

# Final results from 2020 drilling firm-up resource growth potential at Browns Range

- All results now received from 2020 exploration and resource definition drilling campaign at Browns Range;
- Remaining assay results received indicate potential for resource growth near Banshee and Area 5 deposits;
- Infill and extension drilling at Dazzler confirm existing resource and further growth potential;
- Best results from Dazzler of 14m @ 0.76% TREO and 6m @ 1.41% TREO; and
- Intersections near Banshee and Area 5 deposits and at new Toad prospect warrant further investigation and follow-up in second phase drilling in 2021.

Heavy rare earths producer, Northern Minerals Limited (ASX: NTU) (**Company**) is pleased to advise it has returned further encouraging results from its 2020 exploration and resource definition drilling program at the Browns Range Project.

The assay results from the remaining 72 holes drilled in the 2020 program have now been received, following the announcement of the first batch of assay results from 45 drill holes on 18 January 2021 (*"First drilling results indicate potential for Mineral Resource growth at Browns Range"*).

The latest results are from Area 5 (18 holes), Banshee South (11 holes), Banshee West (8 holes), Dazzler/Iceman (25 holes), Toad (3 holes) and regional exploration (7 holes).

Infill and extension drilling results from Dazzler (14m @ 0.76% TREO from 25m and 6m @ 1.41% TREO from 12m) have confirmed the mineralisation to the southeast of the main high-grade zone at Dazzler and indicated the potential to increase the existing Dazzler Mineral Resource.

In the Banshee area, widespread low-grade mineralisation intersected at Banshee West (13m @ 0.43% TREO from 23m) and Banshee South (19m @ 0.33% TREO from 11m) suggest a significant mineralised system in this area.

Similarly, at Area 5 widespread low-grade mineralisation was intersected (6m @ 0.44% TREO from 7m and 2m @ 0.69% TREO from 48m).

Three holes drilled as follow-up to the first five drill holes at the new Toad prospect returned a best intersection of 6m @ 0.78% TREO from 49m.

Northern Minerals announced on the 2 November 2020 that it had commenced a \$5 million exploration program that would include up to 16,500 metres of drilling before the end of June 2021.

The Company completed 8,500 metres of reverse circulation (RC) drilling in late 2020 and the significant results will be followed-up in the second phase of drilling being planned at Browns Range in 2021, following the end of the wet season in the Kimberley region.



### Powering Technology.

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#### Dazzler/Iceman

Infill and extension drilling was completed in the Dazzler/Iceman area in order to upgrade the resource categorisation of two separate mineralised pods located southeast of the main high-grade zone of mineralisation and to close off the western extent of the Iceman prospect (see Figure 1 & 2 below). A total of 25 holes for 2,142m were drilled in the program.

Best results from this drilling included:

- 14m @ 0.76% TREO from 25m in BRDR0130;
- 6m @ 1.41% TREO from 12m in BRDR0139;
- 11m @ 0.74% TREO from 26m in BRDR0141; and
- 12m @ 0.69'% TREO from 14m in BRDR0138.

All significant intercepts are summarised in Appendix 1 below and drill hole collar details are listed in Appendix 2. Further infill drilling of Dazzler/Iceman will be included in the second phase of drilling.

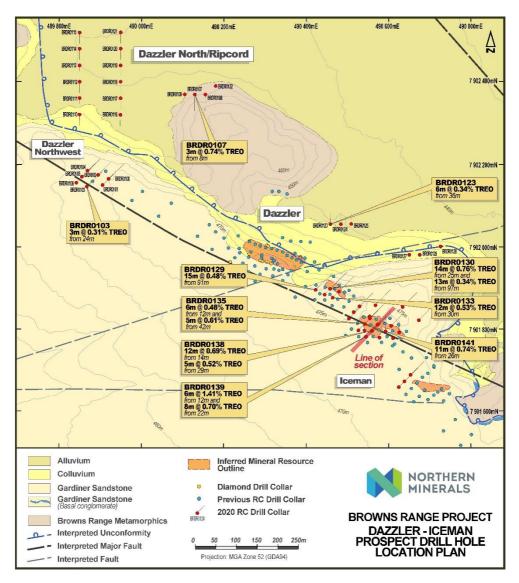


Figure 1 – Dazzler/Iceman area drill hole location plan



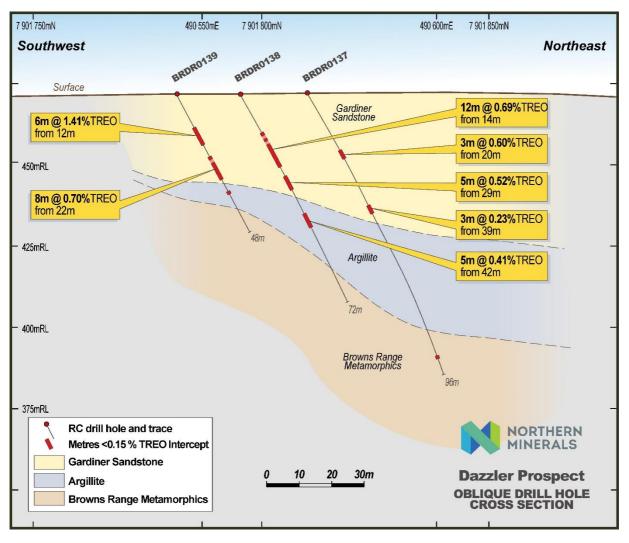


Figure 2 – Dazzler drill cross section

#### Banshee area

At Banshee West eight holes for 614m were drilled as a first-pass test of a portable XRF yttrium and radiometric surface anomaly, located 250m west of the Banshee deposit (see Figure 3 and 5 below). Widespread low-grade mineralisation was intersected in several of the holes and the mineralised zones appear to dip gently towards the south. Mineralisation is open in all directions. Best results from this area include:

- 12m @ 0.43% TREO from 34m in BRBR0059;
- 13m @ 0.43% TREO from 23m in BRBR0062; and
- 4m @ 0.63% TREO from 41m in BRBR0061

At Banshee South 11 holes for 613m were drilled with six holes targeting a surface portable XRF yttrium anomaly west of the previous Banshee South drilling and the other holes following-up on significant results from earlier drilling. The drill holes targeting the surface geochemical anomaly returned the most significant results with the best being **19m@0.33% TREO from 11m in BRBR0047**.



All significant intercepts are summarised in Appendix 1 below and drill hole collar details are listed in Appendix 2. Follow-up drilling is being planned for Banshee as part of the second phase drilling, to commence at the end of the northern wet season.

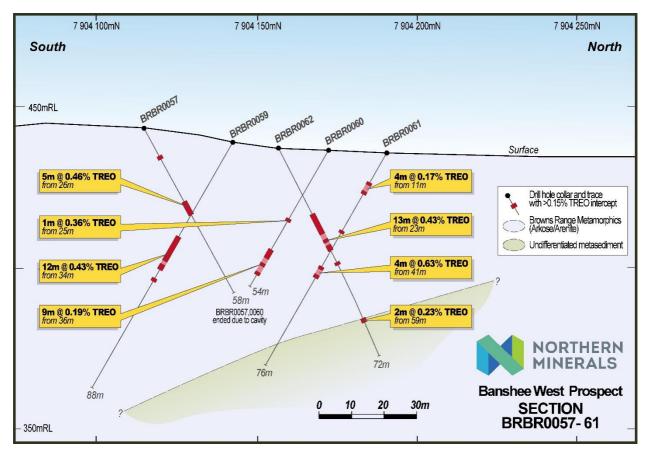


Figure 3- Banshee West drill section

#### **Toad prospect**

Eight RC holes for 580m were completed at the Toad prospect, with the first five holes (BRR0537 – 0541) returning significant assay results (reported in ASX announcement dated 18<sup>th</sup> January 2021). The prospect is located approximately 250m southeast of Banshee (see Figure 4 and 5 below). A further three holes were drilled to follow-up on the anomalous portable XRF readings in the initial five holes. Further significant results were received from the follow-up drill holes, with the best result being from BRTR0002 with **6m @ 0.78% TREO from 49m**.

All the significant intercepts are summarised in Appendix 1 below and drill hole collar details are listed in Appendix 2. Follow-up drilling is being planned to commence at the end of the northern wet season, as part of the second phase of drilling.





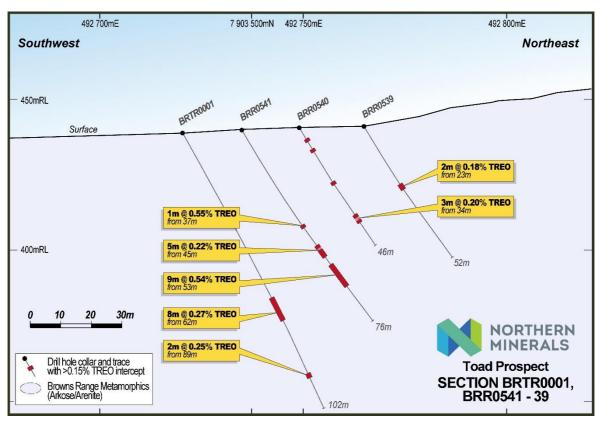


Figure 4– Toad prospect drill section







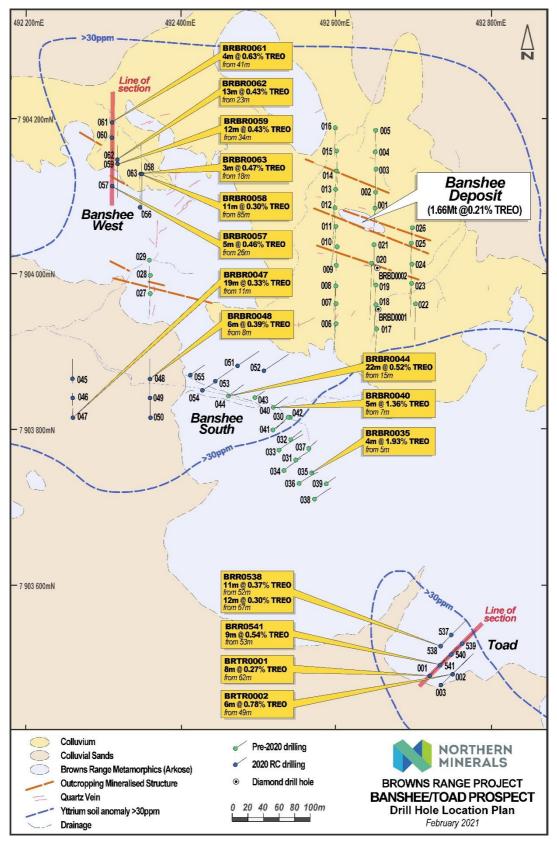


Figure 5 – Toad and Banshee drill hole location plan



#### Area 5

The drilling program at Area 5 tested three targets. The first target followed up on significant results from drilling in 2013, whilst the other two targets were untested geochemical surface anomalies located to the west and northwest of the Area 5 deposit. A total of 18 holes for 1250m were drilled, with widespread low-grade mineralisation intersected (see Figure 6 and 7 below). Significant assay results were returned from drill holes to the northwest of the 2013 drill line, with a best result of **6m @ 0.44% TREO from 7m in BRAR0093**. Low grade mineralisation was also intersected in each of the five holes drilled at the geochemical anomaly 500m to the northwest of Area 5. A best result of **2m @ 0.69% TREO from 48m in BRAR0082** was received from these drill holes.

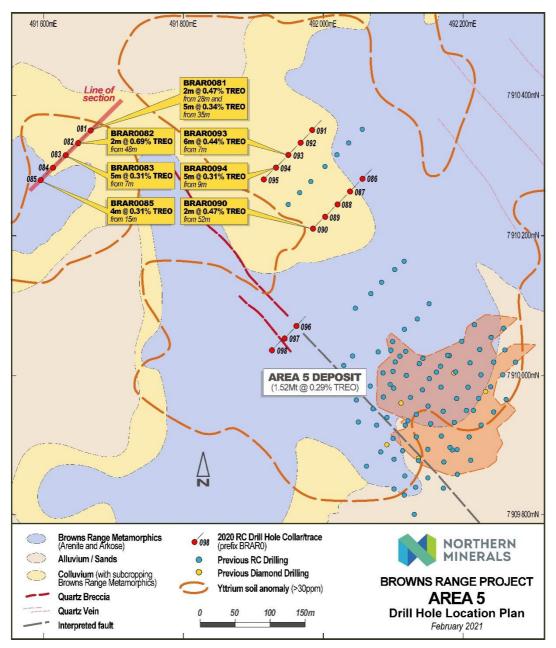


Figure 6 – Area 5 drill hole location plan



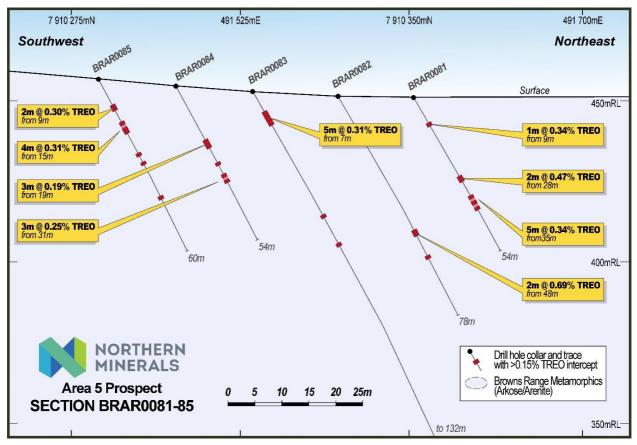


Figure 7 – Area 5 drill section

All significant intercepts are summarised in Appendix 1 below and drill hole collar details are listed in Appendix 2. Follow-up drilling is being planned as part of the second phase of drilling, to commence at the end of the northern wet season.

#### **Regional exploration**

A first pass drill program of seven holes for 444m was completed at an area with a strong surface radiometric anomaly with a coincident pXRF yttrium anomaly. Xenotime mineralisation had also been observed within a mica schist from float material near the radiometric high. A rock chip sample of this material returned an assay of 1.26% TREO. The results from the drilling were generally disappointing with only one hole returning a significant intercept, **3m @ 0.25% TREO from 8m in BRR0545**. No follow-up drilling is planned in this area in 2021.







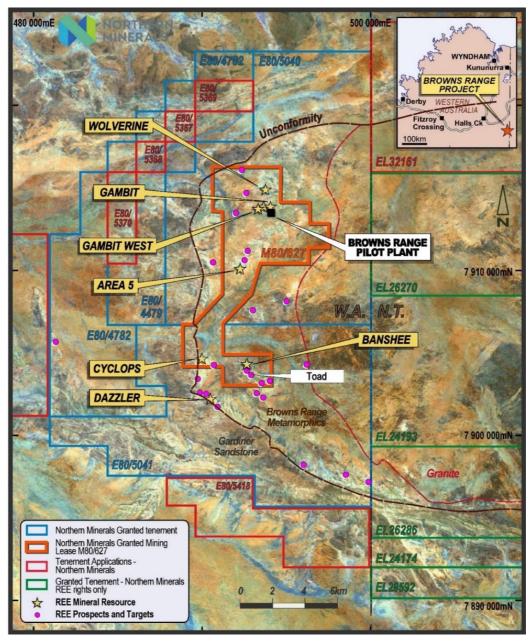


Figure 8 – Northern Minerals has more than 2,300 square kilometres of tenure to evaluate at Browns Range.

**Northern Minerals CEO Mark Tory said:** "With final assay results now received for the remaining holes drilled at the end of 2020, we can now finalise our planning for the second phase of drilling we have committed to before the end of June."

"I look forward to further drilling to follow-up the encouraging results at Banshee, Area 5 and the new Toad prospect as well as several exciting new untested targets, to potentially contribute to future resource growth."

ENDS

Authorised by Mark Tory - CEO





#### For further information:

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#### About Northern Minerals:

Northern Minerals Limited (ASX: NTU) (Northern Minerals or the Company) is one of a few producers of heavy rare earth element Dysprosium outside of China via production from the Browns Range Heavy Rare Earth Project in northern Western Australia.

The Company commenced the production of heavy rare earth carbonate in late 2018 as part of a three-year pilot assessment of economic and technical feasibility of a larger scale development at Browns Range. In March 2020, the operation was placed into care & maintenance as a result of COVID-19 and has partially restarted operations in August 2020.

The work program provides the opportunity to gain production experience and surety of supply for our offtake partner, thyssenkrupp, as well as allowing the assessment of various project enhancement initiatives including ore sorting and the separation of the product into individual rare earth oxides.

Through the development of its flagship project, the Browns Range Project (the Project), Northern Minerals aims to build the Western Australian operation into a 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 ironboron) magnets used in clean energy, military and high technology solutions.

For more information: northernminerals.com.au.



ASX Code:	NTU	Market Capitalisation:	A\$235.17
<b>Issued Shares:</b>	4,437m	Cash (as at 31 December 2020):	A\$10.6m



#### **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

RC drilling– Significant intercepts (>=2m @ 0.15% TREO or equivalent, with a maximum of 2m continuous internal dilution. No top-cut has been applied all widths are downhole lengths.)

Hole ID	Prospect	Width (m)	From (m)	To (m)	Dy2O3 ppm	TREO (%)
	Area 5	1	9	10	196	0.34
BRAR0081		2	28	30	342	0.47
		5	35	40	284	0.34
BRAR0082	Area 5	2	48	50	614	0.69
BRAR0083	Area 5	5	7	12	245	0.31
BRAR0084	Area 5	3	19	22	182	0.19
DRARUU04		3	31	34	195	0.25
	Area 5	2	9	11	250	0.30
BRAR0085		4	15	19	293	0.31
		4	26	30	114	0.13
BRAR0086	Area 5					No significant results
BRAR0087	Area 5					No significant results
BRAR0088	Area 5	1	39	40	579	0.66
BRAR0089	Area 5	6	5	11	132	0.16
BRAR0090	Area 5	2	52	54	435	0.47
BRAR0091	Area 5					No significant results
BRAR0092	Area 5					No significant results
	Area 5	6	7	13	403	0.44
BRAR0093		2	28	30	434	0.52
DIAROUJS		4	35	39	177	0.23
		1	45	46	232	0.30
	Area 5	5	9	14	155	0.31
		6	20	26	190	0.21
		2	60	62	236	0.25
BRAR0094		4	69	73	116	0.18
		1	78	79	693	0.83
		2	89	91	157	0.21
		1	97	98	252	0.30



BRAR0095	Area 5					No significant results
BRAR0096	Area 5					No significant results
BRAR0097	Area 5	4	18	22	65	0.21
BRAR0098	Area 5					No significant results
BRBR0045	Banshee South	1	21	22	239	0.34
BRBR0046	Banshee South					No significant results
BRBR0047	Banshee South	19	11	30	242	0.33
BRBR0048	Banshee South	6	8	14	374	0.39
BRBR0049	Banshee South					No significant results
	Banshee South	5	32	37	110	0.18
BRBR0050		2	45	47	115	0.23
BRBR0051	Banshee South	4	33	37	141	0.16
BRBR0052	Banshee South	3	24	27	123	0.19
BRBR0053	Banshee South	2	19	21	149	0.22
BRBR0054	Banshee South					No significant results
BRBR0055	Banshee South					No significant results
	Banshee West	2	36	38	213	0.24
BRBR0056		2	41	43	224	0.24
BIGROODO		4	48	52	156	0.17
		7	67	74	181	0.21
BRBR0057	Banshee West	5	26	31	316	0.46
	Banshee West	10	30	40	163	0.22
BRBR0058		4	52	56	159	0.18
ыыкоозо		1	74	75	317	0.33
		11	85	96	243	0.30
BRBR0059	Banshee West	12	34	46	386	0.43
BRBR0060	Banshee West	1	25	26	133	0.36
ENERGOOD		9	36	45	139	0.19
BRBR0061	Banshee West	4	11	15	99	0.17
ENERGOOI		4	41	45	575	0.63
BRBR0062	Banshee West	13	23	36	220	0.43



		2	59	61	200	0.23
	Banshee West	3	18	21	333	0.47
BRBR0063		5	43	48	56	0.15
BRDR0129	Dazzler	3	85	88	64	0.18
DEDEDITZ		15	91	106	174	0.48
BRDR0130	Dazzler	14	25	39	700	0.76
DIVDIVOIDO		13	97	110	172	0.34
	Dazzler	3	30	33	497	0.56
BRDR0131		3	37	40	231	0.36
		7	44	51	161	0.26
BRDR0132	Dazzler					No significant results
	Dazzler	2	4	6	380	0.38
BRDR0133		12	30	42	462	0.53
DIGUOID		4	45	49	82	0.18
		1	94	95	340	0.40
BRDR0134	Dazzler					No significant results
	Dazzler	6	12	18	439	0.48
BRDR0135		2	32	34	206	0.23
DINDHOISS		1	37	38	390	0.55
		5	42	47	157	0.61
BRDR0136	Dazzler	6	35	41	189	0.30
	Dazzler	3	20	23	525	0.60
BRDR0137		3	39	42	59	0.23
		1	90	91	201	0.32
	Dazzler	12	14	26	619	0.69
BRDR0138		5	29	34	174	0.52
		5	42	47	324	0.41
BRDR0139	Dazzler	6	12	18	1374	1.41
		8	22	30	593	0.70
BRDR0140	Dazzler	2	38	40	154	0.39
BRDR0141	Dazzler	8	9	17	278	0.30
CUDUCITI		11	26	37	462	0.74



BRDR0142	Dazzler					No significant results
BRDR0143	Dazzler					No significant results
BRDR0144	Dazzler	1	7	8	796	0.81
BRDR0145	Dazzler					No significant results
BRDR0146	Dazzler					No significant results
BRDR0147	Dazzler	13	38	51	137	0.32
BRDR0148	Dazzler					No significant results
BRDR0149	Dazzler					No significant results
BRDR0150	Dazzler					No significant results
BRIR0026	Iceman	6	78	84	81	0.20
BRIR0027	Iceman					No significant results
BRIR0028	Iceman					No significant results
BRTR0001	Toad	8	62	70	251	0.27
DULKOOOT		2	89	91	230	0.25
BRTR0002	Toad	6	49	55	604	0.78
	Toad	4	61	65	226	0.26
BRTR0003		2	81	83	246	0.26
DIVINOUUS		2	87	89	159	0.18
		1	106	107	300	0.33
BRR0542	Regional					No significant results
BRR0543	Regional					No significant results
BRR0544	Regional					No significant results
BRR0545	Regional	3	8	11	214	0.25
01110040		1	21	22	261	0.31
BRR0546	Regional					No significant results
BRR0547	Regional					No significant results
BRR0548	Regional					No significant results

 $\begin{array}{l} ({TREO}-{Total}\;{Rare}\;{Earth}\;{Oxides}\;{=}\;{Sum}\;{of}\;{La_2O_3},\;{CeO_2},\;{Pr_6O_{11}},\;{Nd_2O_3},\;{Sm_2O_3},\;{Eu_2O_3},\;{Gd_2O_3},\;{Tb_4O_7},\;{Dy_2O_3},\;{Ho_2O_3},\;{Er_2O_3},\;{Tm_2O_3},\;{Yb_2O_3},\;{Lu_2O_3},\;{Y2O_3}) \end{array}$ 

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#### Appendix 2

#### RL Mag Hole ID North Inclination Depth(m) East Azimuth BRAR0081 491662.85 7910351.41 450.81 -60 45 54 491646.05 -60 45 78 **BRAR0082** 7910334.33 451.4 **BRAR0083** 491628.28 7910314.95 452.59 -60 45 132 **BRAR0084** 491610.76 7910298.54 454.39 -60 45 54 **BRAR0085** 491593.61 7910281.46 -60 45 60 456.36 **BRAR0086** 492051.39 7910280.08 459.38 -60 45 54 **BRAR0087** 492035.07 7910263 457.43 -60 45 60 45 **BRAR0088** -60 60 492017.18 7910245.72 456.11 **BRAR0089** 491999.81 7910228.36 455.32 -60 45 72 **BRAR0090** 491982.22 7910210.84 454.56 -60 45 84 **BRAR0091** 491981.74 7910352.34 453.39 -60 45 60 **BRAR0092** 45 60 491964.97 7910334.13 453.12 -60 **BRAR0093** -60 45 68 491948.61 7910317.27 453.08 **BRAR0094** 491930.29 7910297.49 453.02 -60 45 108 **BRAR0095** 491912.6 7910278.55 452.93 -60 45 84 **BRAR0096** 491958.29 7910068.07 453.99 -60 45 54 **BRAR0097** 491941.81 7910051.56 455.28 -60 45 54 **BRAR0098** 491925.07 7910034.38 456.37 -60 45 54

#### Area 5 RC drill hole collar details (all coordinates in GDA94 Zone 52)

#### Dazzler/Iceman RC drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Inclination	Mag Azimuth	Depth(m)
BRDR0129	490422.78	7901894.04	472.85	-60	45	114
BRDR0130	490457.85	7901894.88	472.37	-60	45	120
BRDR0131	490444.42	7901883.22	472.99	-60	45	108
BRDR0132	490479.15	7901889.64	472.78	-60	45	108
BRDR0133	490465.11	7901875.42	472.86	-60	45	102
BRDR0134	490553.82	7901825.92	472.31	-60	45	102



BRDR0135	490540.69	7901811.52	472.44	-60	45	90
BRDR0136	490525.96	7901797.53	472	-60	45	72
BRDR0137	490573.07	7901810.75	472.2	-60	45	96
BRDR0138	490558.67	7901795.4	472.29	-60	45	72
BRDR0139	490544.74	7901781.99	472.17	-60	45	48
BRDR0140	490605.8	7901807.22	472.23	-60	45	84
BRDR0141	490592.59	7901794.31	472.1	-60	45	72
BRDR0142	490579.23	7901781.1	472.04	-60	45	42
BRDR0143	490625.14	7901792.56	472.35	-60	45	60
BRDR0144	490610.83	7901777.23	472.08	-60	45	30
BRDR0145	490567.27	7901857.92	472.16	-60	45	108
BRDR0146	490498.84	7901825.18	472.56	-60	45	78
BRDR0147	490514.7	7901840.87	472.8	-60	45	90
BRDR0148	490528.63	7901854.57	472.63	-60	45	96
BRDR0149	490632.87	7901852.31	472.25	-60	45	102
BRDR0150	490673.38	7901822.58	471.88	-60	45	90
BRIR0026	490651.136	7901686.54	472.055	-60	45	84
BRIR0027	490637.583	7901673.669	471.941	-60	45	84
BRIR0028	490622.831	7901659.231	471.577	-60	45	90

#### Banshee South RC drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Inclination	Mag Azimuth	Depth(m)
BRBR0045	492259.05	7903865.82	432.94	-60.93	0.81	53
BRBR0046	492260.11	7903842.71	432.86	-60.6	1.5	52
BRBR0047	492258.53	7903814.9	432.89	-60.09	0.48	52
BRBR0048	492359.18	7903864.95	433.82	-59.87	1.59	52
BRBR0049	492359.08	7903843.86	434.09	-60.99	1.77	52
BRBR0050	492359.12	7903816.97	434.15	-60.83	358.6	52
BRBR0051	492477.18	7903884.74	443.78	-60.55	57.09	68
BRBR0052	492505.08	7903874.63	443.62	-60.23	50.55	76
BRBR0053	492444.26	7903860.37	436.07	-60.37	54.04	58



BRBR0054	492427.47	7903850.31	435.68	-59.99	57.25	52
BRBR0055	492409.55	7903868.46	435.44	-60.78	55.91	46

#### Banshee West RC drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Inclination	Mag Azimuth	Depth(m)
BRBR0056	492347.22	7904088	444.5	-61.1	5.92	88
BRBR0057	492313.38	7904115.38	442.96	-61.2	3.18	58
BRBR0058	492347.06	7904127.79	438.56	-60	180	106
BRBR0059	492316.76	7904144.59	437.76	-60	180	88
BRBR0060	492309.14	7904174.35	435.24	-60	180	54
BRBR0061	492309.19	7904192.48	434.39	-60	180	76
BRBR0062	492316.62	7904156.69	436.73	-60	360	72
BRBR0063	492345.59	7904139.99	436.93	-60	360	72

#### Toad RC drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Inclination	Mag Azimuth	Depth(m)
BRTR0001	492721.19	7903484.07	438.62	-60	45	102
BRTR0002	492749.54	7903483.4	438.76	-60	45	72
BRTR0003	492736.58	7903470.58	438.14	-60	45	114

#### Regional RC drill hole collar details (all coordinates in GDA94 Zone 52)

Hole ID	East	North	RL	Inclination	Mag Azimuth	Depth(m)
BRR0542	492904.41	7907444	436.74	-60	180	72
BRR0543	492902.91	7907499.26	436.04	-60	180	72
BRR0544	492852.56	7907451.25	435.73	-60	360	60
BRR0545	492906.88	7907402.82	436.88	-60	180	60
BRR0546	492856.33	7907383.25	436.1	-60	360	60
BRR0547	492951.19	7907390.66	437.12	-60	360	60
BRR0548	492867.37	7907411.07	436.81	-60	360	60

#### Table 1: JORC code, 2012 Edition

Section 1 - Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
		At the Area 5 prospect eighteen Reverse Circulation (RC)drill holes were completed. A total of 1250m of drilling was completed, with hole depths between 54m and 132m.
		At the Banshee South prospect eleven RC drill holes have been completed for 613m with hole depths between 46m and 76m.
		At the Banshee West prospect eight RC drill holes have been completed for 608m with hole depths between 54m and 106m.
Samplingchips, or specific specialised industry stSamplingtools appropriate to the minerals undetechniquesdown hole gamma sondes, or handheld		At the Iceman prospect three RC drill holes have been completed for 258m with hole depths between 84m and 90m.
	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.	At the Dazzler prospect assay results have been received for the remaining twenty-two RC drill holes, completed for 1884m with hole depths between 30m and 120m.
		At the Toad prospect assay results have been received for the remaining three RC drill holes which were completed for 288m with hole depths between 72m and 114m (holes BRTR0001 to BRTR0003).
		At the regional exploration target, seven RC drill holes have been completed for 444m with hole depths between 60m and 722m.
		Drill collar locations have been surveyed using high accuracy KGPS. Down hole surveys were completed using a gyroscope where possible. RC samples were collected at one metre intervals and were generally subsampled via a rig mounted static cone splitter, apart for resource drilling at Dazzler where subsampling was undertaken using a manual triple tier riffle splitter.
		Reverse Circulation (RC) drill samples were analysed 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



### Powering Technology.

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		bag. The results from the initial pXRF readings formed the basis for sample selection for additional geochemical analysis.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	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.
		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 to 5 kilogram sample weight.
	Aspects of the determination of mineralisation that are Material to the Public Report.	This report relates to exploration results only.
Drilling techniques	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).	RC drilling was with nominal diameters of 4 1/2 inches or 5 3/8 inches bit depending on the drilling contractor used. Drilling at Area 5, Dazzler, Iceman and Toad prospects were completed at a diameter of 5 and 3/8", whilst the drilling at Banshee South prospect were drilled at a diameter of 4 and 1/2". At Banshee West, the first six holes were completed at a diameter of 4 1/2 inches, whilst the remaining two were completed at 5 and 3/8". RC drilling was completed using face sampling hammer.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	RC recovery was initially assessed by subjective assessment based on volume recovered. All intervals selected for geochemical analysis were subsequently weighed incorporating the bulk sample plus the primary and duplicate samples. 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.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Geologists were based at the RC rig, and regularly inspected operations to ensure correct procedures were being used. RC sample recoveries were visually checked for recovery, moisture and contamination. The cyclone and splitter were routinely cleaned to minimise material build up.
	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.	At this stage of exploration this relationship has not been investigated at the prospects in question.





Logging	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.	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.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	Logging was generally qualitative in nature.
	The total length and percentage of the relevant intersections logged.	All RC drilling metres were logged and entered into the database.
Sub-sampling techniques and	If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	RC samples were collected from the full recovered interval by rig mounted static cone splitter, apart from the drilling at Dazzler and Banshee South where they were manually re-split using a triple tier riffle splitter. The majority of samples were collected dry with a minor number being moist due to ground conditions or excessive dust suppression. Samples were split without drying.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	The sample preparation techniques employed for the RC samples follow industry standard practice at Intertek Genalysis Laboratory. Samples are oven dried, crushed if required and pulverised prior to a pulp packet being removed for analysis.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Subsampling is limited to on rig splitting using a static cone splitter or a manual triple tier riffle splitter (Dazzler and Banshee South only). No QA/QC of the splitting method has been carried out.
Sample preparation	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.	Reference Standards developed from local xenotime mineralisation, and blanks developed from local unmineralized host rock following chemical analysis were inserted in the field. Field duplicates were collected by a second sample off the splitter (RC). Insertion rates targeted 1:20 for duplicates, blanks and standards, with increased frequency in mineralised zones.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The RC sample size are considered appropriate for the grain size of the material.





	The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.	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.
Quality of assay data and laboratory tests	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.	In the field a Niton (XL3T-950 GOLDD+) XRF handheld 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. 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.
	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.	Certified reference materials, using values across the range of mineralisation, were inserted blindly and randomly. Insertion rates targeted 1:20 for duplicates, blanks and standards, with increased frequency in mineralised zones Results highlight that sample assay values are suitably accurate and unbiased. Blanks were inserted in the field and developed from local host rock following chemical analysis. Laboratory QAQC involves the use of internal lab standards using certified reference material, blanks, splits and replicates as part of the in-house procedures.
	The verification of significant intersections by either independent or alternative company personnel.	Internal verification of significant results by more than one company geologist.
Verification of sampling and assay	The use of twinned holes.	No holes have been twinned due to this being early stage exploration at all prospects in question, except Dazzler.
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Portable XRF   Analytical data was collected directly by the Niton pXRF and downloaded by digital transfer to an excel sheet with inbuilt QAQC.   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.
		RC Drilling
		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.
	Discuss any adjustment to assay data.	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. No issues were identified. The oxides were calculated from the element according to the following factors below: CeO2 – 1.2284, Dy2O3 – 1.1477, Er2O3 – 1.1435, Eu2O3 – 1.1579, Gd2O3 – 1.1526, Ho2O3 – 1.1455, La2O3 – 1.1728, Lu2O3 – 1.1371, Nd2O3 – 1.1664, Pr6O11 – 1.2082, Sm2O3 – 1.1596, Tb4O7 – 1.1421, Tm2O3 – 1.1421, Y2O3 – 1.2699, Yb2O3 – 1.1387
	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.	Drill collar locations have been surveyed with a high accuracy KGPS. Down hole surveys were completed by the drilling contractor using a gyroscope or single-shot survey tool at the time of drilling. Drill collar locations have subsequently been surveyed using high accuracy KGPS. Down hole surveys have also been conducted post-drilling, where practical, using a Reflex Gyro survey instrument. Survey accuracy of both collars and down hole is considered acceptable at this stage of the exploration program.
Location of data points	Specification of the grid system used.	The grid system used is MGA94 Zone 52. All reported coordinates are referenced to this grid.
	Quality and adequacy of topographic control.	Topographic control is based on airborne digital terrain survey data collected in 2011 with accuracy considered to be +/-1m.
	Data spacing for reporting of Exploration Results.	Area 5 – 18 drill holes completed on 4 drill fences. Two of the fences were 50m step-outs either side of a drill line from 2011, with individual holes 25m apart. The other two





		fences were single lines across two geochemical anomalies, with individual holes 25m apart. Regional Exploration target – 7 drill holes completed on 3 drill fences 50m apart, with individual holes 30m to 50m apart. Banshee South – 5 holes drilled along 3 drill fences 25m apart at the north western extent of the main Banshee South trend, with individual holes 20m to 40m apart. A further 6 holes were drilled along 2 fences covering a broad geochemical anomaly located immediately west of main Banshee South trend, with individual holes 25m apart. Banshee West – 8 holes along 2 fences 25m apart with individual holes between 20-40m apart. Iceman- 3 holes along 2 fence 20m apart with individual holes between 20-40m apart. Dazzler – 22 individual holes drilled on 8 lines 25m to 50m apart, infilling and extending previous drilling. Individual holes generally spaced 25m apart, apart from 3 holes stepping out 50m to the north east at the end of their line. Toad – 3 holes completed along 2 drill fences 20m apart, with individual holes 20m apart. A total of 3 drill fences have been completed at the prospect with the other drill results reported in a previous ASX announcement.
Data spacing and distribution	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.	Exploration Results only. Data spacing and distribution is not yet sufficient to support Mineral Resource or Ore Reserve Estimation at all prospects besides Dazzler. Dazzler Mineral Resource estimate to be updated.
	Whether sample compositing has been applied.	Sampling is on 1m intervals. Results have not been physically composited.
Orientation of data in relation	Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.	Most drill holes in the current program have been drilled at an inclination of 60° at an orientation perpendicular to the interpreted structural and/or lithological trend.





to geological structure	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.	For the Area 5 drilling, all holes are drilled -60 degrees to an azimuth of 045 degrees perpendicular to geochemical and/or structural trends, however the trend of mineralisation at the three areas targeted is at this stage unclear. At Banshee South and Banshee West there has been insufficient drilling to confidently determine the geometry and orientation of the mineralisation At Dazzler, mineralisation is interpreted to be a moderately dipping (30-50 degrees) to the southwest, roughly coincident with the contact between the Gardiner Sandstone and the Browns Range Metamorphics stratigraphic units, and striking northwest-southeast. Resource drilling is predominantly conducted at -60 degrees dips drilled to an azimuth of 045 degrees, and as such drill holes intersect the mineralisation at acceptable angles. At Toad, holes were drilled at an inclination of 60 degrees towards an azimuth of 45 degrees. This orientation is perpendicular to an interpreted regional structure, however the trend of the mineralisation at this stage is unclear. There is currently insufficient drilling at the recently drilled areas at Area 5, Banshee South, Banshee West, and Toad 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. There was no significant mineralisation intersected at Iceman or the regional exploration target. For the Dazzler resource drilling, the orientation of drilling with respect to mineralisation is not expected to introduce any sampling bias.
		Samples are collected on site under supervision of the responsible geologist and stored
Sample security	The measures taken to ensure sample security.	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.





Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No audits/reviews have been conducted.





#### Section 2: Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	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.	The Dazzler and Iceman prospects are located on Exploration licence E80/5041 and Area 5, Banshee South, Banshee West and Toad are located on M80/627. The tenements are all 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.
	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.	The tenements are in good standing and no known impediments exist.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	No previous systematic exploration for REE mineralisation has been completed by other parties prior to Northern Minerals at the prospects in question. Regional exploration for uranium mineralisation was completed in the 1980s without success.
Geology	Deposit type, geological setting and style of mineralisation.	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.





	The Dazzler and Iceman 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. The mineralisation between Dazzler and Iceman is also aligned with a WNW-ESE trend in the magnetic data, marking the edge of the escarpment at the unconformity, indicating a possible structural control on the mineralisation. Further work is required to determine the controls on mineralisation at the Area 5, Banshee South, Banshee West, and Toad prospects with follow-up RC drilling program planned.
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: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length.	See tables above in Appendix 1 and 2.
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.	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.
	of the exploration results including a tabulation of the following information for all Material drill holes: easting and northing of the drill hole collar elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar dip and azimuth of the hole down hole length and interception depth hole length. In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually





	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 some typical examples of such aggregations should be shown in detail.	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.
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents values are used for reporting of exploration results.
Relationship between mineralisation widths and intercept lengths	If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	The Mineral Resource at Dazzler is currently interpreted to be moderately dipping (30-50 degrees) to the southwest, roughly coincident with the contact between the Gardiner Sandstone and the Browns Range Metamorphics stratigraphic units, and striking northwest-southeast. Infill and exploration drilling have been conducted at -60 degrees dips drilled to an azimuth of 045 degrees, and as such drill holes intersect the mineralisation at acceptable angles. The geometry of mineralisation at Area 5, Banshee South, Banshee West and Toad is currently unclear, but is generally assumed to be east-west or northwest-southeast based on mineralisation and outcropping structures at adjacent prospects or targets. Based on these assumptions the drilling orientation at each of the aforementioned prospects is considered optimal.
Diagrams	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.	Refer to Figures 1 to 7 in the body of text.
Balanced reporting	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.	Previous exploration results are the subject of previous reports. The results of all drill holes have been reported, including those with "No Significant Results".
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey	At Browns Range Project WA, airborne magnetic and radiometric surveys were acquired by Northern Minerals in 2011. Hyperspectral data captured during





results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	October 2012 by Hyvista Corporation Pty Ltd. Very high resolution "Ultracam" aerial photography was captured by Hyvista during the Hyperspectral survey. Regional reconnaissance including geological mapping, rock chip sampling and also geochemical soil sampling completed over all the prospects reported herein. Ground based radiometric surveys were completed over Banshee South, Banshee West, Central, Dazzler, Iceman and Toad during 2019-2020. Dazzler and Iceman have previously had RC drilling in 2013, 2018 and 2019, and diamond drilling in 2019. RC and diamond drilling were completed at Area 5 between 2011 and 2013, however only a single fence of RC drilling was within the area covered by the recent drilling. Banshee South has previously had RC drilling completed in 2016, 2018 and 2019. Results for the first five RC holes drilled at Toad during 2020 were reported to the ASX on the18th January 2021 Mineral Resource estimates have been previously completed at the Area 5 (2013) and Dazzler (incorporating Iceman). A mineral resource has been estimated for the Banshee deposit (2013), however there is insufficient drilling and/or understanding of the geometry of mineralisation to estimate mineral resources for Banshee South or Banshee West.
The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).	Follow-up drilling is being planned at the Area 5, Banshee South, Banshee West, Dazzler and Toad.
Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	Refer to Figures 1 to 7 in body of text.

Section 3: Estimation and Reporting of Mineral Resources

Not applicable

Further work





Section 4: Estimation and Reporting of Ore Reserves

Not applicable

