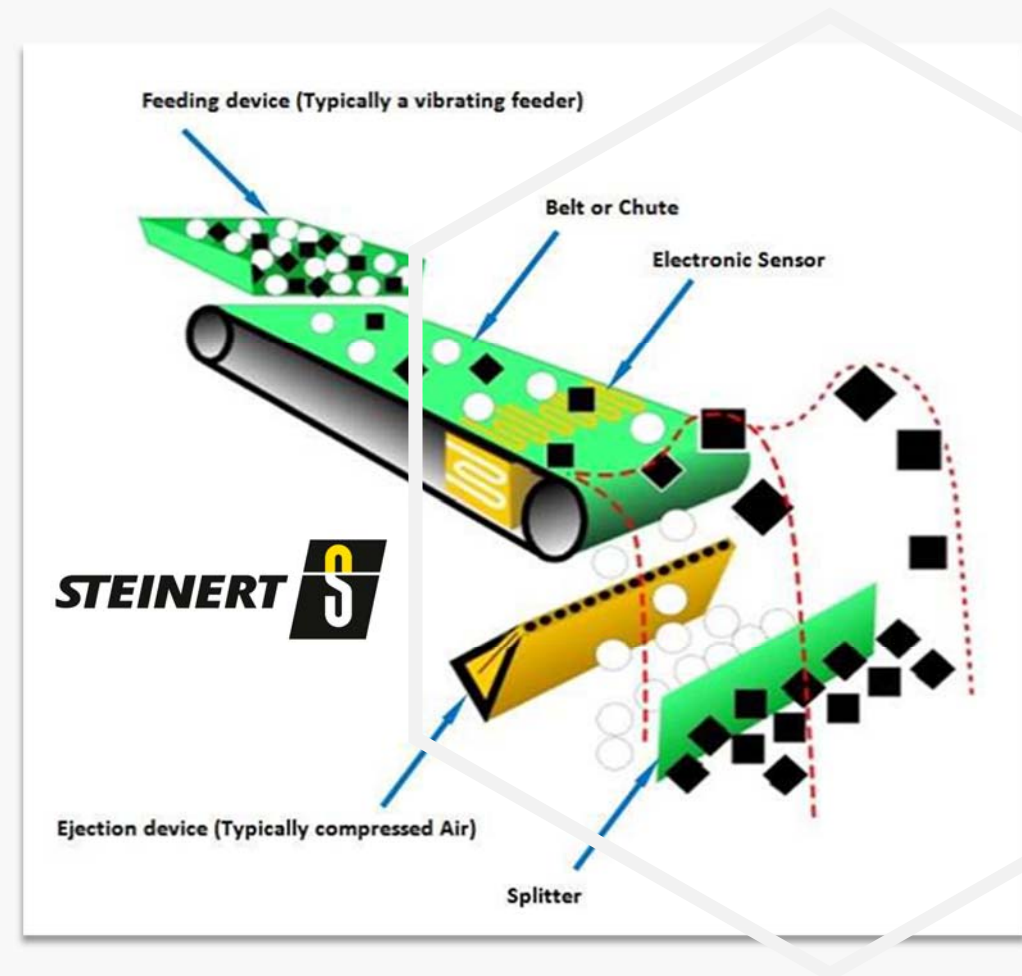
Head grade improvement

Trials indicate that the head grade into the processing plant can be significantly upgraded

90/
40

Mass reduction

Approximately 90% of the value can be recovered in 40% of the mass



Higher feed grade = more output at lower cost
Full development size likely to be materially smaller and significantly cheaper

Rare earth separation scoping study underway



- ◆ Scoping study commenced to investigate downstream processing of mixed rare earths into separated rare earth oxides;
- ◆ U.S.A based K-Technologies Inc selected to undertake bench scale testwork and Scoping Study;
- ◆ Samples dispatched to the U.S.A for testwork to commence in September 2019;
- ◆ If successful, the addition of separation technologies will allow the Company to value-add and increase the range of potential customers.



Staged development plan



Test Pilot Plant

Mine xenotime ore
Produce mixed RE carbonate
Export to offtake customers



Refine Project

Validate & refine flowsheet
Implement ore sorting
Improve xenotime conc. grade
Investigate plant efficiencies



Develop Full Project

Economies of scale
New customer base
Global disruption to supply



Downstream Potential

Product separation
Satellite deposits
New RE revenue streams



Accelerate Exploration

Goals include:
Increased mine life
Improve head grade
Targeting 20+ year mine life



=> Decision point on whether to proceed to next stage





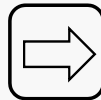
Exploration underway in 2019

The Browns Range dome is a massive geological feature covering 1,500km² and stretching 60km x 30km most of which hasn't been effectively explored



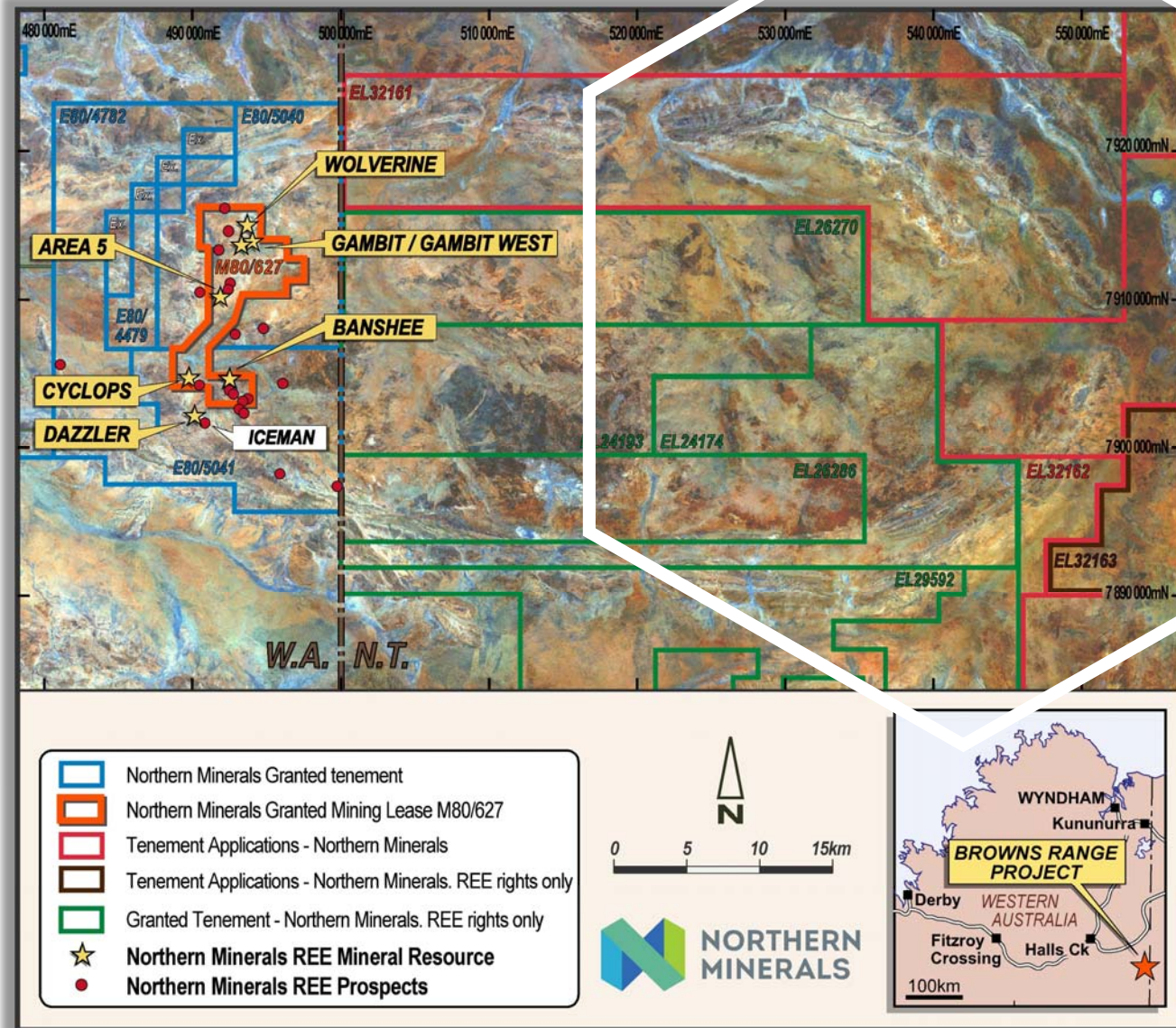
New discoveries

High-grade discoveries made in 2018 at Dazzler and Iceman show excellent potential



20+ year life target

Focus on growing mine life from 11 years to +20 has been estimated and reported in accordance with reporting criteria of the 2012 JORC code as per ASX announcement on 23 March 2016





2019 & 2020 Exploration Program

Exploration focus on high-grade, near surface deposits (Unconformity-related)

2019

A\$3.5m program for remainder of 2019 including:

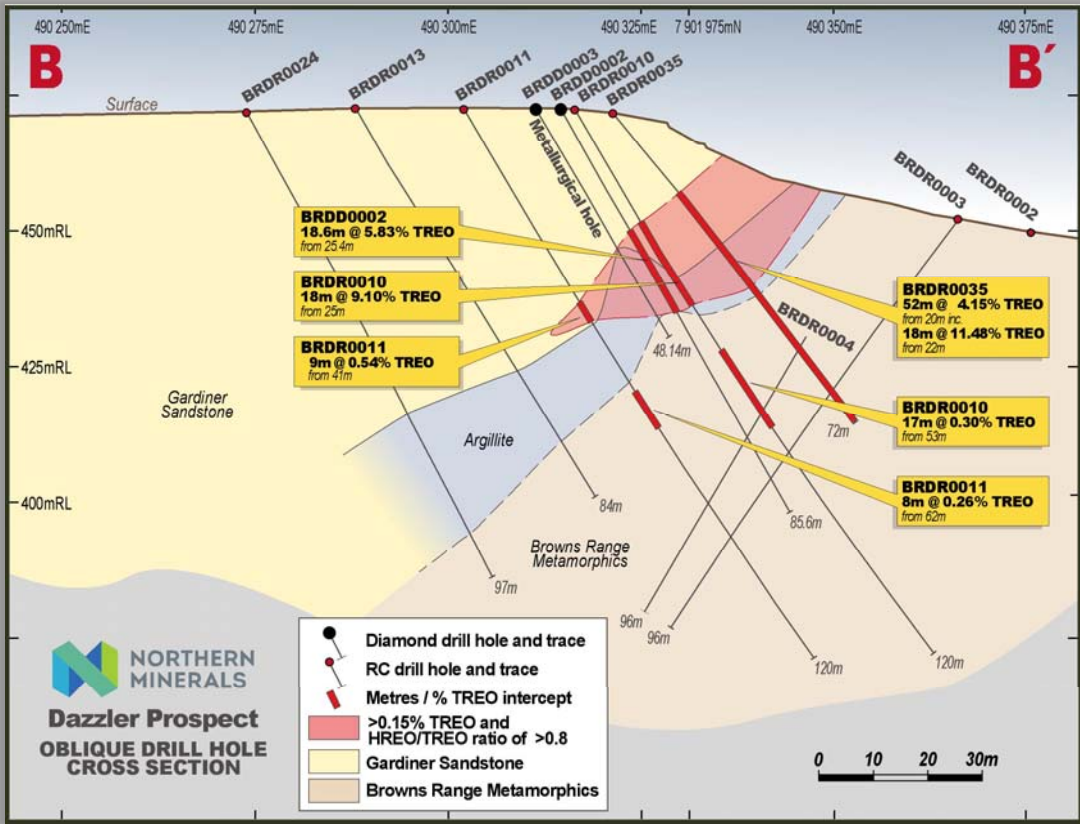
- Up to 10,000m of RC and RAB/Aircore drilling
 - Commenced 8th September
- Diamond drilling
- Ground geophysics
- Resource estimation
- Recruitment of additional geoscientists and field personnel

2020 onwards

A\$6m program for 2020/21 including:

- Up to 20,000m of RC and RAB/Aircore drilling
- 4,000m of diamond drilling
- Airborne and ground geophysics
- Target definition including extending into unexplored NT
- Resource definition and estimation

Dazzler Mineral Resource



| Category | Mt | TREO | Dy ₂ O ₃ | Y ₂ O ₃ | Tb ₄ O ₇ | HREO | TREO |
|--------------|-------------|-------------|--------------------------------|-------------------------------|--------------------------------|-----------|------------------|
| | | % | kg/t | kg/t | kg/t | % | kg |
| Indicated | - | - | - | - | - | - | - |
| Inferred | 0.14 | 2.23 | 2.08 | 12.79 | 0.27 | 93 | 3,200,000 |
| Total | 0.14 | 2.23 | 2.08 | 12.79 | 0.27 | 93 | 3,200,000 |

| REO | % of Total REO |
|------------------------------------|----------------|
| La ₂ O ₃ | 1.20 |
| CeO ₂ | 3.44 |
| Pr ₆ O ₁₁ | 0.48 |
| Nd ₂ O ₃ | 2.21 |
| Sm ₂ O ₃ | 1.40 |
| Eu ₂ O ₃ | 0.46 |
| Gd ₂ O ₃ | 4.88 |
| Tb ₄ O ₇ | 1.21 |
| Dy₂O₃ | 9.32 |
| Ho ₂ O ₃ | 2.13 |
| Er ₂ O ₃ | 6.89 |
| Tm ₂ O ₃ | 1.09 |
| Yb ₂ O ₃ | 7.05 |
| Y ₂ O ₃ | 57.30 |
| Lu ₂ O ₃ | 0.95 |



Strengthening our balance sheet



In the year 2019 to date we have:

- ◆ announced A\$100m in equity raised and banked A\$72m to date;
- ◆ repaid A\$27 million to close out Brevet R&D loan;
- ◆ repaid the Lind facility;
- ◆ Included in the A\$100m above, is A\$20m subscription announced – subject to FIRB / Shareholder Approval.

The key focus for the remainder of the year is:

- ◆ R&D appeal process is underway with AusIndustry as we repay ATO total of \$14.5m (24 month payment plan);
- ◆ continue to repay debt:
 - ◆ make 1st quarterly payment to Sinosteel of A\$2.1m (Oct 19);
 - ◆ repay JHY convertible note of A\$4m (Dec 19) with cash or shares at the election of JHY.

NTU Board



Colin
McCavana

Bin
Cai

George
Bauk

Adrian
Griffin

Xiaohua
Liu

Ming
Lu

Mark
Xue

CM

Colin McCavana - Non-executive Chairman (appointed 2006)

Mr McCavana has more than 35 years of management experience worldwide in the earthworks, construction and mining industries.

ML

Ming Lu - Non-executive Director (appointed 2018)

Mr Lu is a CPA qualified senior finance leader with over a decade of commercial experience in successful multinational businesses worldwide.

GB

George Bauk - Managing Director / CEO (appointed 2010)

George is an experienced executive, with 30 years' experience in the resources industry. Mr Bauk is Chairman of Lithium Australia and Non-executive Director of BlackEarth Minerals.

CX

Congyan (Mark) Xue - Non-executive Director (appointed 2019)

Mr Xue is a corporate finance executive, with over 15 years' experience in fundraising, corporate advisory and mergers and acquisitions, predominantly in China

AG

Adrian Griffin - Non-executive Director (appointed 2006)

An Australian trained mining professional with exposure to metal mining and processing throughout the world, Mr Griffin has been involved in the development of extraction technology for platinum group metals and agricultural commodities.

XL

Xiaohua Liu - Non-executive Director (appointed 2019)

Ms Liu has a Masters of Law and a Bachelor of Law and has over seven years' experience with Investment Banking and Securities companies in China

YW

Yanchung Wang - Non-executive Director (appointed 2013) (not in photo)

Ms Wang acts as a strategic investor for a number of Chinese based companies. Ms Wang is Vice Chairman of Conglin Baoyuan International Investment Group and also a Director of Huachen.

BC

Bin Cai - Non-executive Director (alternate) (appointed 2013)

Bin is the MD of Conglin International Investment Group Pty Ltd based in Brisbane. He has a record of successful strategic investments in emerging Australian resources companies.

Corporate overview



Major shareholders

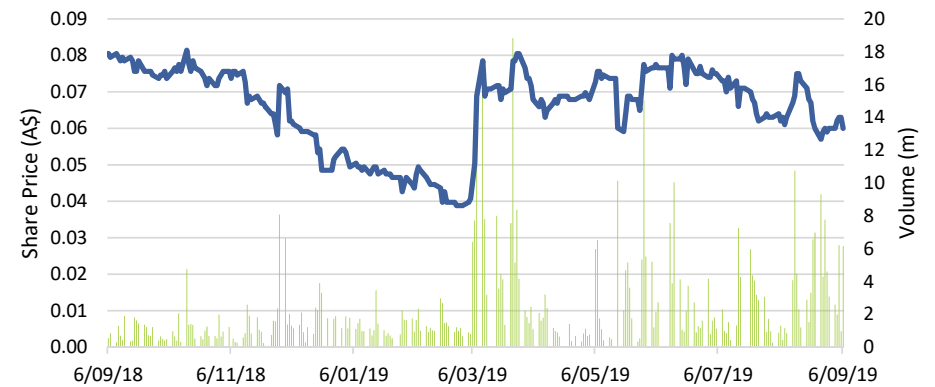
31 August 2019

| | |
|-------------------|-------|
| Citicorp Nominees | 12.3% |
| ACIIG | 8.5% |
| Huatai Mining | 7.3% |
| Congyan Xue | 5.6% |
| Remaining Top 20 | 28.1% |
| Other | 38.2% |

| | |
|--|-------------------|
| Ordinary Shares as at 5 September 2019 | 2,544M |
| Options, Performance Rights & Convertible Notes as at 5 September 2019 | 119M |
| Market Capitalisation as at 5 September 2019 | \$160M |
| Cash (30 June 2019) | \$8.1M |
| Debt (as at 31 August 2019): | |
| ATO (under appeal with AusIndustry) | \$12.4M |
| Sinosteel | \$10.4M |
| Convertible Notes (unsecured) | \$11.5M |
| Plant book value | \$70M |
| 12 month low - high | \$0.039 - \$0.085 |
| Average daily volume (12 month avg) | 2,314M |

All amounts in AUD

Northern Minerals Share Price Chart 12 Months



In conclusion

First rare earth carbonate pilot plant production in October 2018,
following practical completion including first shipment in December 2018

Pilot plant project to demonstrate and assess economic and technical
feasibility of larger operation

thyssenkrupp offtake signed in August 2019

Ore sorting project is underway

Separation scoping study underway with US based K-Tech

Announced A\$100m in equity raised and banked A\$72m to date

Continuing to strengthen the balance sheet of the company



Thank you



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**NORTHERN
MINERALS**

APPENDICES



Corporate leadership

Our people embody the Northern Minerals SPIRIT, a culture of continually striving to deliver exceptional outcomes, leadership and improvements.

MD

George Bauk
Managing Director and CEO

Since 2010, George has lead the team from initial discovery to pilot plant production

GEM

Robin Wilson
Geology and Exploration Manager

Original Browns Range discoverer, on the hunt for new resources

CFO

Mark Tory
CFO and Company Secretary

Specialist in innovative finance and capital management

HR

Hayley Patton
Human Resources Manager

Experienced HR Professional with broad industry experience

Operational leadership

Our team of operational specialists have years of experience in the production of rare earths. Having experts in their fields allows us to maximise value for shareholders.



COO

Robin Jones

Chief Operating Officer

Driven Browns Range pilot plant to be the newest dysprosium producer

EM

Eben Van Rooyen

Engineering Manager

Charged with building Browns Range as a new greenfields site

GM

Tony Hadley

General Manager Operations

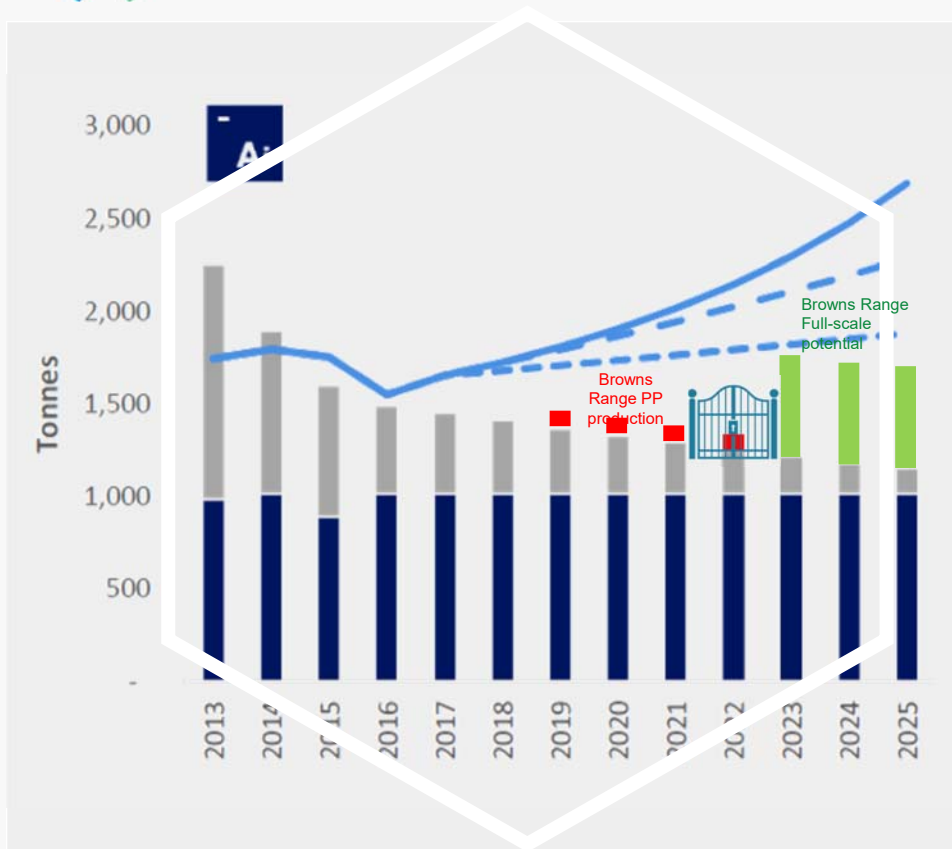
Experienced rare earths operator, focused on delivering results

R&D

Louis de Klerk

Research and Development Manager

Focus on R&D, continuous improvement & assessment against benchmarks

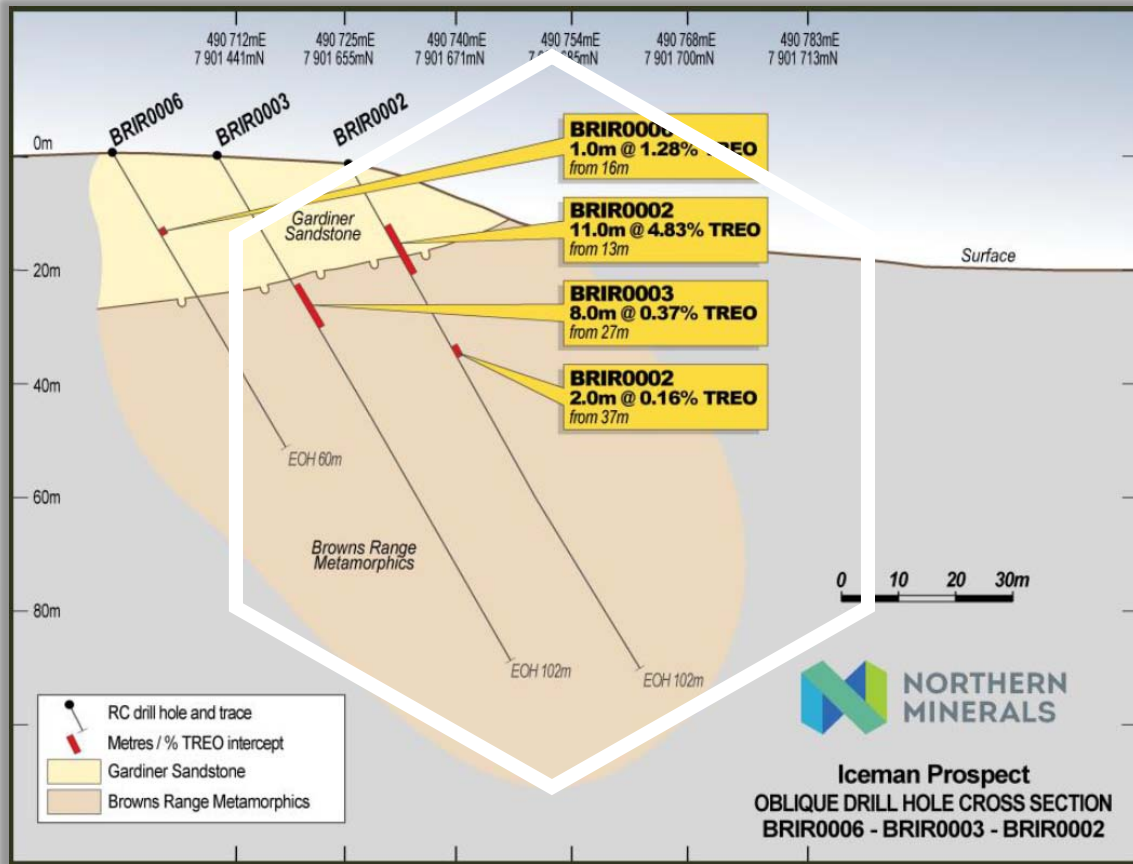


Filling the supply gap

Chinese illegal production is expected to continue falling as the Government cracks down. Even with efficiencies in electric motors, the supply/demand gap is expected to continue widening.



=> Decision point on whether to proceed to next stage



Iceman discovery

| Hole ID | Width (m)* | From (m) | To (m) | % TREO | Estimated pXRF grade |
|----------|------------|----------|--------|------------------------|----------------------|
| BRIR0001 | | | | No significant results | |
| BRIR0002 | 11 | 13 | 24 | 4.83 | 4% |
| BRIR0002 | 2 | 37 | 39 | 0.16 | |
| BRIR0003 | 8 | 27 | 35 | 0.37 | 0.6% |
| BRIR0004 | 7 | 26 | 33 | 1.20 | 3% |
| BRIR0005 | | | | No significant results | |
| BRIR0006 | 1 | 16 | 17 | 1.28 | |
| BRIR0007 | 7 | 42 | 49 | 1.73 | 1% |
| BRIR0008 | | | | No significant results | |
| BRIR0009 | | | | No significant results | |

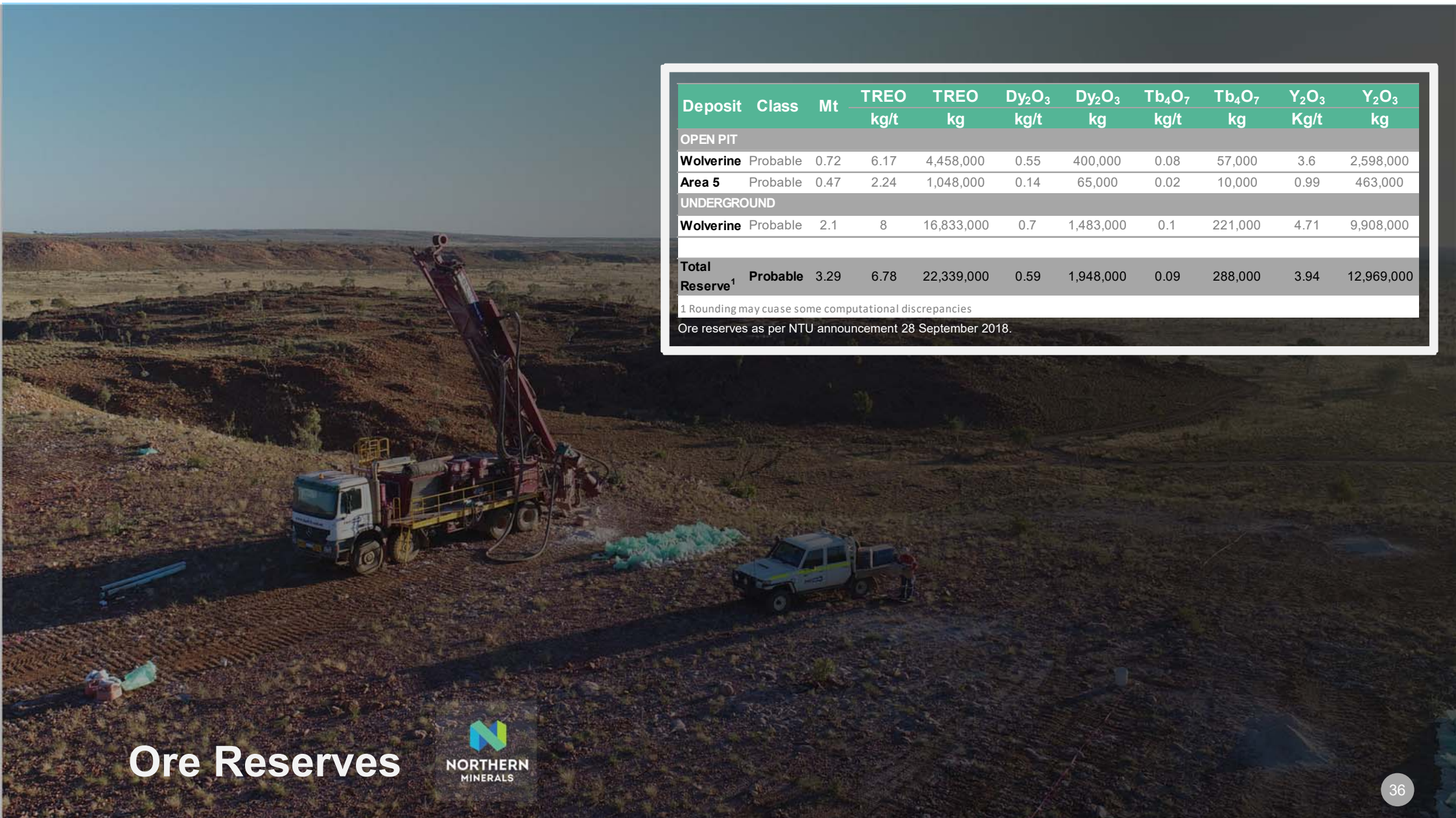


Mineral Resources

| Deposit | Classification | Mt | TREO % | Dy ₂ O ₃ kg/t | Y ₂ O ₃ kg/t | Tb ₄ O ₇ kg/t | HREO % | TREO kg |
|------------------------|----------------------|------|--------|-------------------------------------|------------------------------------|-------------------------------------|--------|------------|
| Wolverine | Indicated | 2.88 | 0.84 | 0.74 | 4.89 | 0.11 | 89 | 24,195,000 |
| | Inferred | 1.97 | 0.89 | 0.76 | 5.15 | 0.11 | 88 | 17,588,000 |
| | Total ¹ | 4.85 | 0.86 | 0.75 | 4.99 | 0.11 | 89 | 41,786,000 |
| Gambit West | Indicated | 0.12 | 1.8 | 1.62 | 10.98 | 0.22 | 94 | 2,107,000 |
| | Inferred | 0.13 | 0.51 | 0.4 | 2.67 | 0.05 | 81 | 674,000 |
| | Total ¹ | 0.25 | 1.11 | 0.97 | 6.56 | 0.13 | 91 | 2,781,000 |
| Pilot Plant Stockpiles | Indicated | 0.21 | 0.97 | 0.85 | 5.63 | 0.12 | 89 | 2,049,000 |
| | Inferred | 0.04 | 0.26 | 0.2 | 1.35 | 0.03 | 79 | 92,000 |
| | Total | 0.25 | 0.87 | 0.75 | 5.01 | 0.11 | 89 | 2,141,000 |
| Gambit | Indicated | | | | | | | |
| | Inferred | 0.21 | 0.89 | 0.83 | 5.62 | 0.11 | 96 | 1,878,000 |
| | Total ¹ | 0.21 | 0.89 | 0.83 | 5.62 | 0.11 | 96 | 1,878,000 |
| Area 5 | Indicated | 1.38 | 0.29 | 0.18 | 1.27 | 0.03 | 69 | 3,953,000 |
| | Inferred | 0.14 | 0.27 | 0.17 | 1.17 | 0.03 | 70 | 394,000 |
| | Total ¹ | 1.52 | 0.29 | 0.18 | 1.26 | 0.03 | 69 | 4,347,000 |
| Cyclops | Indicated | | | | | | | |
| | Inferred | 0.33 | 0.27 | 0.18 | 1.24 | 0.03 | 70 | 891,000 |
| | Total ¹ | 0.33 | 0.27 | 0.18 | 1.24 | 0.03 | 70 | 891,000 |
| Banshee | Indicated | | | | | | | |
| | Inferred | 1.66 | 0.21 | 0.16 | 1.17 | 0.02 | 87 | 3,484,000 |
| | Total ¹ | 1.66 | 0.21 | 0.16 | 1.17 | 0.02 | 87 | 3,484,000 |
| Dazzler | Indicated | | | | | | | |
| | Inferred | 0.14 | 2.23 | 2.08 | 12.79 | 0.27 | 93 | 3,200,000 |
| | Total ² | 0.14 | 2.23 | 2.08 | 12.79 | 0.27 | 93 | 3,200,000 |
| Total ¹ | Indicated | 4.59 | 0.71 | 0.60 | 3.99 | 0.09 | 86 | 32,304,000 |
| | Inferred | 4.62 | 0.61 | 0.51 | 3.47 | 0.07 | 87 | 28,201,000 |
| | Total ^{1,2} | 9.21 | 0.66 | 0.56 | 3.73 | 0.08 | 87 | 60,508,000 |

¹ – Rounding may cause some computational discrepancies (TREO (metal) tonnes estimated from Mt x TREO%)
 Mineral Resources as per NTU announcement 28 September 2018.

² - Mineral Resources as per NTU announcement 6 March 2019.



| Deposit | Class | Mt | TREO kg/t | TREO kg | Dy ₂ O ₃ kg/t | Dy ₂ O ₃ kg | Tb ₄ O ₇ kg/t | Tb ₄ O ₇ kg | Y ₂ O ₃ Kg/t | Y ₂ O ₃ kg |
|----------------------------------|-----------------|-------------|--------------|-------------------|--|--------------------------------------|--|--------------------------------------|---------------------------------------|-------------------------------------|
| OPEN PIT | | | | | | | | | | |
| Wolverine | Probable | 0.72 | 6.17 | 4,458,000 | 0.55 | 400,000 | 0.08 | 57,000 | 3.6 | 2,598,000 |
| Area 5 | Probable | 0.47 | 2.24 | 1,048,000 | 0.14 | 65,000 | 0.02 | 10,000 | 0.99 | 463,000 |
| UNDERGROUND | | | | | | | | | | |
| Wolverine | Probable | 2.1 | 8 | 16,833,000 | 0.7 | 1,483,000 | 0.1 | 221,000 | 4.71 | 9,908,000 |
| Total Reserve¹ | Probable | 3.29 | 6.78 | 22,339,000 | 0.59 | 1,948,000 | 0.09 | 288,000 | 3.94 | 12,969,000 |

¹ Rounding may cause some computational discrepancies
 Ore reserves as per NTU announcement 28 September 2018.

Ore Reserves



- Product specification available for REC
- REC samples validated by several downstream separators
- REC suitable for solvent extraction separation
- Low thorium and uranium levels
- First shipment – December 2018



Pilot Plant

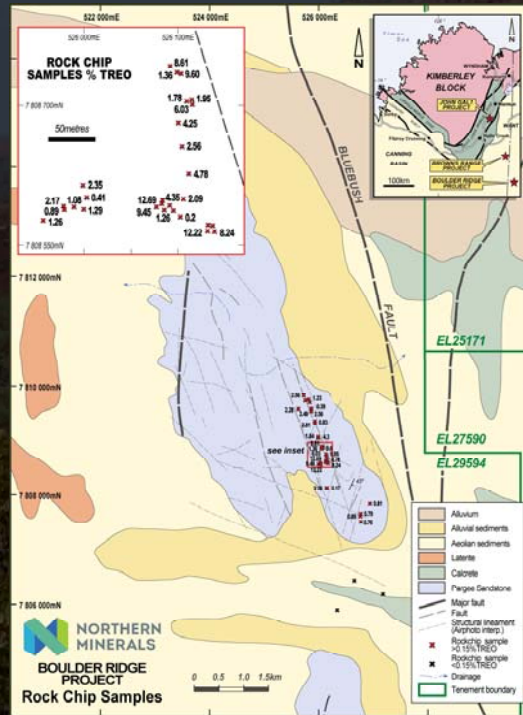
| REO contained in mixed RE carbonate | Targeted Annual production (000s kg) |
|-------------------------------------|--------------------------------------|
| Lanthanum | 5.8 |
| Cerium | 15.2 |
| Praseodymium | 2.8 |
| Neodymium | 10.6 |
| Samarium | 11.4 |
| Europium | 2.4 |
| Gadolinium | 34.8 |
| Terbium | 6.7 |
| Dysprosium | 49.4 |
| Holmium | 13.5 |
| Erbium | 39.3 |
| Thulium | 5.6 |
| Ytterbium | 33.1 |
| Lutetium | 4.5 |
| Yttrium | 337.6 |
| Total TREO produced | 573 |
| Total carbonate produced | 1,100 |

Figures may not add due to rounding
 TREO = Total Rare Earth Oxides: Total of Dy₂O₃, La₂O₃, CeO₂, Pr₆O₁₁, Nd₂O₃, Sm₂O₃, Eu₂O₃, Gd₂O₃, Tb₄O₇, Ho₂O₃, Er₂O₃, Tm₂O₃, Yb₂O₃, Lu₂O₃, Y₂O₃

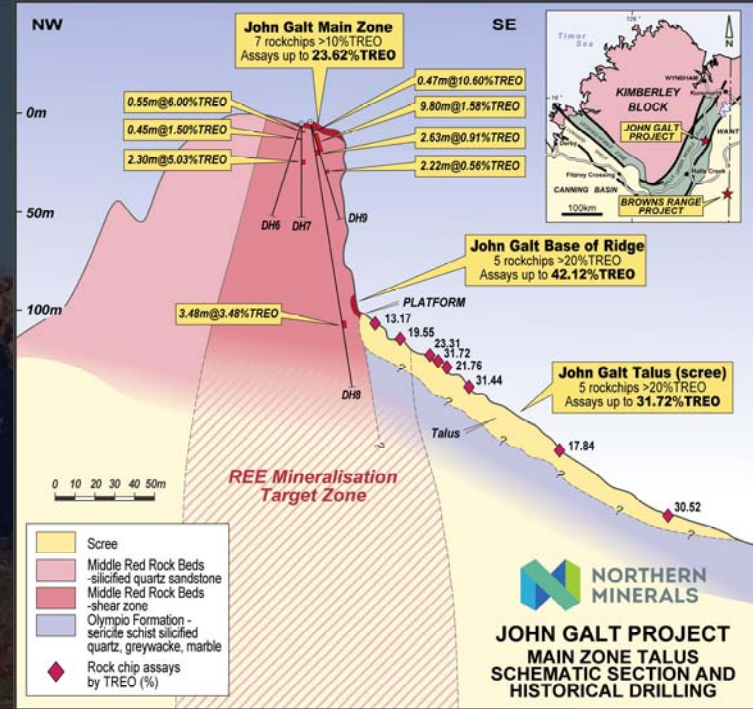
Production table from ASX announcement dated 4 February 2016 in relation to new business plan for Browns Range and presentation of the business plan and ASX announcement dated 2 March 2015 in relation to DFS

Beyond Browns Range

- Rock chip samples from the Boulder Ridge project confirm high-grade Heavy Rare Earths (HRE)
- Best results exceed 12% TREO, including up to 1.15% Dysprosium, with a dominance of HRE – up to 99%
- Reinforces significant growth potential in Browns Range and Tanami regions



BOULDER RIDGE



- Rock chip samples up to 42% TREO with approximately 95% Heavy REO
- Preliminary metallurgical tests indicate excellent recovery rates (>90%)
- Potential for concentrate grades >40%
- High grade mineralisation in talus (scree) material
- Hard-rock source of scree is the primary target

JOHN GALT



**NORTHERN
MINERALS**

