

## Assay results confirm Dazzler & Iceman discoveries

- Assay results from RC drilling of Dazzler and Iceman prospects have returned high grade results
- Results include
  - 18m at 9.10% TREO (8,627ppm Dy<sub>2</sub>O<sub>3</sub>),
  - 21m at 2.15% TREO and
  - 11m at 4.83% TREO
- Grades are significant, given existing Mineral Resource average grade of 0.63% TREO
- Assay grades show excellent correlation against previously announced preliminary pXRF results
- Follow up drilling planned for later in the year

Australian heavy rare earths producer Northern Minerals Limited (ASX: NTU) (the Company) is pleased to announce that assays from Reverse Circulation (RC) drilling at the Iceman and Dazzler prospects have confirmed both as exciting new high-grade Heavy Rare Earth discoveries.

The assay results follow an earlier announcement (see ASX announcement “Preliminary drilling results at Dazzler and Iceman highlight extensive new exploration target” dated 2<sup>nd</sup> August 2018) whereby the Company reported preliminary results using portable XRF (pXRF) measurements of yttrium.

These two prospects are located less than 15km from the Browns Range processing plant (see Figure 1 below).

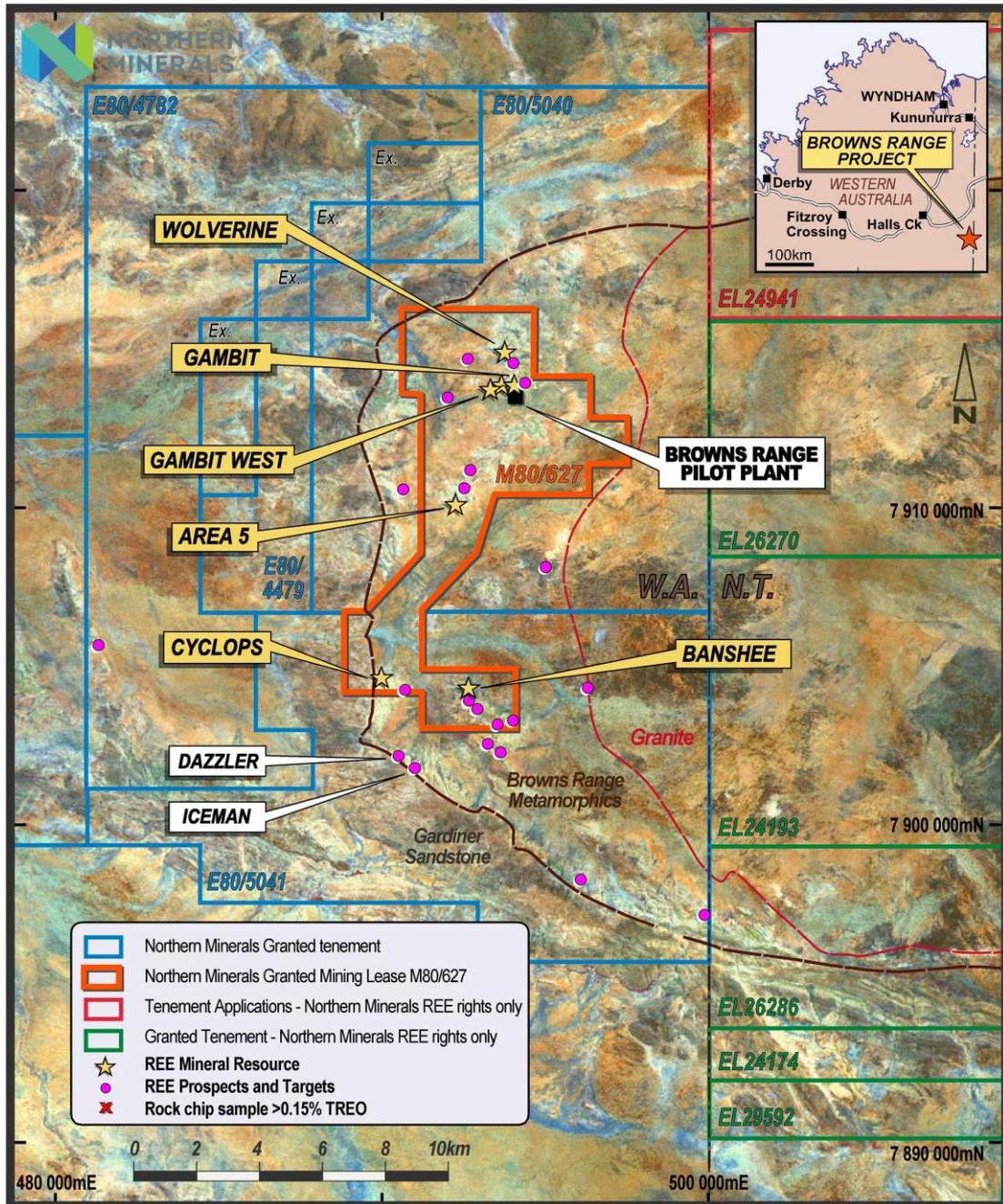
Table 1 – Iceman and Dazzler prospects RC drilling – High-grade assay results

Hole ID	Prospect	Width (m)*	From (m)	To (m)	Dy <sub>2</sub> O <sub>3</sub> (ppm)	Assay grade (% TREO)	Estimated intercept using pXRF
BRIR0002	Iceman	11	13	24	4,545	4.83	12m at 4% TREO
BRIR0004	Iceman	7	26	33	1,086	1.20	7m at 3% TREO
BRIR0007	Iceman	7	42	49	1,694	1.73	4m at 1% TREO
BRDR0010	Dazzler	18	25	43	8,627	9.10	19m at 8% TREO
BRDR0014	Dazzler	21	24	45	1,985	2.15	21m at 2% TREO

(TREO – Total Rare Earth Oxides - Total of La<sub>2</sub>O<sub>3</sub>, CeO<sub>2</sub>, Pr<sub>6</sub>O<sub>11</sub>, Nd<sub>2</sub>O<sub>3</sub>, Sm<sub>2</sub>O<sub>3</sub>, Eu<sub>2</sub>O<sub>3</sub>, Gd<sub>2</sub>O<sub>3</sub>, Tb<sub>4</sub>O<sub>7</sub>, Dy<sub>2</sub>O<sub>3</sub>, Ho<sub>2</sub>O<sub>3</sub>, Er<sub>2</sub>O<sub>3</sub>, Tm<sub>2</sub>O<sub>3</sub>, Yb<sub>2</sub>O<sub>3</sub>, Lu<sub>2</sub>O<sub>3</sub>, Y<sub>2</sub>O<sub>3</sub>.)

\*Downhole widths only, true width is currently unknown

Figure 1 – Browns Range Project – Prospect and Deposit location



## Dazzler

Dazzler is located south of the Browns Range Pilot Plant on the edge of a small scarp adjacent to a strong geochemical soil anomaly. The prospect was previously drilled in 2013, with seven RC drill holes completed. These holes were located at the base of the scarp slope and drilled directly into the Browns Range Metamorphics (BRM) unit.



Drilling at Dazzler and Iceman

The current program is the first to assess the unconformity between the Gardiner Sandstone and the underlying Browns Range Metamorphics. Thirteen holes for 1,242 metres have been drilled in the current program.

Table 2 shows the significant assay results from this program as well as a comparison to the previously announced preliminary pXRF results. Figure 2 shows the drill hole locations and Figure 3 is a cross-section of one of the drill lines. Follow up drilling is planned for the fourth quarter 2018, including diamond drilling. Appendix 1 below lists the full drill hole location details.

Table 2 – Dazzler Prospect RC drilling – Significant assay results (a minimum of 2m @ 0.15% TREO or equivalent, and a maximum of 2m continuous internal dilution. No top cut has been applied.)

Hole ID	Width (m)*	From (m)	To (m)	Dy <sub>2</sub> O <sub>3</sub> (ppm)	TREO %	Estimated pXRF grade
BRDR0008	3	33	36	284.1	0.34	0.5%
BRDR0008	3	41	44	115.4	0.20	

BRDR0009	3	107	110	88.5	0.22	
BRDR0009	4	112	116	161.8	0.33	
BRDR0010	18	25	43	8627.2	9.10	<b>8%</b>
BRDR0010	17	53	70	95.1	0.30	
BRDR0011	16	34	50	271.0	0.35	<b>0.8%</b>
Incl	9	41	50	410.5	0.54	
BRDR0011	8	62	70	103.7	0.26	
BRDR0012	2	26	28	262.7	0.29	
BRDR0012	13	33	46	230.6	0.33	<b>0.4%</b>
BRDR0012	2	64	66	55.5	0.27	
BRDR0013						No significant results
BRDR0014	21	24	45	1985.4	2.15	<b>2%</b>
BRDR0014	7	48	55	156.4	0.29	
BRDR0014	7	59	66	211.2	0.42	<b>0.6%</b>
BRDR0015	2	35	37	168.9	0.20	
BRDR0015	13	42	55	298.4	0.38	<b>0.6%</b>
BRDR0016	4	26	30	124.3	0.14	
BRDR0016	32	33	65	319.3	0.48	
Incl	10	34	44	697	0.94	<b>0.7%</b>
BRDR0017	4	46	50	162.0	0.23	
BRDR0017	3	53	56	79.5	0.16	
BRDR0017	13	66	79	108.0	0.27	<b>0.3%</b>
BRDR0018	2	31	33	204.0	0.23	
BRDR0018	10	37	47	218.5	0.33	<b>0.3%</b>
BRDR0019	2	51	53	102.7	0.19	
BRDR0019	4	64	68	67.5	0.31	
BRDR0020						No significant results

(TREO – Total Rare Earth Oxides - - Total of La<sub>2</sub>O<sub>3</sub>, CeO<sub>2</sub>, Pr<sub>6</sub>O<sub>11</sub>, Nd<sub>2</sub>O<sub>3</sub>, Sm<sub>2</sub>O<sub>3</sub>, Eu<sub>2</sub>O<sub>3</sub>, Gd<sub>2</sub>O<sub>3</sub>, Tb<sub>4</sub>O<sub>7</sub>, Dy<sub>2</sub>O<sub>3</sub>, Ho<sub>2</sub>O<sub>3</sub>, Er<sub>2</sub>O<sub>3</sub>, Tm<sub>2</sub>O<sub>3</sub>, Yb<sub>2</sub>O<sub>3</sub>, Lu<sub>2</sub>O<sub>3</sub>, Y<sub>2</sub>O<sub>3</sub>.)

\*Downhole widths only, true width is currently unknown

Figure 2 – Dazzler prospect – Drill hole location plan

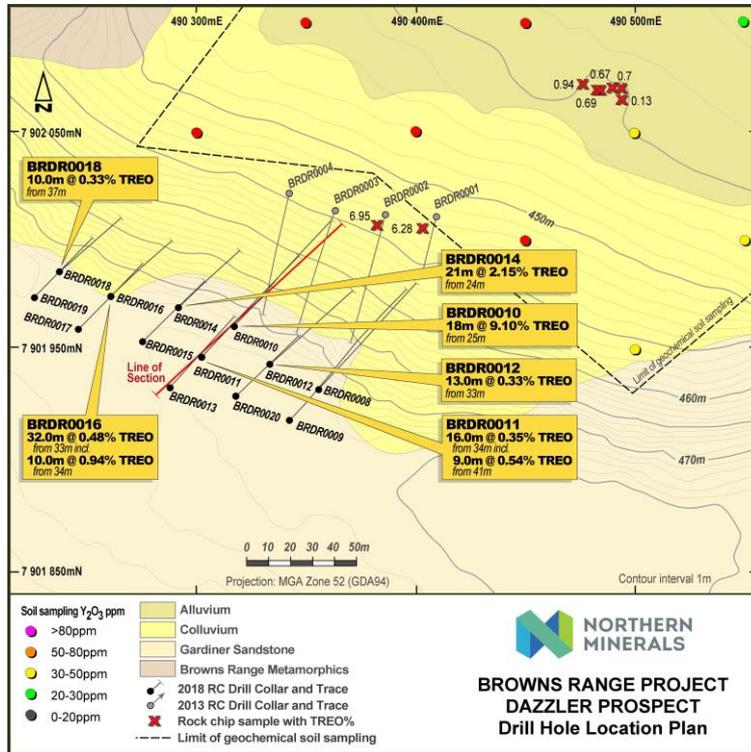
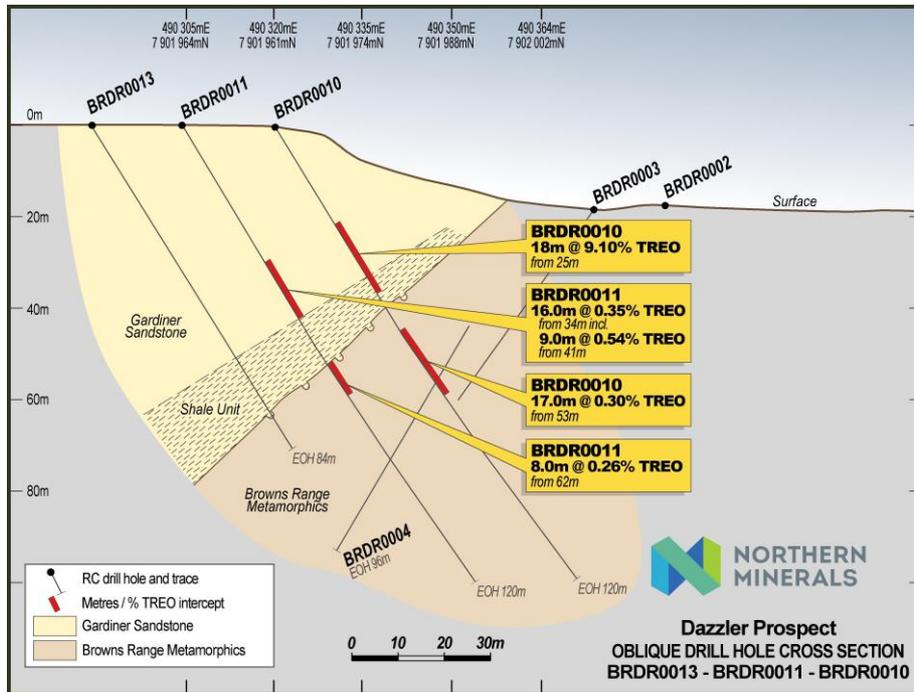


Figure 3 – Dazzler prospect – Drill hole cross section BRDR0010, 0011 and 0013)



## Iceman

The Iceman prospect is located approximately 400m along strike to the southeast of Dazzler. This is the first drilling at the Iceman prospect and was targeted on the edge of a small scarp adjacent to a strong geochemical soil anomaly. Drilling from above the scarp firstly intersected the overlying Gardiner Sandstone unit before entering the lower Browns Range Metamorphics.

Nine holes were drilled for 754 metres at Iceman. Figure 4 shows the drill hole locations and Figure 5 is a cross-section of one of the drill lines. Appendix 1 below lists the full drill hole location details.

Table 3 shows the significant assay results from this program as well as the comparison to the estimated grades using pXRF. Follow-up drilling is planned to commence later in the December quarter, with diamond drilling likely to be included to assist with the interpretation of the structural controls on mineralisation.

**Table 3 – Iceman Prospect RC drilling – Significant assay results (a minimum of 2m @ 0.15% TREO or equivalent, and a maximum of 2m continuous internal dilution. No top cut has been applied.)**

Hole ID	Width (m)*	From (m)	To (m)	Dy <sub>2</sub> O <sub>3</sub> (ppm)	% TREO	Estimated pXRF grade
BRIR0001					No significant results	
BRIR0002	11	13	24	4,545.0	4.83	4%
BRIR0002	2	37	39	113.5	0.16	
BRIR0003	8	27	35	304.6	0.37	0.6%
BRIR0004	7	26	33	1,085.8	1.20	3%
BRIR0005					No significant results	
BRIR0006	1	16	17	1,177.1	1.28	
BRIR0007	7	42	49	1,693.8	1.73	1%
BRIR0008					No significant results	
BRIR0009					No significant results	

(TREO – Total Rare Earth Oxides -Total of La<sub>2</sub>O<sub>3</sub>, CeO<sub>2</sub>, Pr<sub>6</sub>O<sub>11</sub>, Nd<sub>2</sub>O<sub>3</sub>, Sm<sub>2</sub>O<sub>3</sub>, Eu<sub>2</sub>O<sub>3</sub>, Gd<sub>2</sub>O<sub>3</sub>, Tb<sub>4</sub>O<sub>7</sub>, Dy<sub>2</sub>O<sub>3</sub>, Ho<sub>2</sub>O<sub>3</sub>, Er<sub>2</sub>O<sub>3</sub>, Tm<sub>2</sub>O<sub>3</sub>, Yb<sub>2</sub>O<sub>3</sub>, Lu<sub>2</sub>O<sub>3</sub>, Y<sub>2</sub>O<sub>3</sub>.)

\*Downhole widths only, true width is currently unknown

Figure 4– Iceman prospect – Drill hole location plan

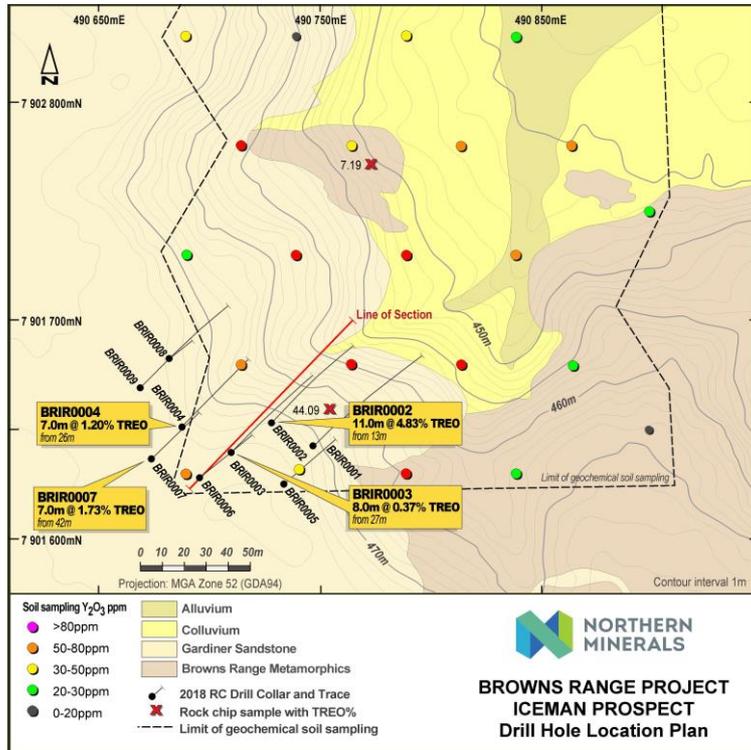
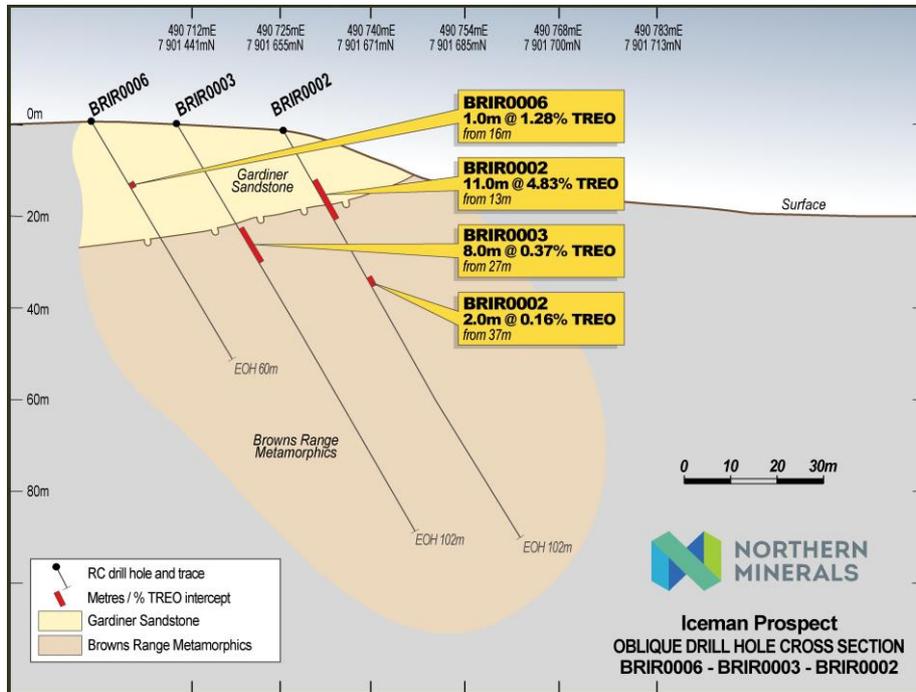


Figure 5 – Iceman prospect – Drill hole cross section showing BRIR0002, 0003 and 0006)



## Portable XRF correlation

Northern Minerals has been using portable XRF (pXRF) successfully at Browns Range since the projects beginning. The current procedure for using field pXRF has been in use since 2014. Using this technique, a reliable indicator of final assay TREO is obtained at the drill rig utilising historical correlations built between pXRF analysis of yttrium and paired assay data for TREO. (TREO = Total Rare Earth Oxides – La<sub>2</sub>O<sub>3</sub>, CeO<sub>2</sub>, Pr<sub>6</sub>O<sub>11</sub>, Nd<sub>2</sub>O<sub>3</sub>, Sm<sub>2</sub>O<sub>3</sub>, Eu<sub>2</sub>O<sub>3</sub>, Gd<sub>2</sub>O<sub>3</sub>, Tb<sub>4</sub>O<sub>7</sub>, Dy<sub>2</sub>O<sub>3</sub>, Ho<sub>2</sub>O<sub>3</sub>, Er<sub>2</sub>O<sub>3</sub>, Tm<sub>2</sub>O<sub>3</sub>, Yb<sub>2</sub>O<sub>3</sub>, Lu<sub>2</sub>O<sub>3</sub>, Y<sub>2</sub>O<sub>3</sub>)

As with previous comparisons between pXRF and assay results for RC drilling samples, these current assay results support the ongoing use of pXRF as a reliable preliminary indicator of mineralisation.

Commenting on the exciting results, Managing Director and CEO, George Bauk, said “*These very high-grade assays confirms our belief of having two new discoveries located close to the Browns Range processing infrastructure.*”

*“We will be mobilising as soon as practicable to follow up on these results as well as other high-priority areas targeting the Gardiner Sandstone unconformity.”*

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## About Northern Minerals:

Northern Minerals Limited (ASX: NTU; Northern Minerals or the Company) has commenced commissioning of the Browns Range Heavy Rare Earth Pilot Plant Project in northern Western Australia.

Through the development of its flagship project, the Browns Range Project (the Project), Northern Minerals aims to be the first significant world producer of dysprosium outside of China.

The Project is 100% owned by Northern Minerals and has several deposits and prospects containing high value dysprosium and other HREs, hosted in xenotime mineralisation.

Dysprosium is an essential ingredient in the production of DyNdFeB (dysprosium neodymium iron-boron) magnets used in clean energy and high technology solutions.

The three-year R&D pilot plant project will commence first production of heavy rare earth carbonate in Q3 2018. The pilot plant development provides the opportunity to gain production experience, surety of supply for our offtake partner and assess the economic and technical feasibility of the larger full-scale development.

For more information: [northernminerals.com.au](http://northernminerals.com.au).



ASX Code:	NTU	Market Capitalisation:	A\$96.4m
Issued Shares:	1,161m	Cash (as at 30 June 2018):	A\$10.4m

## Compliance Statement

The information in this report relating to Exploration Results was compiled by Mr Robin Wilson who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Wilson is a full time employee of Northern Minerals Limited and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (the JORC Code). Mr Wilson consents to the inclusion of this information in the form and context in which it appears.

## Appendix 1

Iceman Drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Mag Azimuth	Inclination	Depth(m)
BRIR0001	490746	7901642	470	045°	-60°	130
BRIR0002	490728	7901653	470	045°	-60°	102
BRIR0003	490709	7901639	472	045°	-60°	102
BRIR0004	490687	7901651	471	045°	-60°	84
BRIR0005	490733	7901625	472	045°	-60°	60
BRIR0006	490695	7901628	472	045°	-60°	60
BRIR0007	490673	7901636	472	045°	-60°	60
BRIR0008	490681	7901682	471	045°	-60°	78
BRIR0009	490668	7901669	472	045°	-60°	78

Dazzler drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Mag Azimuth	Inclination	Depth(m)
BRDR0008	490355	7901931	472	045°	-60°	120
BRDR0009	490342	7901917	472	045°	-60°	150
BRDR0010	490317	7901960	472	045°	-60°	120
BRDR0011	490302	7901946	473	045°	-60°	120
BRDR0012	490333	7901943	472	045°	-60°	96

BRDR0013	490288	7901932	473	045°	-60°	84
BRDR0014	490292	7901969	471	045°	-60°	78
BRDR0015	490275	7901953	472	045°	-60°	78
BRDR0016	490261	7901974	472	045°	-60°	78
BRDR0017	490246	7901959	472	045°	-60°	90
BRDR0018	490238	7901986	472	045°	-60°	78
BRDR0019	490226	7901974	472	045°	-60°	78
BRDR0020	490318	7901928	473	045°	-60°	78

Table 1: JORC code, 2012 Edition

## Section 1 - Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	<p><i>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i></p>	<p>Iceman Prospect: 9 Reverse Circulation (RC) drill holes were completed totalling 754m, with hole depths between 60m and 130m. Assays have been received for 2 holes.</p> <p>Dazzler Prospect: 13 RC drill holes were completed for 1242m with hole depths between 78m and 150m. Assays have been received for 2 ½ holes.</p> <p>Samples were collected at one metre intervals and subsampled via either a manual or a rig mounted triple - tier riffle splitter.</p> <p>Reverse Circulation (RC) drill samples were analysed in the field using Niton XRF XLt3-950 GOLDD+ portable XRF analyser (pXRF). The pXRF was placed on the primary split sample. One measurement was completed for each drill metre sample, through the calico bag.</p>
	<p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p>	<p>The pXRF instrument is calibrated and serviced annually or more frequently, with daily instrument calibration completed as a minimum. Additionally, at the start of each sampling session, standards are analysed.</p> <p>Sampling was carried out under NTU protocols and employed QAQC procedures in line with industry standard practice and fit for purpose i.e. first-pass exploration drilling. RC drill holes were sampled at one metre intervals exclusively and split at the rig to achieve a target 2-5 kilogram sample which was pulverised at the laboratory to produce material for assay.</p>
	<p><i>Aspects of the determination of mineralisation that are Material to the Public Report.</i></p>	<p>.</p>

<i>Drilling techniques</i>	<i>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i>	RC drilling was with nominal diameter of 140mm. RC drilling was completed using face sampling hammer.
<i>Drill sample recovery</i>	<i>Method of recording and assessing core and chip sample recoveries and results assessed.</i>	RC recovery was assessed by subjective assessment based on volume recovered. RC recoveries were observed to be generally acceptable with recoveries typically 80% or greater. RC recovery information is recorded in the geologist logs and entered into the database.
	<i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i>	RC sample recoveries were visually checked for recovery, moisture and contamination. The cyclone and splitter were routinely cleaned to minimise material build up.
	<i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i>	At this preliminary stage this relationship has not been investigated at the prospects in question.
<i>Logging</i>	<i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i>	RC logging was completed on one metre intervals at the rig by the geologist. Logging is completed directly onto a laptop in the field using a proprietary geological logging package with in-built validation. Logging information was reviewed by the responsible geologist prior to final load into the database. Chip trays were collected for each of the RC intervals.
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i>	Logging was generally qualitative in nature.
	<i>The total length and percentage of the relevant intersections logged.</i>	All RC drilling metres were logged and entered into the database.
<i>Sub-sampling techniques and</i>	<i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i>	RC samples were collected from the full recovered interval by rig mounted triple – tier riffle splitter, or manually using a triple tier riffle splitter. Manual splits were taken in place of where a static cone split sample had been previously taken, where the calico sub-samples were returned to bulk sample prior to riffle splitting. The majority of

<i>Sample preparation</i>		samples were collected dry with a minor number being moist due to ground conditions or excessive dust suppression. Samples were split without drying.
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	The sample preparation techniques employed for the RC samples follow industry standard practice at Genalysis Laboratory. Samples are oven dried, crushed if required and pulverised prior to a pulp packet being removed for analysis.
	<i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i>	<p>Field QAQC procedures included the field insertion of certified reference materials (standards) having a range of values reflecting the general spread of values observed in the mineralisation.</p> <p>Blanks were also inserted in the field and developed from local host rock following chemical analysis. Field duplicates were collected by either a second sample off the splitter (RC).</p> <p>Insertion rates targeted 1:20 for duplicates, blanks and standards, with increased frequency in mineralised zones.</p> <p>At this stage of exploration, subsampling is limited to on rig splitting using a static cone splitter. No QA/QC of the splitting method has been carried out.</p>
	<i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i>	Field duplicates inserted at a frequency of 1:20. Analysis of performance will be completion upon receiving the complete set of analytical data for the program.
	<i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i>	The RC sample is appropriate for the grain size of the material.
<i>Quality of assay data and laboratory tests</i>	<i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i>	Samples assayed by Genalysis for rare earth elements were fused with sodium peroxide within a nickel crucible and dissolved with hydrochloric acid for analysis. Fusion digestion ensures complete dissolution of the refractory minerals such as xenotime, which are only partially dissolved if the pulp is digested in acids. The digestion solution, suitably diluted, is analysed by ICP Mass Spectroscopy (ICP-MS) for the determination of the REE (La – Lu) plus Y, Th and U..

<p><i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i></p>	<p>In the field a Niton (XL3T-950 GOLDD+) XRF hand held tool was used to provide a preliminary quantitative measure of mineralisation. A reading time of 30 seconds was used, with a single reading taken for every metre of RC drilling. The reading was on unprepared raw RC chips, through the calico sample bag. The samples contained natural moisture. Intervals for which readings returned yttrium (Y) of 200ppm or greater were selected for analysis, as were a selection of sub 200ppm yttrium samples at the geologist's discretion.</p> <p>The TREO (pXRF) values referenced in this announcement are derived from the raw yttrium grade direct from the device, and calibrations based on correlation with over 3000 paired assays (using similar field techniques) from the greater Browns Range Project. See correlation plot in body of text for more information</p>	
<p><i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></p>	<p>Certified reference materials, using values across the range of mineralisation, were inserted blindly and randomly. Results highlight that sample assay values are suitably accurate and unbiased.</p> <p>Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures.</p> <p>Calibration of the PXRF is at least daily with the silica blank standard and the TILL-4 yttrium standard checked at the beginning of every sample run.</p>	
<p><i>The verification of significant intersections by either independent or alternative company personnel.</i></p>	<p>Internal verification of significant results by more than one company geologist.</p>	
<p><i>Verification of sampling and assay</i></p>	<p><i>The use of twinned holes.</i></p>	<p>No holes have been twinned due to this being early stage exploration</p>
	<p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p>	<p><b>RC Drilling</b></p> <p>Primary data was collected into a proprietary logging package (OCRIS) with in-built validation. Details were extracted and pre-processed prior to loading. Datashed is used as the database storage and management software and incorporates numerous data validation and integrity checks, using a series of defined data loading tools. Data is stored on a SQL server by Northern Minerals Ltd subject to electronic backup.</p>

		<p><b>Portable XRF</b></p> <p>Analytical data was collected directly by the Niton pXRF and down loaded by digital transfer to an excel sheet with inbuilt QAQC.</p> <p>All data was checked by the responsible geologist and digitally transferred to Perth. Datashed is used as the database storage and management software and incorporates numerous data validation and integrity checks using a series of defined data loading tools. Data is stored on a SQL server and electronic backups completed three times per day.</p>
	<i>Discuss any adjustment to assay data.</i>	<p>The assay data were converted from reported elemental assays for a range of elements to the equivalent oxide compound as applicable to rare earth oxides. Oxide calculations are completed by the laboratory and checked by Northern Minerals.</p> <p>No issues were identified. The oxides were calculated from the element according to the following factors below: CeO<sub>2</sub> - 1.2284, Dy<sub>2</sub>O<sub>3</sub> - 1.1477, Er<sub>2</sub>O<sub>3</sub> - 1.1435, Eu<sub>2</sub>O<sub>3</sub> - 1.1579, Gd<sub>2</sub>O<sub>3</sub> - 1.1526, Ho<sub>2</sub>O<sub>3</sub> - 1.1455, La<sub>2</sub>O<sub>3</sub> - 1.1728, Lu<sub>2</sub>O<sub>3</sub> - 1.1371, Nd<sub>2</sub>O<sub>3</sub> - 1.1664, Pr<sub>6</sub>O<sub>11</sub> - 1.2082, Sm<sub>2</sub>O<sub>3</sub> - 1.1596, Tb<sub>4</sub>O<sub>7</sub> - 1.1421, Tm<sub>2</sub>O<sub>3</sub> - 1.1421, Y<sub>2</sub>O<sub>3</sub> - 1.2699, Yb<sub>2</sub>O<sub>3</sub> - 1.1387.</p>
<i>Location of data points</i>	<i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i>	<p><b>RC Drilling</b></p> <p>Drill collar locations have been surveyed by NTU staff using a KGPS receiver with an accuracy of +/- 0.02 metres.</p> <p>Down hole surveys were completed by the drilling contractor using a gyroscope at the time of drilling. .</p>
	<i>Specification of the grid system used.</i>	The grid system used is MGA94 Zone 52. All reported coordinates are referenced to this grid.
	<i>Quality and adequacy of topographic control.</i>	<p><b>RC Drilling</b></p> <p>Topographic control is based on airborne digital terrain survey data collected in 2011 with accuracy considered to be +/-1m.</p>

	<i>Data spacing for reporting of Exploration Results.</i>	<p>Iceman Prospect: 9 RC drillholes have been completed to date, which are located on four drill fences 25m apart, and holes spaced 20m apart.</p> <p>Dazzler Prospect: 13 RC drillholes have been completed in the current program, on six drill fences 25m apart, with the holes again spaced at 20m on drill fences.</p> <p>All holes at both prospects in the current program have been drilled at an inclination of 60° towards the northwest (045°).</p>
<i>Data spacing and distribution</i>	<i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>	Exploration Results only. Data spacing and distribution is not yet sufficient to support Mineral Resource or Ore Reserve Estimation.
	<i>Whether sample compositing has been applied.</i>	Sampling is on 1m intervals. Results have not been physically composited.
<i>Orientation of data in relation to geological structure</i>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	<p><b>RC Drilling</b></p> <p>All drill holes in the current program at Iceman and Dazzler have been drilled at an inclination of 60° towards the northwest (045°), which is interpreted to be perpendicular to the overall structural and lithological trend of the southern margin of the Browns Range Dome. The drilling results have suggested that the mineralised zone is spatially associated with the Gardiner Sandstone/Browns Range Metamorphics unconformity which is interpreted to dip moderately towards the southwest.</p>
	<i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i>	There is currently insufficient drilling at Iceman and Dazzler to confidently interpret the orientation of a potential mineralised zone. Current knowledge however indicates that the orientation of drilling with respect to overall structural and lithological trends is not expected to introduce any sampling bias.
<i>Sample security</i>	<i>The measures taken to ensure sample security.</i>	Samples are collected on site under supervision of the responsible geologist and stored in bulk bags on site prior to transport by company truck or utility to Halls Creek commercial transport yard. The samples are stored in a secure area until loaded and delivered to the Intertek Genalysis laboratory in Perth.

<i>Audits or reviews</i>	<i>The results of any audits or reviews of sampling techniques and data.</i>	No audits/reviews have been conducted.
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## Section 2: Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	<i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i>	The Iceman and Dazzler prospects are located on Exploration licence E80/5041. The tenement is located in the company's Browns Range Project approximately 150 kilometres south-east of Halls Creek and adjacent to the Northern Territory border in the Tanami Desert. Northern Minerals owns 100% of all mineral rights on the tenement. The Jaru Native Title Claim is registered over the Browns Range Project area and the fully determined Tjurabalan claim is located in the south of the project area.
	<i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i>	The tenements are in good standing and no known impediments exist.
Exploration done by other parties	<i>Acknowledgment and appraisal of exploration by other parties.</i>	No previous exploration for REE mineralisation has been completed by other parties at the Iceman and Dazzler prospects. Regional exploration for uranium mineralisation was completed in the 1980s without success.
Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	The Browns Range prospects are located on the western side of the Browns Range Dome, a Paleoproterozoic dome formed by a granitic core intruding the Paleoproterozoic Browns Range Metamorphics (meta-arkoses, feldspathic meta-sandstones and schists) and an Archaean orthogneiss and schist unit to the south. The dome and its aureole of metamorphics are surrounded by the Mesoproterozoic Gardiner Sandstone (Birrindudu Group). The Browns Range xenotime mineralisation is typically hosted in hydrothermal quartz and hematite veins and breccias within the meta-arkoses of the Archaean Browns Range Metamorphics. Various alteration styles and intensities have been observed; namely silicification, sericitisation and kaolinite alteration.

		<p>The Iceman and Dazzler prospects are located on a scarp slope that marks the unconformity between the younger overlying Gardiner Sandstone and the older Browns Range Metamorphics. At both prospects it is currently unclear what the controls on mineralisation are, however there is a clear spatial association between the unconformity and the most anomalous zones, with mineralisation occurring in both units above and below the unconformity.</p> <p>Further work is required to determine the controls on mineralisation at both prospects with a diamond drilling program likely following the completion of the RC drilling program. .</p>
<p><i>Drill hole Information</i></p>	<p><i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i></p> <p><i>easting and northing of the drill hole collar</i></p> <p><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></p> <p><i>dip and azimuth of the hole</i></p> <p><i>down hole length and interception depth</i></p> <p><i>hole length.</i></p>	<p>See tables above in Appendix 1 and Tables 1 &amp; 2 in body of text.</p>
<p><i>Data aggregation methods</i></p>	<p><i>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</i></p> <p><i>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and</i></p>	<p>Significant intervals were tabulated downhole for reporting. Each metre downhole was analysed using sodium fusion ICP-MS. All individual metres (one result per metre) were averaged over the entire tabulated range. A lower cut-off of 0.15% TREO was used during data aggregation, allowing for 2m of internal dilution. No top-cuts have been applied.</p> <p>All intervals were initially based on 1m sample runs, with no lengths shorter than 1m. The geologist then qualitatively grouped contiguous mineralised runs together and the average analysis of the entire run is reported here.</p>

	<i>some typical examples of such aggregations should be shown in detail.</i>	
	<i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i>	No metal equivalents values are used for reporting of exploration results.
<i>Relationship between mineralisation widths and intercept lengths</i>	<i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i>	Not known.
<i>Diagrams</i>	<i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported. These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i>	Refer to Figures 1, 2, 3, 4, 5 in body of text.
<i>Balanced reporting</i>	<i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i>	Previous exploration results are the subject of previous reports. The preliminary results of all current drillholes have been reported, including those with “No Significant Results”. Holes with “No Significant results” are acknowledged in Tables 2 and 3.
<i>Other substantive exploration data</i>	<i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	<p>At Browns Range Project WA, airborne magnetic and radiometric surveys were acquired by Northern Minerals in 2011. Hyperspectral data captured during October 2012 by Hyvista Corporation Pty Ltd. Very high resolution “Ultracam” aerial photography was captured by Hyvista during the Hyperspectral survey.</p> <p>Regional reconnaissance including geological mapping, rock chip sampling and also geochemical soil sampling completed over the Iceman and Dazzler prospects.</p> <p>Dazzler has previously had reconnaissance RC drilling with seven drill holes completed in 2013. Details of this drilling were reported in the ASX announcement dated 15 October 2014 entitled “Further Discoveries Reinforce Exploration Potential at Browns Range”</p>

Further work	<i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i>	Further planning is contingent on the receipt of analytical data for the remaining samples still at the laboratory and the interpretation of all results.
	<i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i>	Refer to Figures 1, 2, 3, 4, 5 in body of text.

*Section 3: Estimation and Reporting of Mineral Resources*

Not applicable

*Section 4: Estimation and Reporting of Ore Reserves*

Not applicable