BLACK CANYON
ASX Announcement

Global Balfour Manganese Mineral Resource Estimates Exceed 300 Mt

- Completion of the Damsite and Balfour East Mineral Resource Estimates (MRE), increases Global Mineral Resources across the Balfour Manganese Field (BMF) to **314 Mt @ 10.5% Mn containing 33.1 Mt of manganese** (7% Mn cut-off) classified as Measured (**32%**) Indicated (**48%**) and Inferred (**20%**).

  o The higher-grade component totals **99 Mt @ 12.9% Mn containing 12.8 Mt of manganese** (11% Mn cut-off) classified as Measured (25%) Indicated (30%) and Inferred (45%).

- Maiden MRE of **40 Mt @ 11.9% Mn containing 4.7 Mt of manganese** (7% Mn cut-off) at the Balfour East and Damsite deposits**.**

  o **Balfour East - 32 Mt @ 11.9% Mn** (Inferred)

  o **Damsite - 7 Mt @ 12.1% Mn** (Inferred)

- The Company will commence desktop studies to determine optimal value from across the significant BMF deposits, which will include a review of the scale of operations, multi pit or single pit scenarios, and transport logistics.

- Exploration Targets Estimates (ETE) are being estimated for the Balfour East and Pickering targets with results expected next quarter.

- High Purity Manganese Sulphate (HPMSM) testwork continues with the multiple feedstock options now defined for Mineral Resources across the BMF.

Australian manganese explorer and developer, Black Canyon Limited ("**Black Canyon"** or "**the Company"**) (ASX: BCA) is pleased to announce Maiden Mineral Resource Estimates for the Company's 100% owned Balfour East and Damsite Deposits located within the Balfour Manganese Field totalling **40 Mt @ 11.9% Mn (Inferred) containing 4.7 Mt of Manganese (Table 2).**

Black Canyon Executive Director, Brendan Cummins, said: *"Discovering significant tonnes, grade and contained manganese across the Balfour Manganese Field deposits achieves one of our key objectives for 2023. We were confident that the acquisition of strategic tenements across the prospective BMF would increase the Company's mineral inventory and importantly, provide options to examine a number of long-life development scenarios. Black Canyon has discovered more than 33 Mt of contained manganese,*

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which in Australia is second only in contained manganese to the world class Groote Eylandt deposits[1]. We have demonstrated the potential scale of the basin, which maybe further enhanced with the estimation of Exploration Targets for the Pickering and Balfour East targets.'

"In 2024, we will continue to advance our flowsheet design for battery grade HPMSM, progress the base case HPMSM process development opportunity at an Australian site and further engage with customers seeking long term supplies of critical manganese compounds. All of this is against a positive backdrop of Australian and overseas government agencies aggressively mandated to induce independent critical mineral and material supply chains for midstream and downstream processing, boding well for companies like Black Canyon that are backing Australia first.'

"With the steel focussed manganese concentrate development, we have demonstrated the amenability of manganese enriched shales to produce a saleable concentrate between 30% and 33% Mn using simple beneficiating techniques. Refinement of the processing parameters continues, and we plan to use larger scale test samples from 100% owned mineral resources."

Combined Global Mineral Resources discovered by Black Canyon across the Balfour Manganese Field including Flanagan Bore now totals **314 Mt @ 10.5% Mn** classified as Measured (**32%**) Indicated (**48%**) and Inferred (**20%**) for **33.1 Mt of contained Manganese** (Table 1).

Table 1. Summary of Global Mineral Resources across the Balfour Manganese Field, December 2023

Summary of Mineral Resources [1-3]							
Deposit	Mineral Resource Category	Material (Mt)	In Situ Mn (Mt)	Mn (%)	Fe (%)	Si (%)	Al (%)
FB3[4]	Measured	52	5.5	10.5	10.4	16.9	4.3
LR1[4]	Measured	47	4.9	10.3	8.4	16.7	4.6
Total	**Measured**	**100**	**10.4**	**10.4**	**9.4**	**16.8**	**4.4**
KR1[5]	Indicated	79	7.8	10.0	7.9	18.0	5.4
FB3[4]	Indicated	63	6.3	10.0	9.6	16.8	4.4
LR1[4]	Indicated	8	0.9	11.3	9.4	6.9	1.8
Total	**Indicated**	**150**	**15.1**	**10.1**	**8.7**	**16.9**	**4.8**
KR2[5]	Inferred	24	2.9	11.9	10.6	19.2	5.0
Balfour East[5]	Inferred	32	3.9	11.9	8.5	18.6	4.9
Damsite[5]	Inferred	7	0.9	12.1	9.6	17.2	4.2
Total	**Inferred**	**64**	**7.6**	**11.9**	**9.4**	**18.7**	**4.9**
Grand Total		**314**	**33.1**	**10.5**	**9.1**	**17.2**	**4.7**

Notes to Table 1:
(1)   Mineral resources reported at a cut-off grade of 7% Mn.
(2)   Appropriate rounding has been applied.
(3)   Refer to Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.
(4)   Flanagan Bore deposits, which Black Canyon owns 75%
(5)   Deposit that Black Canyon owns 100%

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[1]https://www.south32.net/docs/default-source/exchange-releases/strategy-and-business-update-0x9bad90dfcedfa1a7.pdf?sfvrsn=94eb6e34_0
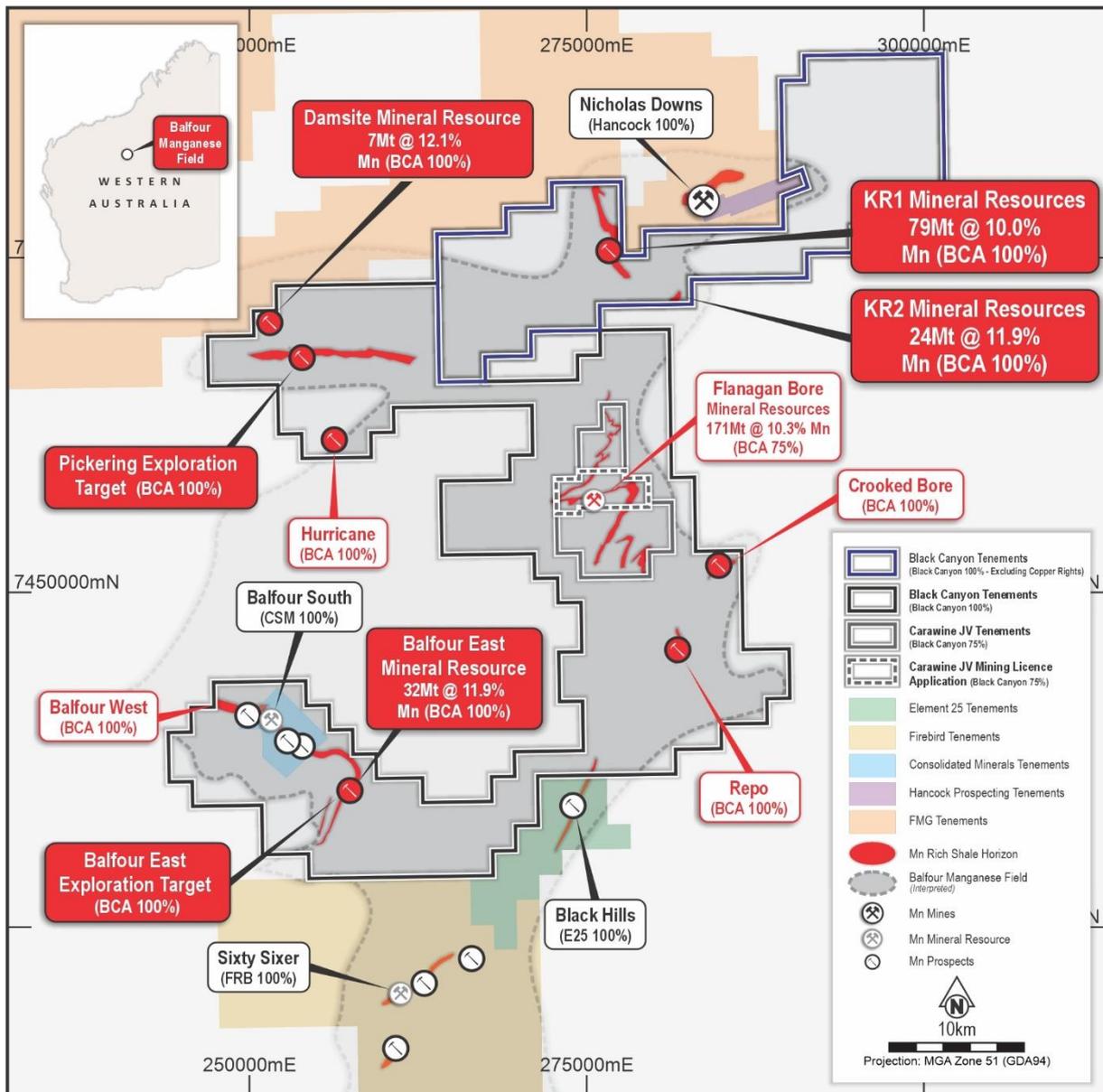
Figure 1. Location of the KR1, KR2, Balfour East, Damsite deposits and potential Exploration Targets across the Balfour Manganese Field. Mn shale target horizon (red solid outlines).

Balfour East and Damsite - Maiden Mineral Resource Estimates

Reverse Circulation (RC) drill results from the Balfour East and Damsite prospects completed in July 2023 by the Company have been reviewed and validated for the Mineral Resource Estimates. The work was completed under the supervision of Greg Jones, a specialist consultant in Mineral Resource Estimates, metallurgy and processing technology, who is employed by IHC Mining (refer to Competent Person statement). A Summary of the Mineral Resource Estimates and Reporting Criteria is attached to this announcement.

Table 2 displays the MREs for the Balfour East and Damsite deposits. The grade tonnage curves are presented in Figures 2 to 5 and oblique and cross-section views of the Balfour East and Damsite deposits are presented in Figures 6 to 9. Supporting JORC tables are presented in Appendix 1 and 2.

Table 2. Summary of Mineral Resources for the Balfour East and Damsite deposits (BCA 100%) across the Balfour Manganese Field, December 2023

Summary of Mineral Resources [1-3]							
Deposit	**Mineral Resource Category**	**Material (Mt)[2]**	**In Situ Mn (Mt)**	**Mn (%)**	**Fe (%)**	**Si (%)**	**Al (%)**
Balfour East	Inferred	32	3.9	11.9	8.5	18.6	4.9
Damsite	Inferred	7	0.9	12.1	9.6	17.2	4.2
Grand Total		**40**	**4.7**	**11.9**	**8.7**	**18.4**	**4.8**

Notes to Table 2:
(1)   Mineral resources reported at a cut-off grade of 7% Mn.
(2)   Appropriate rounding has been applied.
(3)   Refer to Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.

The Mineral Resources at Balfour East and Damsite are hosted in mostly outcropping and sub cropping manganese enriched shales and form subtle topographically elevated features. The Mineral Resources defined at Balfour East and Damsite have been estimated utilising a subset of the RC drilling completed by Black Canyon, comprising 84 holes for 2,896 m of drilling.

At Balfour East, the MRE is based on two traverses perpendicular to one another that were designed to follow-up the long axis of the outcrop and provide two step out holes either side of the outcrop. The drill holes were completed on either 200 or 100 m spaced drill hole centres. The early-stage drill data shows the manganese enriched shale geology and grades are continuous downhole, along and across strike, which supports the Inferred Mineral Resource classification at this drill spacing. The mineralisation is open along and cross strike, but further drilling is required to confirm the extents.

At Damsite, the MRE is based on traverses completed on three north south oriented 200 m spaced lines and 100 m spaced drill hole centres. The drill data shows the manganese enriched shale geology and grades are continuous downhole, across and along strike, which supports the Inferred Mineral Resource classification at this drill spacing. The mineralisation is open to the north.

Balfour East and Damsite - Higher-Grade Manganese Mineral Resource Estimates

A high-grade subset of mineralisation has been delineated across the Balfour East and Damsite Mineral Resources and presented in Table 3. At an elevated cut-off grade of 11% Mn, the MRE totals **30 Mt @ 12.5% Mn.**

Table 3. Higher-grade Mineral Resource Estimate from Balfour East and Damsite deposits (BCA 100%), December 2023

Summary of Mineral Resources [1,3]							
Deposit	**Mineral Resource Category**	**Material (Mt)[2]**	**In Situ Mn (Mt)**	**Mn (%)**	**Fe (%)**	**Si (%)**	**Al (%)**
Balfour East	Inferred	25	3.1	12.4	8.8	18.8	4.9
Damsite	Inferred	5	0.7	12.8	9.8	17.0	4.0
Grand Total		**30**	**3.8**	**12.5**	**9.0**	**18.5**	**4.8**

Notes to Table 3:
(1)   Mineral resources reported at a cut-off grade of 11% Mn.
(2)   Appropriate rounding has been applied.
(3)   Refer to Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.

Balfour Manganese Field - Global Higher-Grade Manganese Mineral Resources

A higher-grade subset of mineralisation has been estimated across all of the Balfour Manganese Field Mineral Resources and presented in Table 4. At an elevated cut-off grade of 11% Mn, the Mineral Resource estimate totals **99 Mt @ 12.9% Mn for 12.8 Mt of contained manganese**.

As the Company progresses development and feasibility studies, having access to shallow, high-grade manganese Mineral Resources has the potential to add significant value for HPMSM feedstock material and manganese concentrates.

Table 4. Summary of Higher-grade Global Mineral Resources across the Balfour Manganese Field, December 2023

Summary of Mineral Resources [1-3]							
Deposit	**Mineral Resource Category**	**Material (Mt)**	**In Situ Mn (Mt)**	**Mn (%)**	**Fe (%)**	**Si (%)**	**Al (%)**
FB3[4]	Measured	14	1.9	13.2	11.5	18.2	4.5
LR1[4]	Measured	11	1.5	13.1	9.7	16.8	4.5
Total	**Measured**	**25**	**3.3**	**13.1**	**10.7**	**17.5**	**4.5**
KR1[5]	Indicated	15	2.0	13.1	9.8	18.0	6.2
FB3[4]	Indicated	10	1.3	12.7	10.8	18.1	4.8
LR1[4]	Indicated	5	0.6	12.9	9.9	6.1	1.6
Total	**Indicated**	**30**	**3.9**	**12.9**	**10.2**	**16.2**	**5.0**
KR2[5]	Inferred	14	1.9	13.6	11.2	18.2	4.6
Balfour East[5]	Inferred	25	3.0	12.4	8.8	18.8	4.9
Damsite[5]	Inferred	5	1.0	12.8	9.8	17.0	4.0
Total	**Inferred**	**44**	**5.7**	**12.8**	**9.7**	**18.4**	**4.7**
Grand Total		**99**	**12.8**	**12.9**	**10.1**	**17.5**	**4.8**

Notes to Table 4:
(1) Mineral resources reported at a cut-off grade of 11% Mn.
(2) Appropriate rounding has been applied.
(3) Refer to Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.
(4) Flanagan Bore deposits under which Black Canyon owns 75%
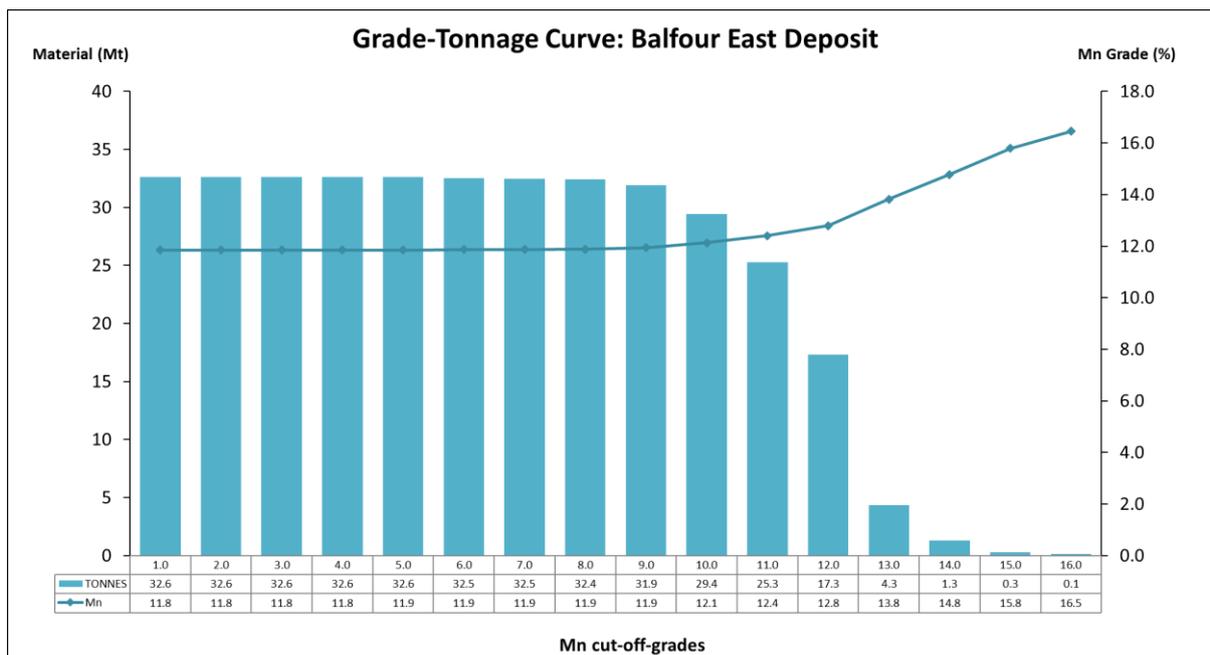(5) Deposit under which Black Canyon owns 100%

Grade-Tonnage Curve: Balfour East Deposit

Mn cut-off-grades	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
TONNES	32.6	32.6	32.6	32.6	32.6	32.5	32.5	32.4	31.9	29.4	25.3	17.3	4.3	1.3	0.3	0.1
Mn	11.8	11.8	11.8	11.8	11.9	11.9	11.9	11.9	12.1	12.4	12.8	13.8	14.8	15.8	16.5	

Figure 2. Balfour East Mineral Resource Estimate grade-tonnage curve

Grade-Mn Tonnage Curve: Balfour East Deposit

Mn cut-off-grades	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0
Mn Tonnes	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.8	3.6	3.1	2.2	0.6	0.2	0.0	0.0
Mn	11.8	11.8	11.8	11.8	11.9	11.9	11.9	11.9	11.9	12.1	12.4	12.8	13.8	14.8	15.8	16.5
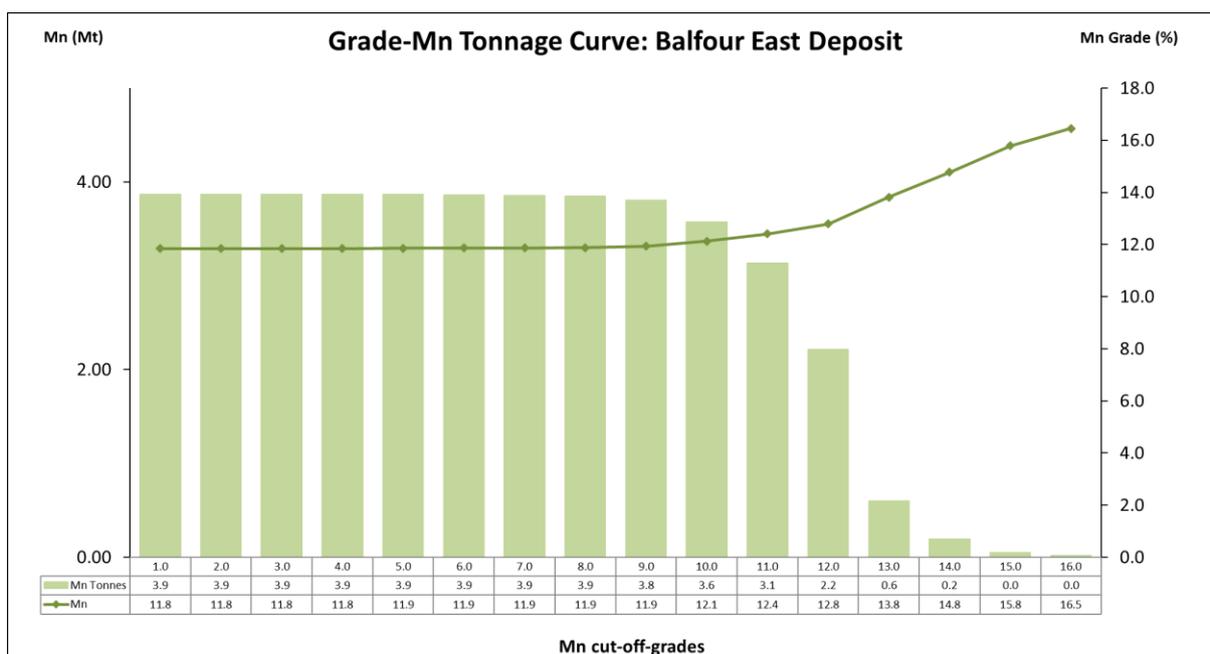
Figure 3. Balfour East Mineral Resource Estimate grade-contained metal tonnage curve
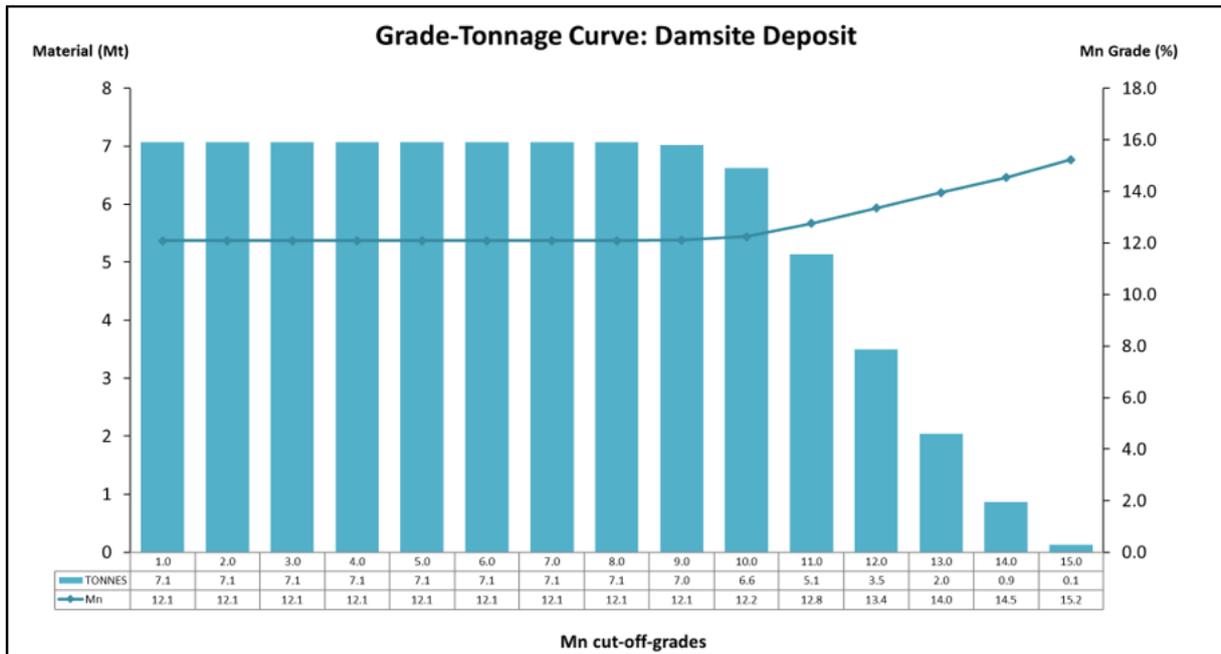
Figure 4. Damsite Mineral Resource Estimate grade-tonnage curve
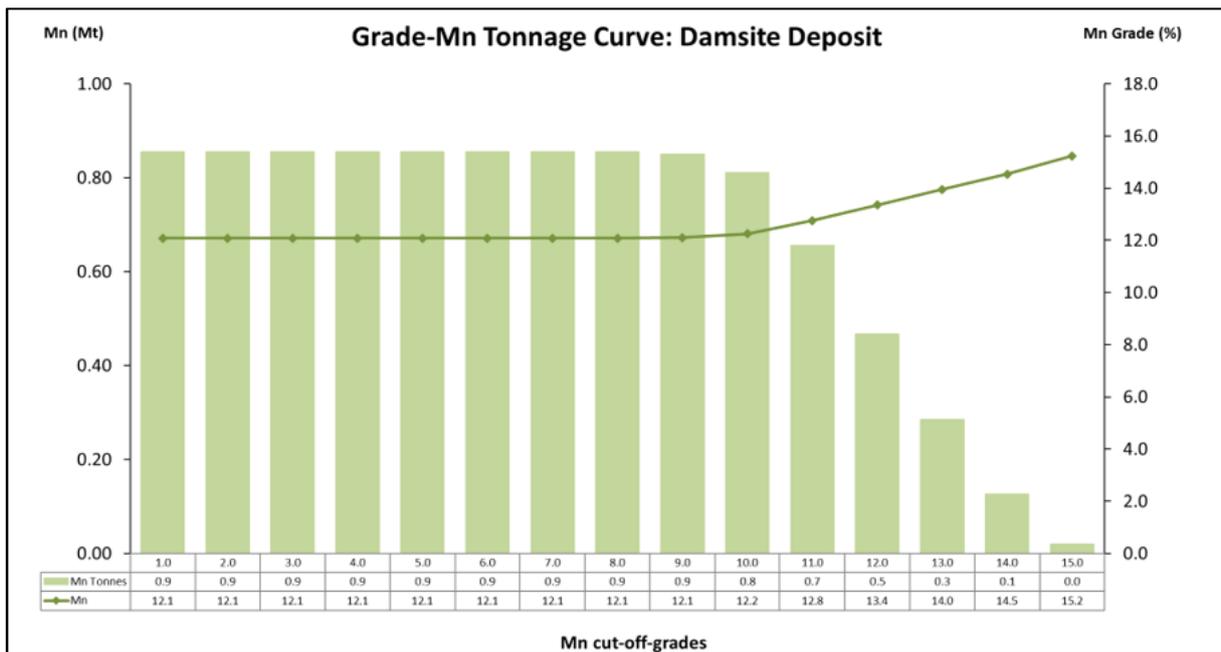
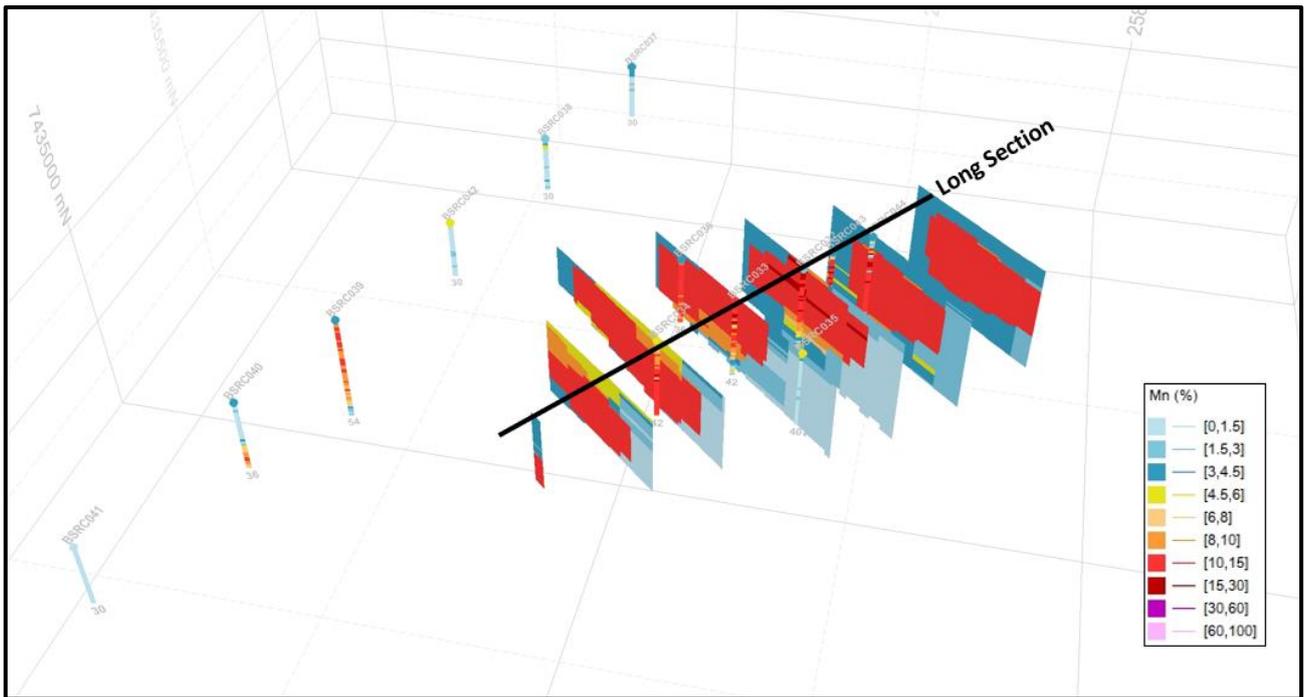**Figure 5. Damsite Mineral Resource Estimate grade-contained metal tonnage curve**

Figure 6. Oblique view of the Balfour East Inferred Mineral Resource Estimate model and coloured by Mn grade (%).
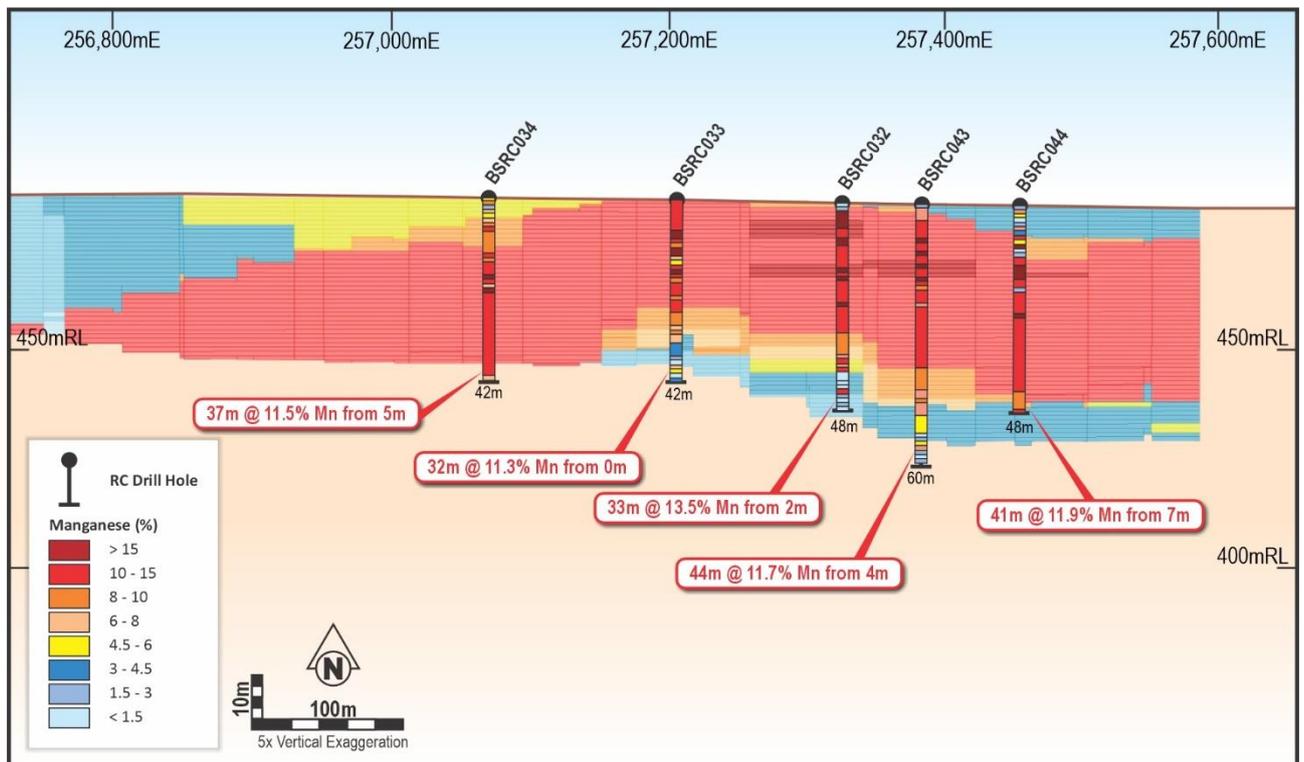

Figure 7. Long Section (looking northwest) showing the Balfour East Mineral Resource Estimate model cells and drill holes coloured by Mn grade (%).
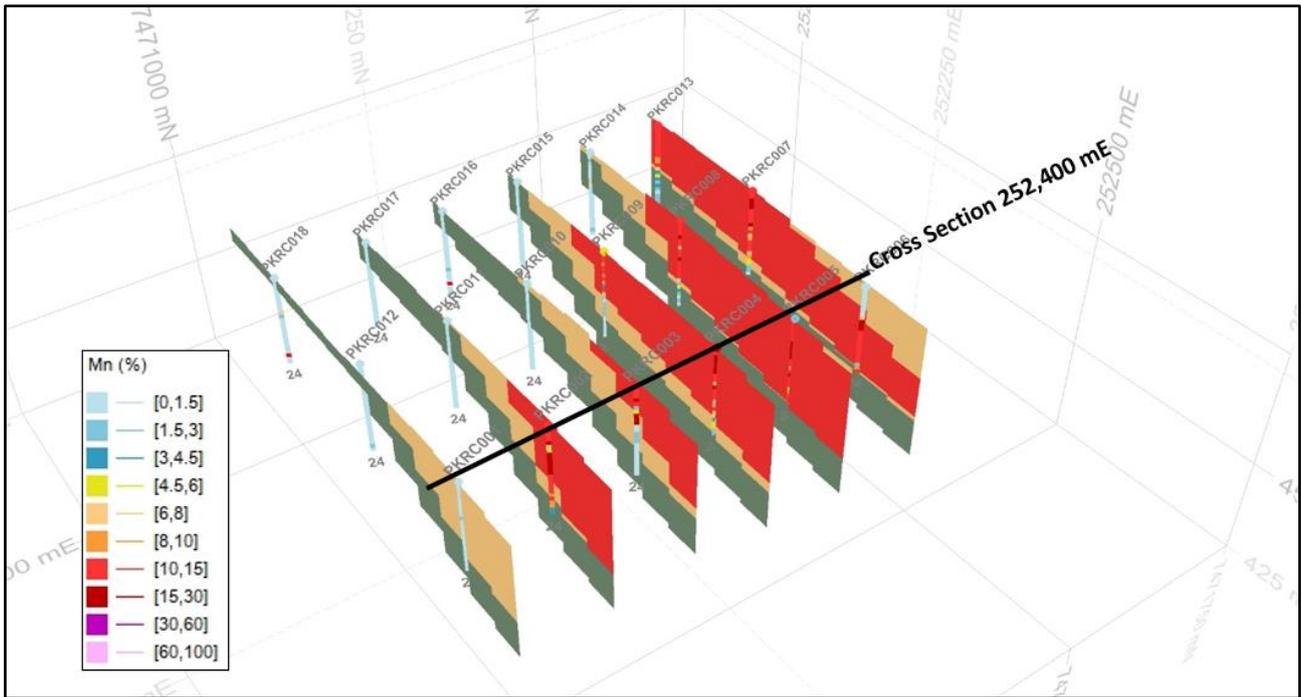
Figure 8. Oblique view of the Damsite Inferred Mineral Resource Estimate model coloured by Mn grade (%).
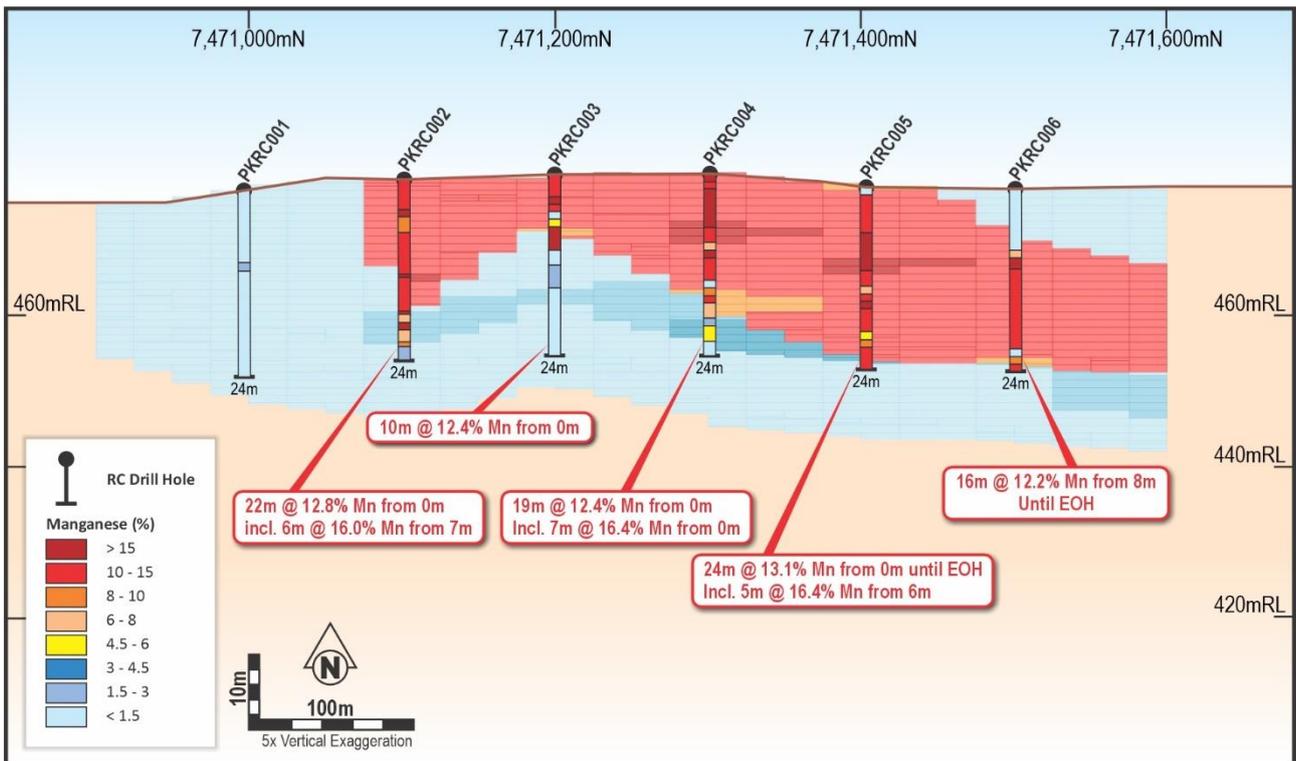
Figure 9. Cross section 252,400 mE (looking west) showing Damsite Inferred Mineral Resource Estimate model cells and drill holes coloured by Mn grade (%).

SUMMARY OF MINERAL RESOURCE ESTIMATE AND REPORTING CRITERIA

As per ASX Listing Rule 5.8 and the JORC (Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (2012 Edition)) reporting guidelines, a summary of the material information used to estimate the Mineral Resource is detailed below (for further detail please refer to JORC Table 1, Sections 1 to 3 included below in Appendix 1 & 2).

Geology and Geological Interpretation

The Capricorn Orogen of Western Australia is host to significant manganese deposits of varying sizes and styles which are typically constrained to the Mesoproterozoic Edmund-Collier Basin. The most prominent of these is the Butcherbird manganese operation hosted in the Ilgarari Formation of the Collier Group. The Balfour Manganese Project is located within the Proterozoic Manganese Group, which is part of the northern extent of the Collier Basin where it transitions to the Oakover Basin. Besides the Balfour Manganese Project there are also a number of recognised sedimentary Mn deposits within the Collier Basin including Flanagan Bore Project (BCA 75%), along with the well-known Woodie Woodie, Oakover, Nicholas Downs, Sixty Sixer, Balfour South and Ripon deposits. These deposits have a number of associated mineralisation styles such as supergene-enrichment, lateritic and fault hosted deposits.

The Collier Group and Manganese Group Mn deposits share similar qualities and are considered stratigraphic equivalents. In detail, the Collier Basin comprises a Mesoproterozoic basin consisting of sedimentary rocks of the Collier and Manganese Groups. The important manganese bearing units of the Collier Group are the Ilgarari Formation (shale) and the Backdoor Formation (siltstone). The manganese bearing units of the Manganese Group are the Balfour Formation (shale), the Woblegun Formation (siltstone) and underlying Enacheddong Dolomite. It unconformably overlies a portion of the Pilbara Craton, the Edmund Basin and Earaheedy Basin.

The local geology of the Balfour Manganese Project is dominated by shallow cover overlying shales from the Balfour Formation that overlie carbonate sequences ranging from calcareous shales and dolomite of the Enacheddong Dolomite. The sequence is also intruded by cross-cutting dolerite dykes and sills.

The geology at Balfour East and Damsite are similar and can be separated into a number of primary units:

a. The surface enriched manganese shales which are typically higher grade and maybe weakly to moderately ferruginised to some extent and occur from surface to 15 m depth.
b. A thick and widely distributed manganiferous shale unit that contains the supergene (manganese) enriched shale located between surface and 30 m depth.
c. At depth, the fresh manganiferous olive to green shales of the Balfour shale persist but have a lower manganese content.

At this early stage, the structural geometry of the Balfour East deposit is not well understood. The outcrop is 300 m long and is striking to the northeast. Magnetic and aerial EM surveys appear to confirm this strike, but further drilling is required to understand the mineralisation trends and dip. The mineralisation appears to be open in all directions except to the southeast where only one hole has been drilled.

The mineralisation at Damsite is interpreted to be shallowly dipping to the north and has a cross strike width of about 300m, a strike extent of at least 500 m and is open to the north. The drilling is closed off to the east where a north-south fault is interpreted to truncate the mineralised horizon. To the west, the mineralisation trends off the tenement and is no longer outcropping.

The Balfour East and Damsite mineral resources have been zoned into three domains, including basement. Zone 1 comprises unmineralised Balfour shale. Zone 2 is the higher-grade target mineralisation comprising brown-grey Balfour shale unit that is manganese enriched. The basement (Zone 200) has been used to control the interpolation of higher-grade Mn values into the un-sampled and low-grade area of the deposit. An oxidation and transition/fresh rock boundary has also been applied to the block model.

Drilling Techniques and Hole Spacing

The Mineral Resource estimate is based on drill programs designed and managed by Black Canyon staff and contractors during July 2023. The Company drilled data was tabulated into standard collar, lithology and assay Excel files that were provided to IHC Mining by Black Canyon who checked for out-of-range errors, inconsistencies and modified the header information prior to import into Datamine using standard routines. A list of drill hole collars and manganese intersects > 7% Mn are presented in Appendix 2.

At Balfour East the most significant drill results were received from a previously undrilled 300 m long, 125 m wide section of outcropping manganese mineralisation. The reconnaissance program was drilled along the long axis of the trend of the mineralisation using 100 m or 200 m centres. Single holes were drilled stepping out 200 m to the northwest and southeast to help determine width. The drill program was successful in extending the mineralisation from 300 m long in outcrop to 600 m based on the limited drilling completed to date.

The Damsite deposit was tested with three N-S oriented lines, 200m apart with holes spaced at 100m centres evaluating 400 m of strike.

Both the Balfour East and Damsite deposits were not drilled prior to Black Canyon's 2023 program.

Impact Drilling using a truck mounted 660 Schramm drill rig with an on board Sullair 1350/500 compressor completed the July 2023 drill program. The drill contractor used a conventional 5.25-inch RC hammer drill bit to drill the holes.

Sampling and Sub-sampling Techniques

The RC drilling completed by Black Canyon was logged and sampled on 1 m intervals (Figure 10). The samples were collected into calico bags from a side mounted adjustable cone splitter that was set to collect a 2 to 3 kg sample representing a 1 m interval, which was submitted for analysis. The samples in the calico bags were not weighed on site but were weighed after oven drying at the laboratory in Perth. The bulk reject was collected in a large green plastic sample bag and stored on site. Prior to the commencement of drilling each hole, the cone splitter was levelled to minimise sample bias. The cone splitter was regularly checked for obstructions, contamination and cleaned out when required. The drilling was predominantly dry.

Figure 10. July 2023 RC drill program at KR1 designed and managed by Black Canyon staff and consultants.

Sample Analysis Method - XRF

The elemental oxides were determined for the drill samples submitted by Black Canyon using whole rock fusion (XRF – fused disc) analysis completed by Bureau Veritas Minerals method XF103. The oxides analysed are outlined in Table 5 in addition to the conversion factor used to convert oxides assay results to elemental results.

Table 5. Chemical compound definitions and oxide conversion factor for the elements estimated.

COMPOUND CLASSIFICATION			CONVERSION		
Description	Formula		Element	Oxide	Factor
Aluminium oxide	Al2O3		Al	Al2O3	1.889
Barium oxide	BaO		Ba	BaO	1.116
Calcium oxide	CaO		Ca	CaO	1.399
Chromium (III) oxide	Cr2O3		Cr	Cr2O3	1.461
Iron (III) oxide	Fe2O3		Fe	Fe2O3	1.43
Potassium oxide	K2O		K	K2O	1.205
Magnesium oxide	MgO		Mg	MgO	1.658
Manganese oxide	MnO		Mn	MnO	1.291
Sodium oxide	Na2O		La	Na2O	1.348
Phosphate pentoxide	P2O5		P	P2O5	2.291
Silicon dioxide	SiO2		Si	SiO2	2.139
Strontium oxide	SrO		Sr	SrO	1.182
Titanium dioxide	TiO2		Ti	TiO2	1.668

Estimation Methodology

Drill hole sampling has remained consistent at 1 m intervals for all drill holes completed at Balfour East and Damsite completed by Black Canyon. This is considered good practice and provides both a consistent basis and adequate resolution for both geological interpretation and grade interpolation during the domaining and model build.

Inverse distance cubed (ID3) was used to interpolate grades and values into the block model. Part of the rationale for using ID3 is centred on the continuity of mineralisation for the manganese enriched Balfour shale both along strike, across strike and down hole.

Effectively, there is an averaging over the length of the sample interval down hole (in this case being 1 m), therefore there is already a dilution effect on any potential high-grade mineralisation leading to inverse distance being a less complex and more straight forward methodology.

An average density value of 2.52 was applied to the Zone 2 Inferred areas of the Balfour East and Damsite models based on previous down hole density gathered by ABIM Solutions Pty Ltd from the LR1 and FB3 mineral resource estimates. Density measurements were collected using a down hole probe that provided bulk density readings at regular intervals along the length of a borehole. The density values applied to the MRE at LR1 and FB3 were as follows: 2.38 for Zone 1, 2.52 for Zone 2 and 2.69 for basement.

It is recommended that future studies include down hole density surveys in the Balfour East and Damsite deposits that are currently informed by average density values by domain to provide additional support for potential future upgrades of material to higher confidence classifications.

Cut-off Grades

The Mineral Resources stated for Balfour East and Damsite deposits were estimated using a cut-off grade of 7% Mn. Higher-grade zones have also been estimated for Balfour East and Damsite deposits using a cut-off grade of 11% Mn. The selection of an Mn cut-off grade used for reporting the Mineral Resources was based on the experience of the Competent Person, by considering similar style deposits in comparable geological settings and by considering the continuity of mineralisation at the cut-off grade.

Classification Criteria

The JORC Code (2012) classification for the Balfour East and Damsite deposits has taken into consideration the drill hole spacing, down hole sampling support with respect to the mineralised domain (Zone 2) and assessment of grade continuity by use of variography.

The Balfour East and Damsite deposits have both been assigned a JORC classification of Inferred, which is supported by the following criteria:

- Regular drill hole average spacing that defines the Mn % distribution trends.
- Geological and grade continuity seen within the defined domains supported by geo-statistics.
- Domain controlled variography for Mn grade that supports the drill spacing for the assigned JORC classification; and
- Density values derived from previous down hole density surveys completed on similar manganese enriched shale mineralisation modelled from LR1 and FB3.

All drill hole sampling has been carried out at regular 1 m intervals down hole. The use of industry standard laboratory and the drilling, sampling and assaying procedures overall have fully supported the development of an Inferred Mineral Resource estimate. The QAQC data collected by Black Canyon to support the assaying process demonstrates satisfactory results, which are adequate for this stage of the project. The sample support and distribution of assays is to an appropriate level of density for the domain interpretation and the resultant JORC classification.

Mining and Metallurgical Methods and Parameters

No mining parameters have been applied to the Balfour East and Damsite deposits.

The Company has completed pre-feasibility level metallurgical testwork to successfully beneficiate ores from the LR1 and FB3 Mineral Resource areas using PQ drill core material.[2]

On the basis that the Balfour East and Damsite deposits are both manganese enriched shale hosted mineralisation styles, it is very likely that the deposits will process in a similar manner and produce a lump and fines product between 30 and 33% Mn concentrate.

A Scoping Study was completed by the Company on the Flanagan Bore Project in August 2022 [3] with the following key conclusions:

- Flanagan Bore Project can generate strong financial returns over a 20-year mine life at an average production rate of 1.8 Mtpa

- Project pre-tax NPV of A$134 M (8% discount rate) and pre-tax IRR of 67%

- Low development CAPEX of A$44 M with a payback period of less than 2 years

- LOM estimated Production Target of 36.1Mt @ 11.7% Mn mined from 104Mt @ 10.5% Mn Mineral Resource (Indicated)

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[2]ASX release 17/04/2023 Metallurgical Testwork Successfully Delivers Consistent Concentrate Grades Above 30% Mn

[3]ASX release 18/08/2022 Robust Economics, long life mine with low development CAPEX confirmed from the Flanagan Bore Scoping Study

- Conventional free dig mining with a very low strip ratio for the first 3 years and a LOM average strip ratio of 0.7:1 waste to ore

This Scoping Study was based on mining optimisations of 100% of the JORC-2012 Indicated Mineral Resource, comprising 104Mt @ 10.4% Mn.

On the basis the mineralisation styles are similar, and grade and tonnages are also highly comparable between the Balfour East/Damsite and LR1/FB3 deposits, the Company believes the Balfour East/Damsite deposits have the potential to be economically exploited.

Statement of Mineral Resources

The Mineral Resource estimates reported at a cut-off grade of 7% Mn for the Balfour East and Damsite deposits is presented in Table 6. This table conforms to guidelines set out in the JORC (2012). JORC Classification outlines and manganese grade distribution projected to surface are presented in Figures 11 and 12.

At a cut-off grade of 7% Mn the Balfour East and Damsite deposits have Inferred Mineral Resource of 40 Mt @ 11.9% Mn for contained Mn of 4.7 Mt.

Table 6. Summary of Mineral Resources for the Balfour East and Damsite deposits (BCA 100%) across the Balfour Manganese Field, December 2023

Summary of Mineral Resources[1-3]							
Deposit	Mineral Resource Category	Material (Mt)[2]	In Situ Mn (Mt)	Mn (%)	Fe (%)	Si (%)	Al (%)
Balfour East	Inferred	32	3.9	11.9	8.5	18.6	4.9
Damsite	Inferred	7	0.9	12.1	9.6	17.2	4.2
Grand Total		**40**	**4.7**	**11.9**	**8.7**	**18.4**	**4.8**

Notes to Table 6:
(1) Mineral resources reported at a cut-off grade of 7% Mn.
(2) Appropriate rounding has been applied.
(3) Refer to Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.
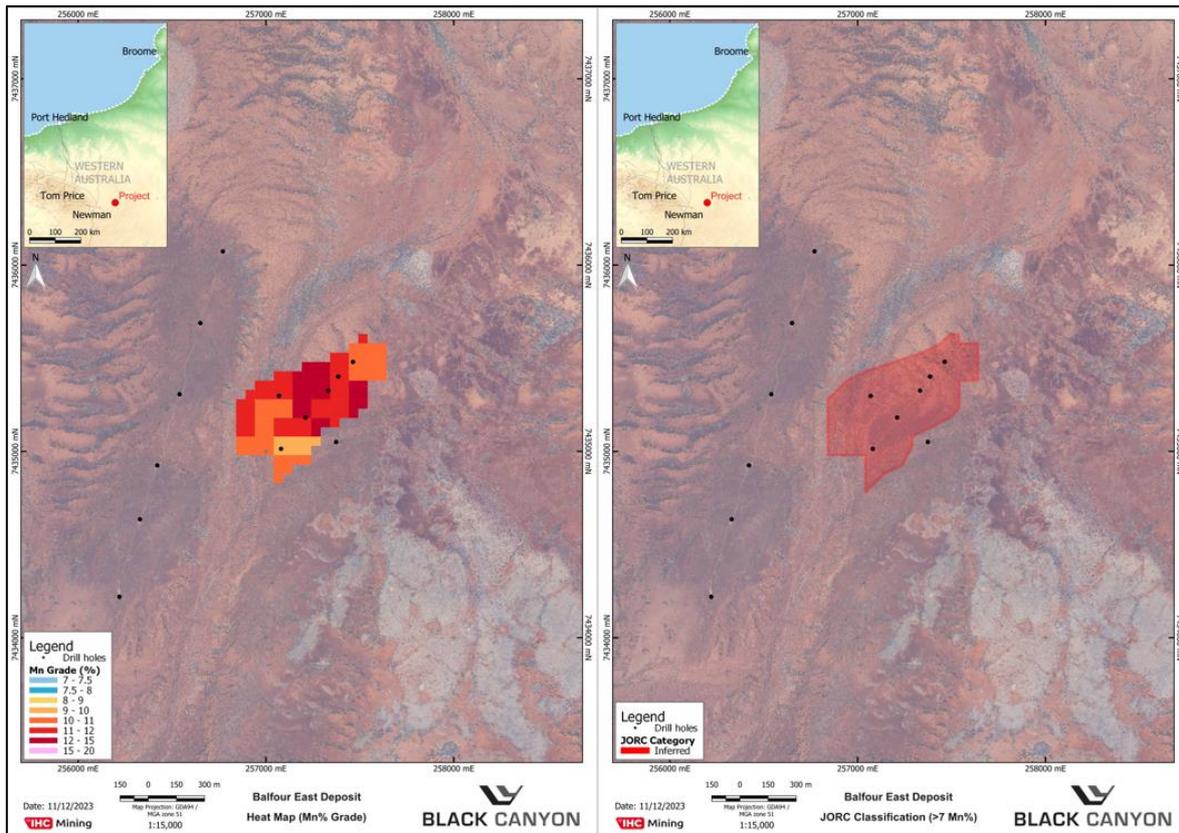
Figure 11. Balfour East deposit manganese grade distribution projected to surface and JORC Mineral Resource Classification (>7% Mn)
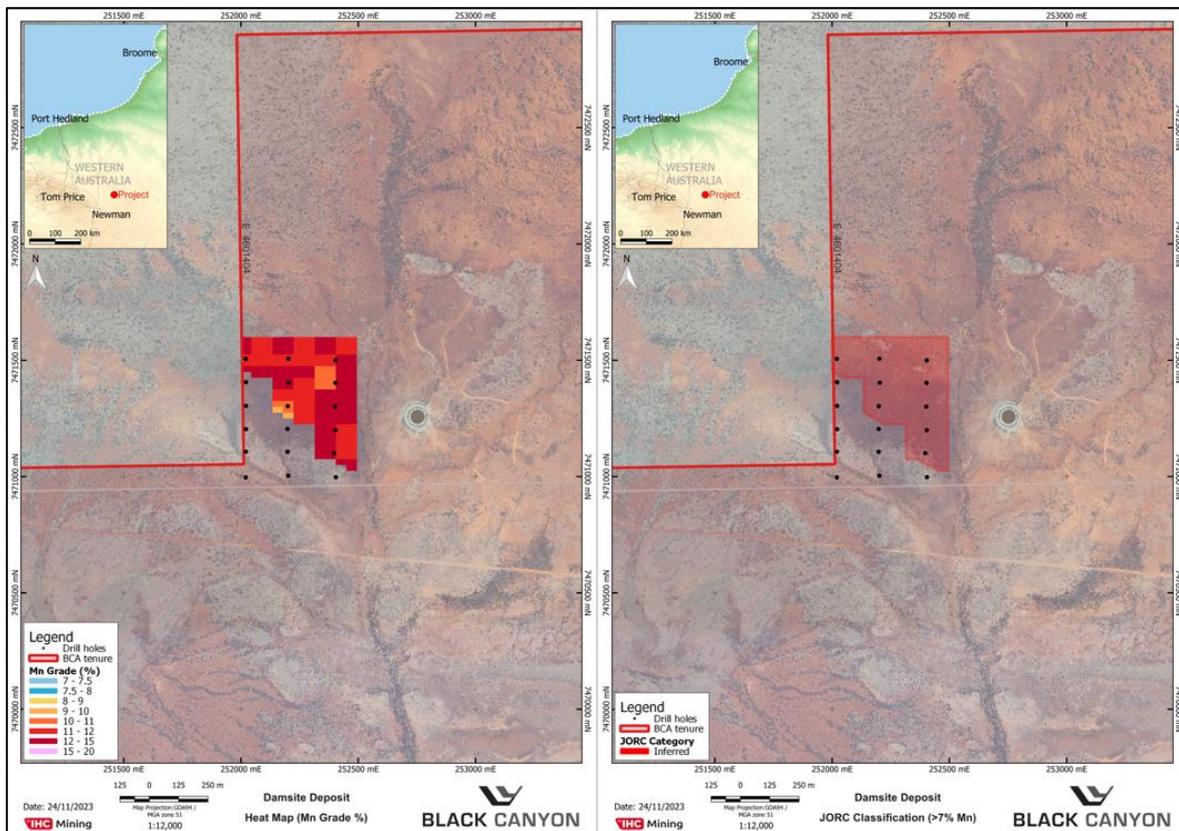

Figure 12. Damsite deposit manganese grade distribution projected to surface and JORC Mineral Resource Classification (>7% Mn)

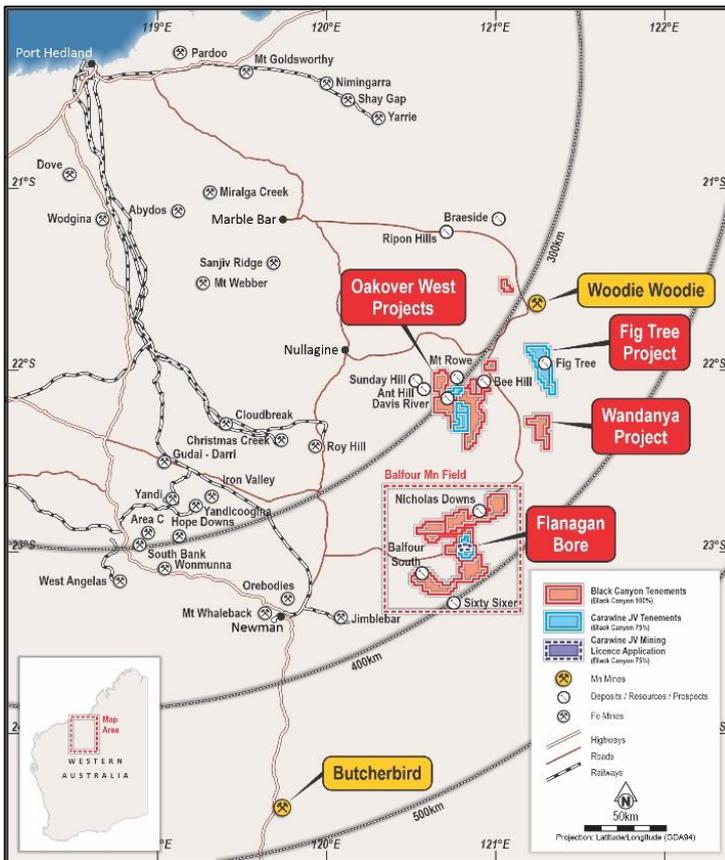This announcement has been approved by the Board of Black Canyon Limited.

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About Black Canyon

Black Canyon has consolidated a significant land holding totalling 2,400km² in the emerging Balfour Manganese Field and across the Oakover Basin, in Western Australia.

The potential for the Balfour Manganese Field is evident by the size of the geological basin, mineral resources identified to date, distance from port, potential for shallow open pit mining and a likely beneficiated Mn oxide concentrate product grading between 30 and 33% Mn. Black Canyon holds several exploration licenses 100% within the Balfour Manganese Field along with a 75% interest in the Carawine Joint Venture with ASX listed Carawine Resources Limited.

Manganese continues to have attractive fundamentals where it is essential and non-substitutable in the manufacturing of alloys for the steel industry and a critical mineral in the cathodes of Li-ion batteries.

Compliance Statements

Reporting of Exploration Results and Previously Reported Information

The information in this report that relates to Exploration Results is based on, and fairly represents, information and supporting documentation reviewed by Mr Brendan Cummins, Executive Director of Black Canyon Limited. Mr Cummins is a member of the Australian Institute of Geoscientists, and he has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activity which has been undertaken 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". Mr Cummins consents to the inclusion in this release of the matters based on the information in the form and context in which they appear. Mr Cummins is a shareholder of Black Canyon Limited.

The information in this report that relates to Mineral Resources is based on, and fairly represents, information and supporting documentation prepared by Mr Greg Jones, (Consultant to Black Canyon and Geological Services Manager for IHC Mining). Mr Jones is a Fellow of the Australasian Institute of Mining

and Metallurgy and has sufficient experience of relevance to the style of mineralisation and type of deposit under consideration, and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Jones consents to the inclusion in this report of the matters based on the information in the form and context in which they appear.

For further information, please refer to ASX announcements dated 17 May 2021, 10 June 2021, 7 July 2021, 5 October 2021, 4 January 2022, 8 February 2022, 21 February 2022, 2 March 2022, 23 March 2022,13 April 2022, 9 June 2022, 7 September 2022, 15 September 2022, 11 October, 21 & 24 November 2022, 5 December 2022, 28 December 2022, 14 February 2023, 27 March 2023, June 1 2023, June 14 2023, June 17 2023, July 14 2023, 23 August 2023, 5 September 2023, 26 September 2023, 12 October 2023 and 27 November 2023 and which are available from the ASX Announcement web page on the Company's website. The Company confirms that there is no new information or data that materially affects the information presented in this release that relate to Exploration Results and Mineral Resources in the original market announcements.

APPENDIX 1: JORC 2012: TABLE 1

Section 1 Sampling Techniques and Data		
Criteria	**Explanation**	**Comment**
Sampling techniques	*Nature and quality of sampling (eg 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.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	*Reverse circulation ('RC) was used as the primary drilling technique for the projects.* *RC cuttings were continuously sampled at 1 m intervals. All drill holes were sampled from surface to end of hole or depth of mineralisation.* *Drilling completed by Black Canyon have been used for the projects.* *All drill samples were logged for weathering, colour, lithology and mineralogy (+ %).* *RC samples were collected and placed in marked plastic bags in order at each collar position.* *Black Canyon drill samples were collected on 1m intervals, pulverised and submitted for 'LOI (TGA), Whole Rock by Fusion (XRF)' using assay code XF103 completed by Bureau Veritas Minerals.* *The 1m interval samples are considered industry standard and representative of the material being tested.*
Drilling techniques	*Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg 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).*	*Black Canyon drilling was completed using RC technique at 90-degree angle to collect 1 m samples as RC chips. Drill diameter is considered to be 5.25 inches as per standard RC sizing. A face sampling hammer was used to drill and sample the holes.* *The July 2023 drill campaign across of the projects contracted Impact Drilling.*

Criteria	Explanation	Comment
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. 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.	The 2023 drill campaign recorded satisfactory drill sample recovery. The sample weights were not recorded on site, but the samples were weighted once received at the laboratory. The samples weights show good overall recoveries with smaller samples weights recorded in the top 1-2m. During the 2023 drill program the 1m samples were collected from a levelled cone splitter affixed to the side of the drill rig. It is unlikely the lower weights encountered in the top 1-2m of the holes has biased the samples particularly with the style of mineralisation.
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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. The total length and percentage of the relevant intersections logged.	Geological logs exist for the 2023 drill programs. Logging of individual 1 metre intervals was completed using logging code dictionary which recorded weathering, colour, lithology and observed commentary to assist with determining manganese mineralisation. Logging and sampling has been carried out to industry standards to a level sufficient to support Indicated and Inferred Mineral Resource estimate. Drill holes were geologically logged in their entirety and a reference set of drill chips were collected in 20m interval chip trays for the 2023 drill program.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. 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. Whether sample sizes are appropriate to the grain size of the material being sampled.	Not applicable, no diamond drilling assays results have been used in this mineral resource estimate. The drill holes were completed using RC drilling technique and the 1m samples were dry split using an on-board cone splitter set to deliver a 2-3kg samples. This technique is considered best practice and appropriate for sample generation. Field duplicates were undertaken at a rate of 2 per 100 samples. The field duplicates were split from the cone splitter simultaneously. The samples sizes collected from the cone splitter are considered appropriate for the commodity being investigated.

Criteria	Explanation	Comment
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *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.* *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	*The 2023 drill samples were analysed at Bureau Veritas Minerals Perth, Western Australia utilising ore-grade XRF analysis which is considered industry standard for manganese ores.* *Elemental oxides assayed using XRF analysis include:* *Al_2O_3, BaO, CaO, Cr_2O_3, Fe, Fe_2O_3, K_2O, MgO, Mn, MnO, Na_2O, P_2O_5, SiO_2, SrO, TiO_2* *Oxides were converted to primary elements using standard conversion factors outlined by ALS.* *QA/QC was conducted by Black Canyon on the 2023 drill data by the following methods.* • *inserting 2 certified reference samples every 100* • *inserting 2 blanks every 100* • *conducting field duplicates at a rate of 2 in every 100* • *submitting a 200g pulped lab duplicate to a secondary laboratory for check XRF analysis at a rate of approximately 2 in every 100 samples for the 2023 drill program.* *The Company has reviewed the QAQC data and is satisfied that acceptable levels of precision and accuracy have been achieved through the sampling and assaying program and there is no evidence of bias. The data set is of a high standard and appropriate for use in Mineral Resource estimation*
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	*Validation of the drilling files (collar, assay and lithology) was undertaken by IHC Mining.* *All historic data was stored digitally using separate .txt files for collar, assay and lithology.* *Adjustment of elemental oxides to primary element was completed using well known conversion factors outlined by ALS.*
Location of data points	*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.* *Specification of the grid system used.* *Quality and adequacy of topographic control.*	*All drill holes in the project area were surveyed by handheld GPS with an accuracy of +/-5 m. The accuracy of the location of the drill collars is sufficient at this stage of exploration and resource development.* *Grid system used is WGS 84 / UTM zone 51S.* *IHC Mining deems all drill collar positions within the project areas to be satisfactory at this stage of exploration and to support the Mineral Resource estimate as reported.* *A 1m contour based topographic DTM surface was supplied by Black Canyon to IHC Mining and is considered satisfactory at this stage of exploration and to support the Mineral Resource estimate as reported.*

Criteria	Explanation	Comment
		It is recommended future drill programs use DGPS as drill collar survey pickup and LIDAR for development of a high-resolution topographic surface.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *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.* *Whether sample compositing has been applied.*	*The 2023 drilling completed at Balfour East The reconnaissance program was drilled along the long axis of the trend of the mineralisation using 100m or 200m centres. Single holes were drilled stepping out 200m to the northwest and southeast to help determine width. The drill program was successful in extending the mineralisation from 300m long in outcrop to 600m based on the limited drilling completed to date. The drill spacing was sufficient to establish grade and geological continuity.* *At the previously undrilled Damsite target it was tested with three N-S oriented lines, 200m apart with holes spaced at 100m centres evaluating 400m of strike.* *Variography has demonstrated current drill spacing supports an Inferred Mineral Resource classification.* *No sample compositing has been applied.*
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *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.*	*At Balfour East the geometry of the mineralisation is not fully understood with limited drilling, but a northeast strike is presumed where the main zone of mineralisation appears to trend to the southwest to hole BSRC039, which is located 650m away. The mineralisation appears to be open in all directions except to the southeast where only one hole has been drilled. The drill holes were completed at 90 degrees (vertical).* *At Damsite the drill lines were oriented north-south across the strike of the primary mineralisation trend. The drill holes were completed at 90 degrees (vertical) and the mineralisation is relatively flat lying.* *The drill grids are generally designed to be oriented both perpendicular to the planar orientation of the key mineralised horizon with no or limited bias introduced with respect to the strike or dip of the mineralised horizon.*
Sample security	*The measures taken to ensure sample security.*	*All samples were dispatched directly from site to at Bureau Veritas Minerals Perth, Western Australia. There has been no documentation stating any problems during sample transportation from site to at Bureau Veritas Minerals.* *Given the location of the project it is not considered high risk in the context of which samples were reported.*
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	*Senior Black Canyon geological personnel have reviewed the data prior to use in the Mineral Resource estimate. No independent audits have been undertaken as they are not considered to be necessary at this stage.*
Section 2 Reporting of Exploration Results		

Criteria	Explanation	Comment
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 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 drilling was undertaken on granted tenements E46/1404 and E46/1396* *The tenements and all mineral rights are 100% owned by Black Canyon Ltd.* *The tenements have Native Title Heritage Protection Agreements in place with the Karlka Nyiyaparli People that required a Heritage Survey to be undertaken prior to ground disturbing activities. Both Ethnographic and Archeologic surveys have been completed prior to commencement of site activities.* *There are no other known impediments to exploring the listed tenements*
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	*No other historic exploration has been completed on the tenement for manganese.* *Black Canyon completed a ground reconnaissance exercise in early 2023 to map the manganese enriched shales and determine down dip upside. The exercise proved significant manganese enriched shale throughout the project both as outcropping, sub-cropping and as substantial float material. The early reconnaissance groundwork by Black Canyon was used as a basis for the 2023 RC drilling programme.*
Geology	*Deposit type, geological setting and style of mineralisation.*	*The mineralisation is a sediment hosted supergene and weathered manganese enrichment derived from original high manganese content shales.* *The lithological sequence of the project principally consists of the Balfour Formation shales from the Proterozoic Manganese Group of the southern Oakover Basin which is overlain by Quaternary cover.* *The Balfour East and Damsite deposits can be separated into three primary units, the unmineralised Balfour shale, the mineralised Balfour shale and the lower basal shale unit. The unmineralised shale is brown grey in colour and the manganiferous shale unit contains a supergene enriched manganiferous horizon which exhibits thickness range between 5 m to30 m depth. The manganese layers are confined to distinct banding within the Balfour and there are also minor occurrences of interbedded red/brown shales intermixed with minor saprolitic clay bands.* *Further information is provided in the text of the release.*

Criteria	Explanation	Comment
Drill hole Information	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. If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	See drill hole location plans and figures in main body of the release. A complete listing of drill holes and their corresponding coordinates, elevation and depth and composited drill results using a cut-off grade of 7% Mn is listed in Appendix 2.
Data aggregation methods	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. 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. The assumptions used for any reporting of metal equivalent values should be clearly stated.	No grade cutting to assays has been undertaken. No aggregation of samples has been undertaken. Assays have been reported as oxides. Appropriate conversion from oxides to elements has been completed using standard conversion factors.

Criteria	Explanation	Comment
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').	The Balfour East and Damsite deposits are mostly flat lying exhibiting gentle dipping of mineralisation. At this initial stage drilling 90-degree (vertical) drill holes are considered appropriate.
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 body of release for maps and sections of drilling data.
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.	Exploration results are not being reported at this time.
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 results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Diamond Core drilling is planned to generate bulk sample for metallurgical testwork. In other projects managed by Black Canyon Scoping Level metallurgical testwork on similar manganese enriched shale mineralisation has demonstrated the amenability of the 10 to 15% Mn materials to upgrading with beneficiation to 30 to 33% Mn concentrates. The manganese mineralisation discovered at Balfour East and Damsite are all hosted in manganese enriched shale.
Further work	The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	IHC has been advised that Black Canyon will be undertaking feasibility related studies on developing the Balfour Mn Projects which includes a further metallurgical testwork to be followed by process equipment selection, design and engineering studies for manganese concentrates and downstream processing to HPMSM. It is recommended that the Company undertake infill drilling to improve the confidence of the Mineral Resource estimates and undertake a suitable topographic survey (preferably LiDAR) to improve accuracy of the topographic DTM surface used for modelling purposes.

Section 3 Estimation and Reporting of Mineral Resources

Criteria	Explanation	Comment
Database integrity	*Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* *Data validation procedures used.*	*Exploration data was provided by the Company to IHC Mining in the form of Excel datasheets relating to collar, lithology and assay data,* *Geological interpretations also provided by the Company to IHC Mining in the form of PowerPoint presentations for both Balfour East and Damsite deposits.* *Data in the form of individual Excel files ('.csv') was independently checked and reviewed by IHC Mining. Data review included:* • *Assay review for out-of-range values* • *Sample gaps* • *Overlapping sample intervals* *Checks of data by visually inspecting on screen (to identify translation of samples).* *Visual and statistical comparison was undertaken to check for validity of results.*
Site visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* *If no site visits have been undertaken indicate why this is the case.*	*Black Canyon Limited has completed a number of site trips between 2021 - 2023 to manganese targets across the Balfour Manganese Field prospects to map and visually inspect the drill targets. The Company managed and supervised the July 2023 RC drill program.* *This was completed by the Executive Director Mr Cummins who is a current member of the AIG. Mr Cummins is the Competent Person for the Exploration Results used as a basis for the Mineral Resource estimate. Mr Cummins conducted a site visit for the July 2023 drill program.* *The Competent Person Greg Jones has not yet conducted a site trip, however given his experience with the style of mineralisation in question, site visits to other manganese stratabound deposits, in addition to the extensive photography, videos and site visit reports, he considers this not to be of sufficient risk to prevent the estimation and classification of the Mineral Resource*
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* *Nature of the data used and of any assumptions made.* *The effect, if any, of alternative interpretations on Mineral Resource estimation.* *The use of geology in guiding and controlling Mineral Resource estimation.* *The factors affecting continuity both of grade and geology.*	*The geological interpretation was undertaken by IHC Mining and then validated using logging data, sampling information, geological surface mapping and observations. Three main domains were identified based on the manganese grades and lithological logging and these domains are noted as Zones. The Balfour East and Damsite deposits share similar geological characteristics and therefore consist of the same geological domains.* *Zones were identified as Zone 1, 2 and 200 in the resource estimation process. Zone 1 consists of brownish background low grade manganese Balfour shale. Zone 2 is the brownish grey target high grade manganese enriched Balfour shale which exhibits elevated grades typically above 5% Mn. Zone 200 is considered basement and is informed by a sharp reduction in Mn*

Criteria	Explanation	Comment
		grade at depth or by end of hole 'EOH' where drilling terminated in mineralisation. *It should be noted that Zone 2 contains minor instances of lower grade interbedded shales, and these have not been excluded given their thin and discontinuous nature. The occasional low grade Mn intercepts in Zone 2 are typically associated with Balfour shale lithology consisting of unmineralised interbedded shale or ferruginous material.* *The RC drilling also logged the weathering profile 'WEATH' for each 1 m down hole interval as oxidised 'OX' or fresh 'FR'. Blank intervals are considered to be a transition zone between oxidised and fresh material. This oxidised material was domained (refer 'WZONE' field in model whereby WZONE=2 is oxidised material and WZONE=1 is fresh material) to exclude all transitionary and fresh material.* *This approach of domaining by Mn grade 'ZONE' and oxidised material 'WZONE=2' provides a suitable approach for the company to report the resource model using a combination of the two fields.* *The mineralised zones generally strike northeast (45 degrees) for the Balfour East deposit forming a 250m long outcrop. The dominant northeast strike direction was confirmed by horizontal continuity and variography analysis. Airborne EM and magnetics also support this strike direction.* *The mineralisation at Damsite is interpreted to be shallowly dipping to the north and has a cross strike width of about 300m, a strike extent of at least 500 m and is open to the north. The Damsite mineralised zone most prominent strike direction at this time of exploration is north-west south-east (145 degrees) based on variogram analysis. The dominant strike direction is subject to change as further drilling will provide additional data points going forward.*
Dimensions	*The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	*Continuous manganese mineralisation was encountered at Balfour East with stronger zones of surface and shallow covered manganese enrichment intersected along 650 m of striking outcrop. The mineralised shale is between 400 m and 500 m wide, 2000 m long and extends 10 m to 35 m downhole with a small number of holes ending in mineralisation.* *The Damsite deposit mineralised shale is approximately 300 m wide and a strike extent of 500 m. Mineralisation extends 10 m to 24 m downhole with a number of holes ending in mineralisation.*

Criteria	Explanation	Comment
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. The assumptions made regarding recovery of by-products. Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. Any assumptions behind modelling of selective mining units. Any assumptions about correlation between variables. Description of how the geological interpretation was used to control the resource estimates. Discussion of basis for using or not using grade cutting or capping. The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	Inverse distance cubed (ID3) was used to interpolate grades and values into the block model. Part of the rationale for using ID3 is centred on the continuity of mineralisation for the manganese enriched Balfour shale both along strike, across strike and down hole. Ordinary Kriging was also used to interpolate Mn grade into the block model (defined as model field 'Mn_OK') to be used as a validation check against the inverse distance weighting technique. Effectively there is an averaging over the length of the sample interval down hole (in this case being 1 m) therefore there is already a dilution effect on any potential high-grade mineralisation leading to inverse distance being a less complex and more straight forward methodology. No mine production records recorded as this is not applicable at this stage of exploration. No assumptions have been made regarding recovery of by-products. The parent cell size used in the grade interpolation is typically half the average drill hole spacing on the X and Y axes. The parent cell size for this resource estimate is 100 x 100 x 1 (XYZ) for Balfour East deposit and 100 x 100 x 1 (XYZ) for Damsite deposit. No assumptions have been made regarding modelling of selected mining units. No assumptions have been made about correlation behind variables. Validation was undertaken by use of swathe plots, population distribution analysis and visual inspection. The geological zones 'ZONE' were used to control the grade interpolation. 'WZONE' was also used as a secondary constraint to report oxide material only (excluding fresh and transitionary material) as an internal company check. Oxidised material WZONE=1 and fresh material WZONE=2.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages were estimated on assumed dry basis. No account has been made nor current test work completed to determine moisture.

Criteria	Explanation	Comment
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	A cut-off grade of 7% Mn was used for reporting the Mineral Resource estimate. A high-grade zone was also reported using a cut-off grade of 11% Mn. No top or bottom cuts were used for grade interpolation.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	No specific mining method is assumed other than potentially open pit mining methods. No minimum thickness was assumed for reporting of the mineral resource.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	The material targeted for extraction is predominantly manganese hosted in manganese enriched shale. No specific detail and assumptions have been applied in the estimation for the current Mineral Resource and only allow for preliminary commentary with no detailed chemistry or sizing of mineral species. Based on another manganese hosted shale deposit currently being mined in the Pilbara it is reasonable to assume that the Balfour Manganese deposits also have reasonable prospect for economic extraction
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential	No assumptions have been made regarding waste products at this stage of exploration, however it is reasonable to assume the creation and storage of waste products on site will not be of great concern for future mining activities. No environmental concerns or issues were identified during this phase of exploration.

Criteria	Explanation	Comment
	environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	
Bulk density	*Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	*At this stage of exploration average density values were applied to Balfour East and Damsite deposits by geological domain based on the downhole geophysics work completed by Black Canyon during their previous exploration campaign for the FB3 and LR1 deposits. Details of the downhole geophysics program are described below:* *'A downhole geophysics program was completed by ABIM Solutions Pty Ltd who captured short (SSD) and long spaced density (LSD), caliper, magnetitic susceptibility and natural gamma during Black Canyons previous drilling programme for deposits FB3 and LR1. Density measurements were collected using a down hole logging probe that provides a continuous record of a formation's bulk density along the length of a borehole. A total of 85 holes representing approximately 28, 000 density measurements (0.1 m recordings) were surveyed across the LR1 and FB3 deposits access the RC holes drilled primarily in Dec 2021 which were spaced 200 x 100m apart'.* *Average densities by domain were calculated from this work and have been applied to Balfour East and Damsite deposits. These density values by domain are as follows:* *Zone 1 (unmineralised material) = 2.38* *Zone 2 (mineralised material) = 2.52* *Zone 200 (basement) = 2.69* *It is recommended that future studies include further down hole density work for each deposit.*
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.* *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* *Whether the result appropriately reflects the Competent Person's view of the deposit.*	*The Inferred classification for the Balfour East and Damsite deposits respectively was based on the following supporting criteria: drill hole spacing, down hole density spacing, appropriate grade constraints and domain controlled variography.* *The classification of the Inferred Resource was supported by all of the supporting criteria as noted above.* *As Competent Person Greg Jones considers that the result appropriately reflects a reasonable view of the deposit JORC categorisation.*
Audits or reviews.	*The results of any audits or reviews of Mineral Resource estimates.*	*No recent audits or reviews of the Mineral Resource estimate has been undertaken.*
Discussion of relative accuracy/ confidence	*Where appropriate a statement of the relative accuracy and confidence level in the Mineral*	*Variography was used to support the drill hole spacing for the selected JORC Classification.*

Criteria	Explanation	Comment
	Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	*Validation of the model vs drill hole grades was carried out by direct observation and comparison of the results on screen.* *The Mineral Resource statement is a global estimate for the entire known extent of the Balfour East and Damsite deposits within the tenement area.* *There has been no production to date.*

APPENDIX 2: SUMMARY DRILL HOLE COLLAR AND COMPOSITES (>7% Mn)

Hole id	East (WGS84)	North (WGS84)	RI	Dip	Azimuth	Deposit	From depth (m)	To depth (m)	Interval (m)	Mn %	Fe %	Al %	Si %	Zone
BSRC032	257332	7435327	465	-90	360	Balfour East	2	35	33	13.5	8.7	5.3	19.5	2
BSRC033	257210	7435182	478	-90	360	Balfour East	0	13	13	13.3	8.9	4.9	21.2	2
BSRC033	257210	7435182	461	-90	360	Balfour East	15	32	17	10.5	6.8	5.2	18.9	2
BSRC034	257080	7435014	483	-90	360	Balfour East	1	2	1	9.2	3.9	2.9	11.5	1
BSRC034	257080	7435014	463	-90	360	Balfour East	5	39	34	11.6	8.9	4.5	16.9	2
BSRC034	257080	7435014	444	-90	360	Balfour East	39	42	3	10.4	6.5	4.3	15.2	200
BSRC036	257069	7435298	465	-90	360	Balfour East	2	36	34	11.3	7.5	4.4	16.2	2
BSRC039	256421	7434925	462	-90	360	Balfour East	1	46	45	9.9	7.1	4.7	16.8	2
BSRC040	256329	7434636	457	-90	360	Balfour East	26	36	10	8.9	7.6	4.8	16.3	2
BSRC043	257385	7435402	481	-90	360	Balfour East	2	3	1	7.4	10.5	5.5	24.1	2
BSRC043	257385	7435402	470	-90	360	Balfour East	4	23	19	13.7	9.1	4.7	18.9	2
BSRC043	257385	7435402	448	-90	360	Balfour East	24	48	24	10.4	6.4	4.9	17.3	2
BSRC043	257385	7435402	427	-90	360	Balfour East	56	57	1	7.1	6.6	6.4	23.0	200
BSRC044	257463	7435481	478	-90	360	Balfour East	5	6	1	7.3	7.4	6.8	24.9	1
BSRC044	257463	7435481	476	-90	360	Balfour East	7	8	1	13.9	7.4	5.9	20.8	2
BSRC044	257463	7435481	474	-90	360	Balfour East	9	10	1	15.4	11.7	5.6	17.9	2
BSRC044	257463	7435481	468	-90	360	Balfour East	12	19	7	15.3	10.7	5.1	19.1	2
BSRC044	257463	7435481	449	-90	360	Balfour East	20	48	28	12.1	8.5	4.7	17.3	2
PKRC002	252397	7471101	476	-90	360	Damsite	0	5	5	14.0	11.3	3.0	15.5	2
PKRC002	252397	7471101	464	-90	360	Damsite	7	22	15	13.3	9.5	4.0	16.1	2
PKRC003	252403	7471200	476	-90	360	Damsite	0	5	5	13.6	9.2	4.0	19.1	2
PKRC003	252403	7471200	470	-90	360	Damsite	7	10	3	16.2	10.1	4.2	18.1	2
PKRC004	252401	7471301	472	-90	360	Damsite	0	14	14	14.2	10.1	3.8	17.0	2
PKRC004	252401	7471301	462	-90	360	Damsite	15	19	4	8.8	7.9	5.0	18.3	2
PKRC005	252402	7471403	467	-90	360	Damsite	1	19	18	14.0	9.8	3.3	14.2	2
PKRC005	252402	7471403	455	-90	360	Damsite	20	24	4	11.3	9.6	3.4	13.8	2
PKRC006	252403	7471500	462	-90	360	Damsite	8	21	13	13.4	9.3	3.4	14.1	2
PKRC006	252403	7471500	454	-90	360	Damsite	22	24	2	10.3	8.2	4.0	14.6	2
PKRC007	252202	7471507	470	-90	360	Damsite	0	19	19	11.9	9.9	4.3	17.7	2
PKRC008	252203	7471404	476	-90	360	Damsite	0	7	7	14.0	9.4	3.4	16.4	2
PKRC008	252203	7471404	467	-90	360	Damsite	8	16	8	13.3	10.2	4.3	17.9	2
PKRC009	252199	7471303	474	-90	360	Damsite	1	9	8	10.6	9.1	5.0	20.6	2
PKRC009	252199	7471303	468	-90	360	Damsite	10	12	2	11.3	8.5	6.1	21.9	2
PKRC013	252020	7471506	473	-90	360	Damsite	0	12	12	11.9	10.7	5.1	20.5	2
PKRC018	252020	7470997	467	-90	360	Damsite	9	10	1	7.0	3.1	8.0	26.1	200