



BLACK CANYON

ASX Announcement



13 April 2022

ASX:BCA

Mineral Resource Estimate at Flanagan Bore Exceeds 100 Mt

HIGHLIGHTS

- Global Indicated Mineral Resource estimate of 104 Mt @ 10.5% Mn containing 11Mt of manganese at the FB3 and LR1 deposits, Flanagan Bore, comprising;
 - A maiden Mineral Resource estimate at FB3 of 67 Mt @ 10.4% Mn (Indicated)
 - An expanded Mineral Resource estimate at LR1 of 37 Mt @ 10.8% Mn (Indicated), representing a 147% increase over the previous, maiden LR1 Mineral Resource¹
- Significant high-grade zones identified totalling 33 Mt @ 12.8% Mn across the FB3 and LR1 deposits
- The updated Mineral Resource estimate adds 89 Mt of mineral resource containing 9 Mt of manganese
- Geological and grade models show exceptional continuity between drill holes and supports the higher confidence Indicated Mineral Resource classification at both deposits
- The Mineral Resource estimate highlights significant scale, well defined grade domains and high-grade manganese mineralisation commencing from surface
- The updated Indicated Mineral Resource estimate provides a robust foundation for use in scoping level and potential detailed development studies into the future
- Metallurgical test work continues with the delivery of drill core composites for ore sorting trials at Steinert Global, with results expected in May 2022. Preparing samples for heavy liquid separation (HLS) test work by the end of the month.

Australian manganese explorer, Black Canyon Limited (**Black Canyon** or the **Company**) (ASX:BCA), is pleased to announce a significant increase in the Mineral Resource tonnage and contained manganese at its Flanagan Bore Project in the eastern Pilbara region of Western Australia.

The previous Mineral Resource at the FB1 deposit at Flanagan Bore comprised 15Mt @ 11.3% Mn (Inferred) has been significantly expanded and upgraded to **104 Mt @ 10.5% Mn (Indicated)** containing **11 Mt of manganese** (Table 1). This represents an substantial increase of 89 Mt of total tonnage and 9

¹ ASX:BCA Announcement 5 October 2021 - Maiden Manganese Resource for LR1 Prospect at Flanagan Bore

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Mt of contained manganese from the previous Mineral Resource or a 580% increase in Mineral Resource tonnes.

The Mineral Resources defined at LR1 and FB3 have been estimated based on drill assay information received from the 4,312 m reverse circulation (RC) drill program completed in December 2021, in addition to 516 m of historic RC drilling from 2012.

Flanagan Bore is part of the Company's Carawine JV and is subject to a farm-in and joint venture agreement with Carawine Resources Ltd (ASX:CWX). Having earned a 51% interest, Black Canyon is now earning up to 75% in the Carawine Project tenements by sole-funding an additional \$2.5m of exploration expenditure. The Flanagan Bore project is located approximately 400 km southeast of Port Hedland.

Black Canyon Executive Director, Brendan Cummins, said: *“The Company is very fortunate that from our first drill program at Flanagan Bore, we have been able to deliver a large-scale, high quality manganese Mineral Resource. In my experience, this is uncommon and is testament to the robustness of the mineralisation we have discovered at FB3 and LR1. Defining an Indicated Mineral Resource of greater than 100Mt has more than exceeded our expectations at such an early stage for the project.”*

“In addition the outcropping higher-grade zones averaging 12.8% Mn within this Mineral Resource exhibit impressive geological and grade continuity, both of which are extremely positive factors for resource optimisation and potential mining scenarios. The large tonnage resource also enables the Company to consider using elevated cut-off grades to increase the mine feed grade whilst maintaining sufficient tonnage for a long-life mining operation.”

“There also remains further upside at Flanagan Bore with several other manganese targets that have only been partly tested or remain untested such as FB1, FB5 and FB6 with the potential to deliver significant additional tonnage to the project.”

Table 1. Global Mineral Resource estimate for the FB3 and LR1 deposits at Flanagan Bore April 2022*

Summary of Mineral Resources ⁽¹⁾								
Deposit	Mineral Resource Category	Material (Mt)	In Situ					
			Mn (Mt)	BD (gcm3)	Mn (%)	Fe (%)	Si (%)	Al (%)
FB3	Indicated	67	7	2.4	10.4	10.3	17.6	4.5
LR1	Indicated	37	4	2.4	10.8	8.9	18.3	5.0
Grand Total		104	11	2.4	10.5	9.8	17.9	4.7

Notes:
 (1) Mineral resources reported at a cut-off grade of 7% Mn

* refer below, JORC Table 1, Sections 1 to 3 and Appendix 1-3 for further details

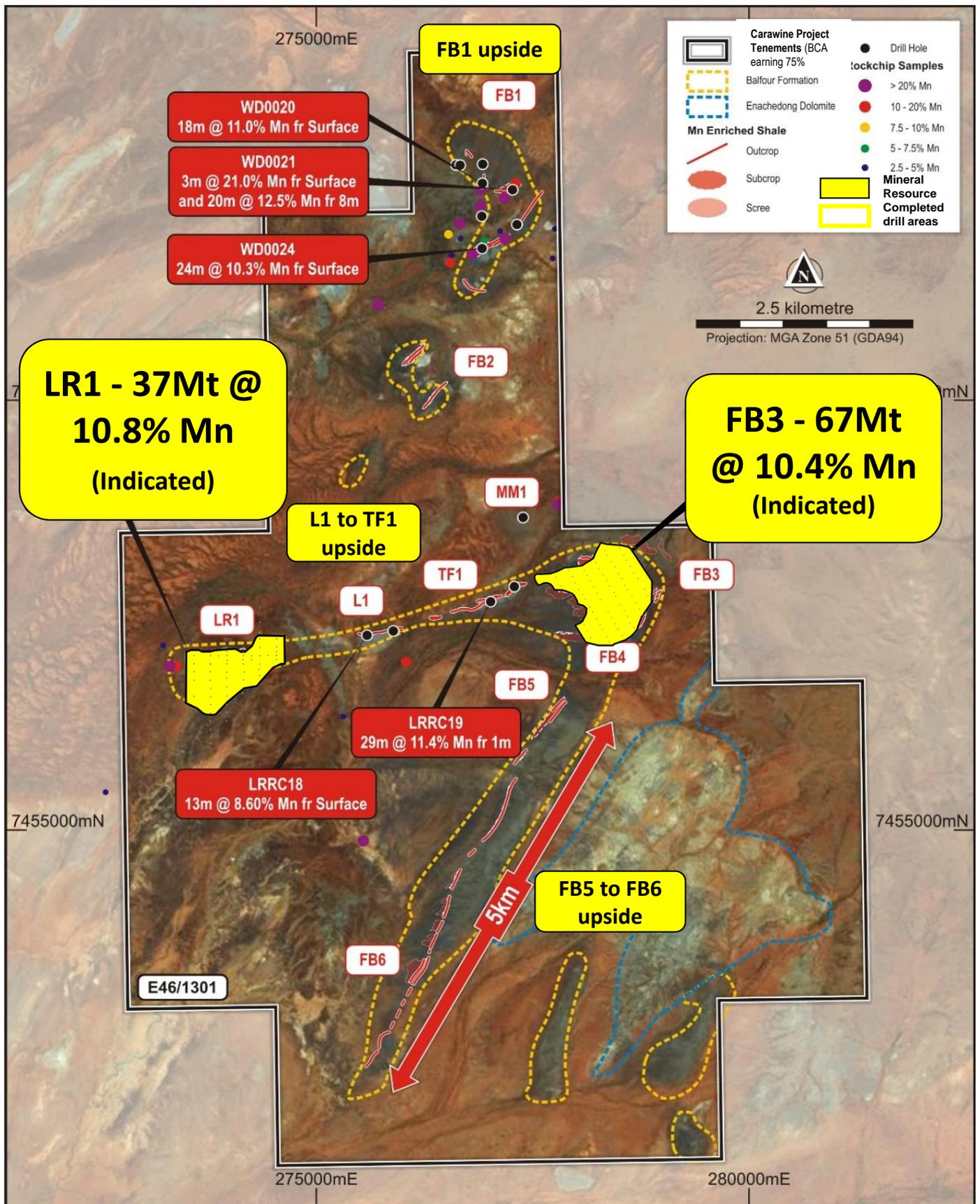


Figure 1. Flanagan Bore Project - FB3 & LR1 Mineral Resource outlines and future resource potential upside at FB1, L1, TF1, FB5 and FB6 (Black Canyon (51%) earning up to 75%)

FB3 and LR1 Global Mineral Resource Estimate

Historic drill (RC) results from the LR1 Prospect and new RC drill assay information from the LR1 and FB3 deposits have been reviewed and validated for the Mineral Resource estimate. The work was supervised and conducted by Greg Jones, a specialist consultant in mineral resources, metallurgy and processing technology and is employed by IHC Mining (refer to Competent Person statement).

Table 1 displays the Global Mineral Resource estimates for the FB3 and LR1 deposits. The grade tonnage curves are presented in Figures 2 to 5 and an oblique and cross-section views of the FB3 and LR1 deposits are presented in Figures 6 to 9. Supporting JORC tables are presented in Appendix 1, 2 and 3.

The Mineral Resources at LR1 and FB3 are outcropping, and form pronounced topographic features. The Mineral Resource estimate is based on drill holes on traverses completed on 200 m spaced lines at 100 m drill hole centres. At FB3, a total of 76 holes for 2,016 m metres were drilled averaging 27 m depth, whilst at LR1, a total of 47 holes for 2,296 m averaging 48 m depth were completed. The drill data shows manganese grades are strongly continuous downhole and across strike, which has significantly improved the confidence in the estimate and supports the Indicated Mineral Resource classification. High-grade manganese mineralisation is encountered from surface at FB3 and LR1 with zones of continuous mineralisation typically between 20 to 40m thick.

High-Grade Manganese Mineral Resource

A shallow, high-grade subset of mineralisation has been delineated across the LR1 and FB3 Mineral Resources and presented in Table 2. At an elevated cut-off grade of 11% Mn the Mineral Resource estimate totals 33 Mt @ 12.8% Mn at an Indicated level of classification. This higher-grade material could be capable of supporting a substantial, multi-decade mining operation at Flanagan Bore with potential to also grow the resource base in the region.

As the Company progresses the Scoping Study, the proposition of having immediate access to high grade manganese Mineral Resources from surface will be evaluated and potentially add significant value.

Table 2. High-grade Zone Mineral Resource estimate from the FB3 and LR1 deposits at Flanagan Bore April 2022*

Summary of Mineral Resources ⁽¹⁾								
Deposit	Mineral Resource Category	Material (Mt)	In Situ Mn (Mt)	BD (gcm3)	Mn (%)	Fe (%)	Si (%)	Al (%)
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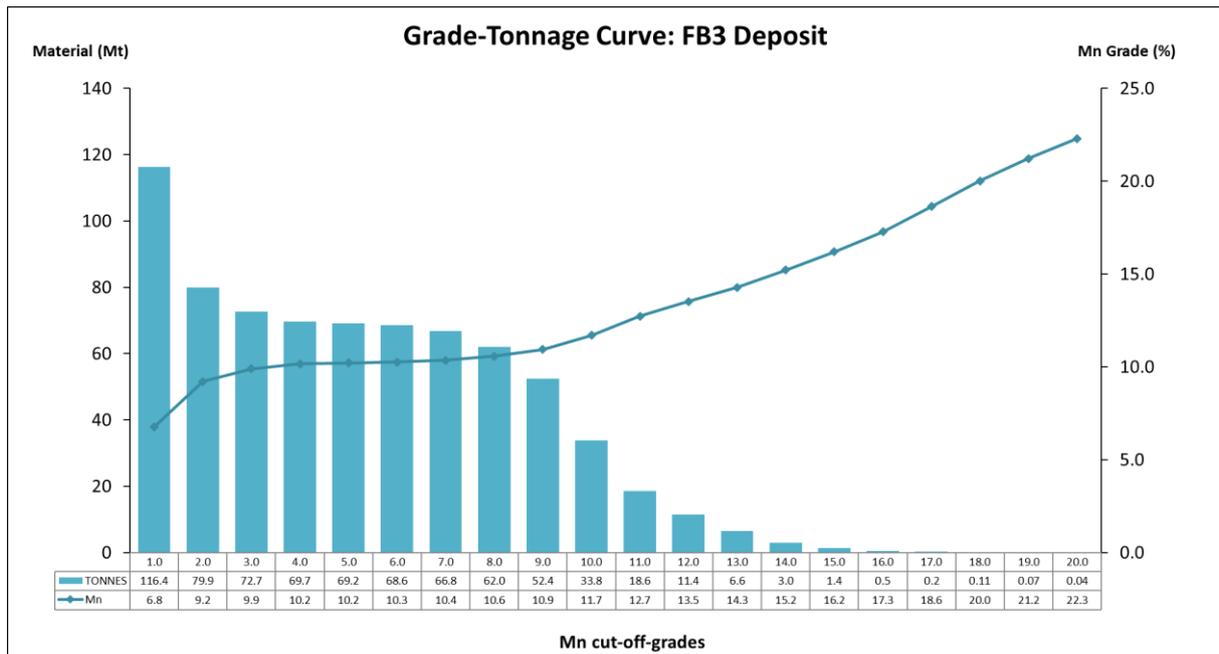


Figure 2. FB3 Mineral Resource grade-tonnage curve

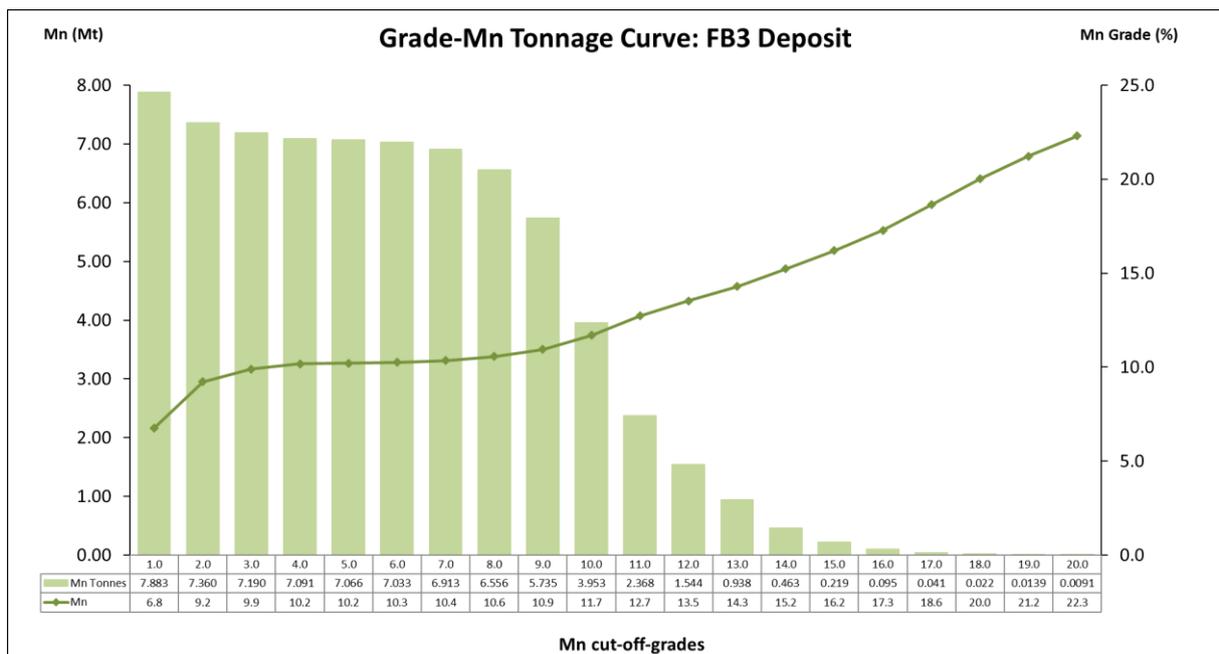


Figure 3. FB3 Mineral Resource grade-contained metal tonnage curve

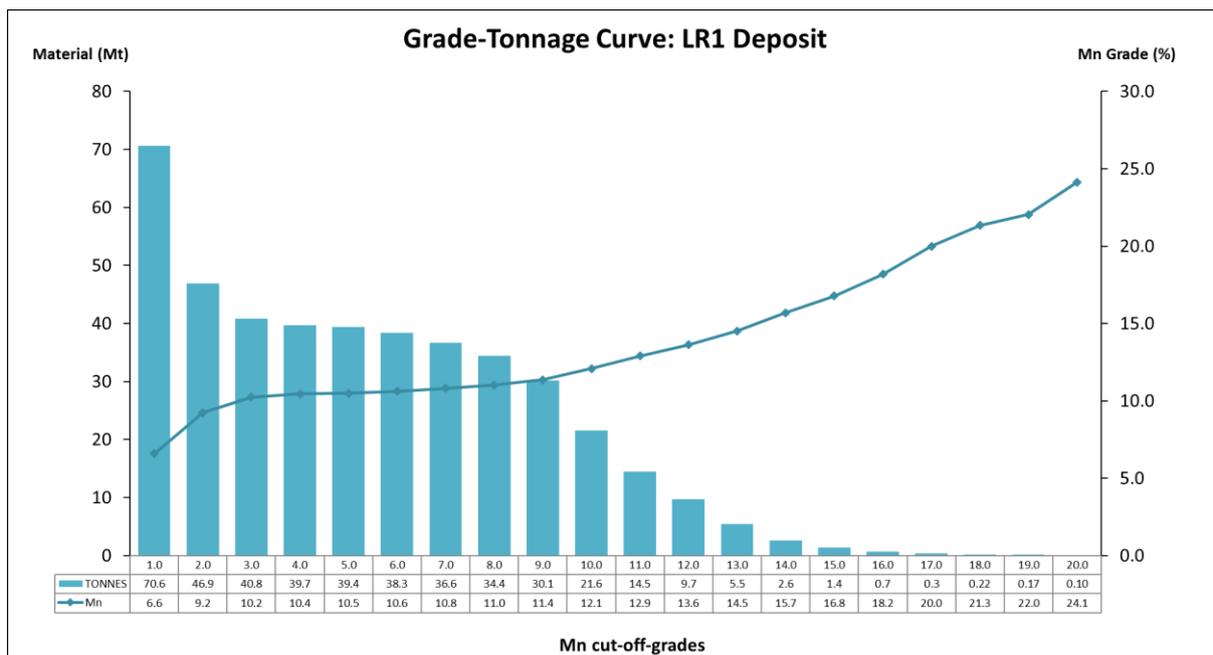


Figure 4. LR1 Mineral Resource grade-tonnage curve

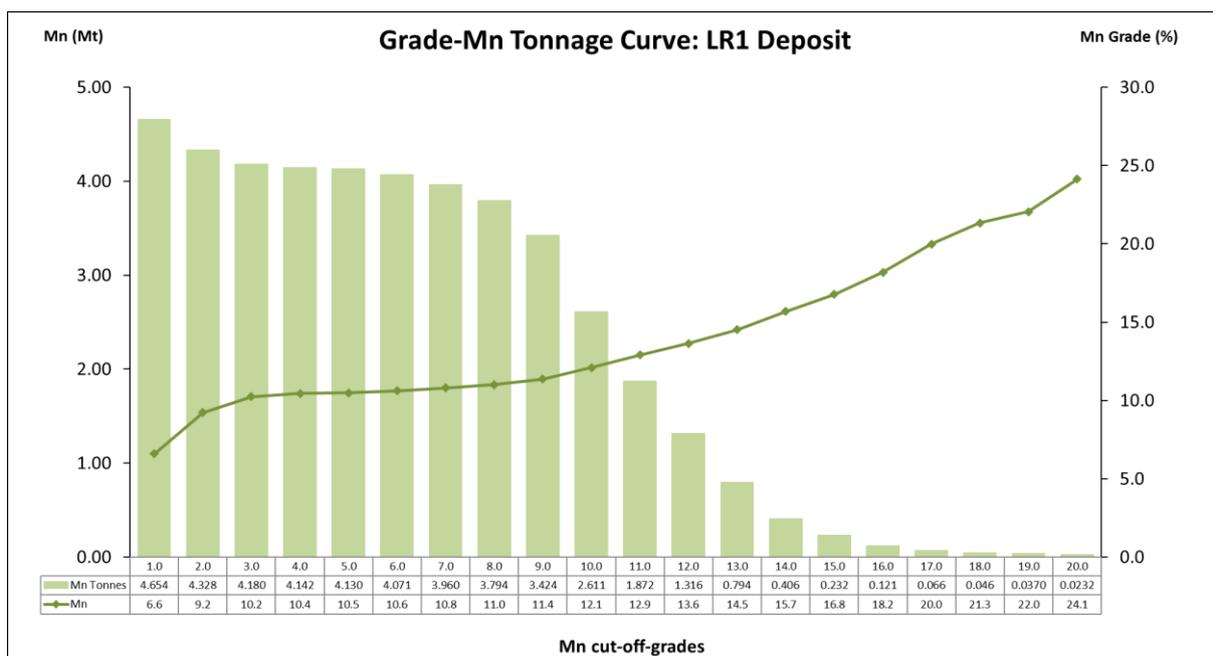


Figure 5. LR1 Mineral Resource grade-contained metal tonnage curve

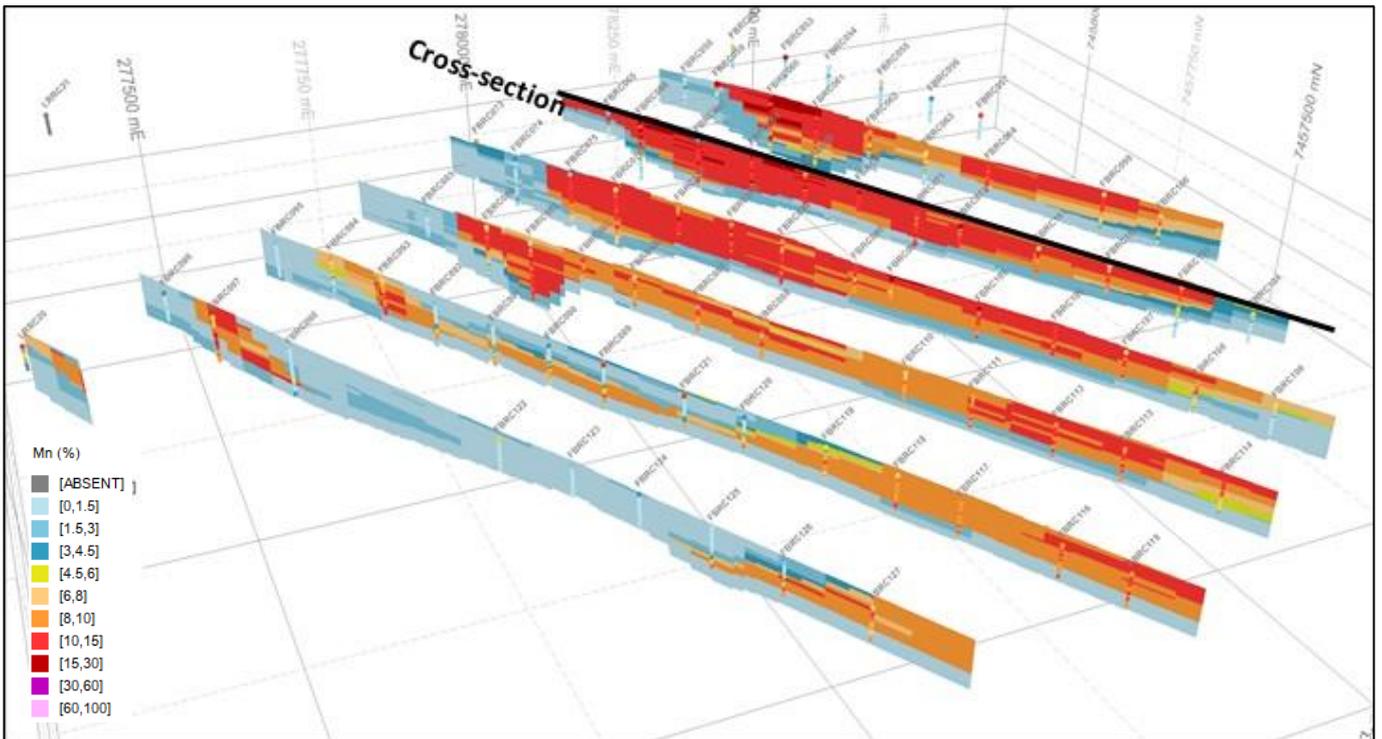


Figure 6. Oblique view of the Maiden FB3 Mineral Resource model looking northeast and coloured by Mn grade (%) (2x vertical exaggeration). (Labels represent drill holes used in the estimate)

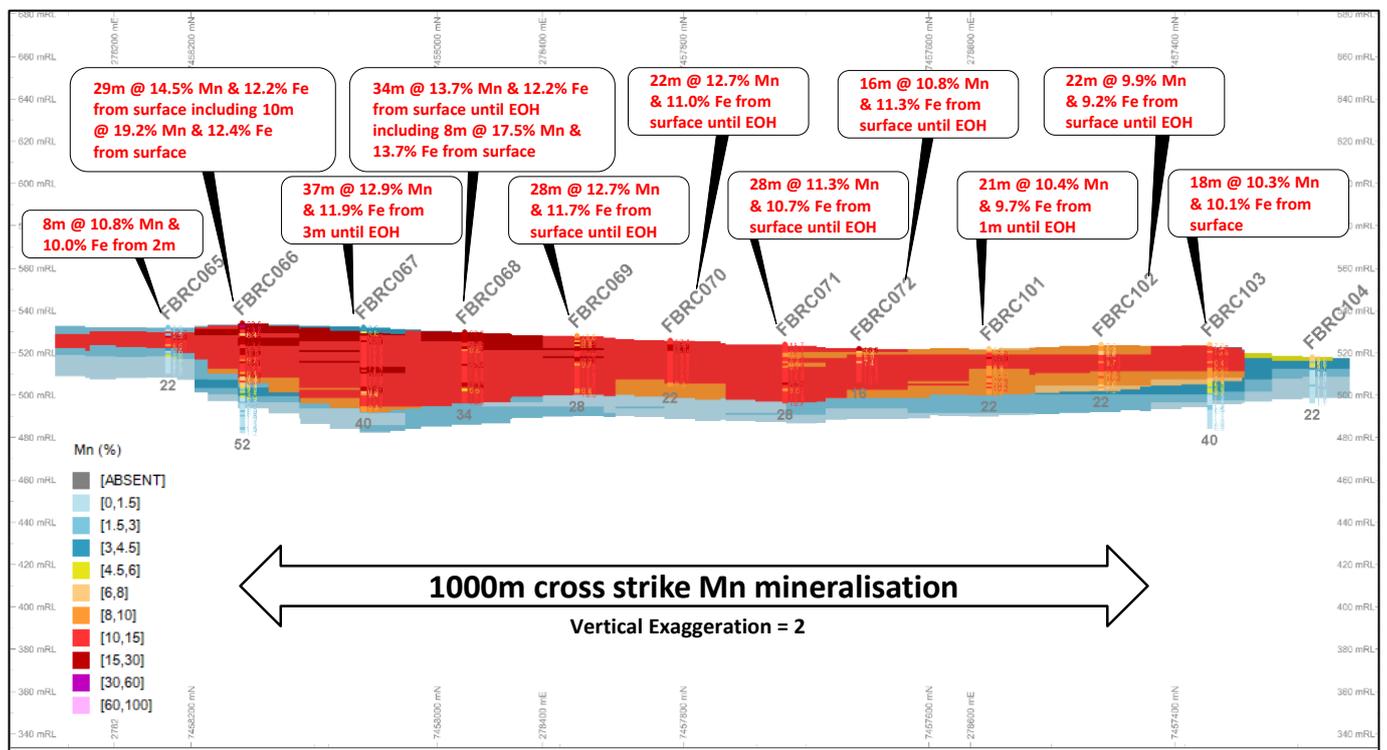


Figure 7. Type section 278,450 mE mid-point (looking north-east) showing FB3 Mineral Resource model cells and drill holes coloured by Mn grade (%) (2x vertical exaggeration)

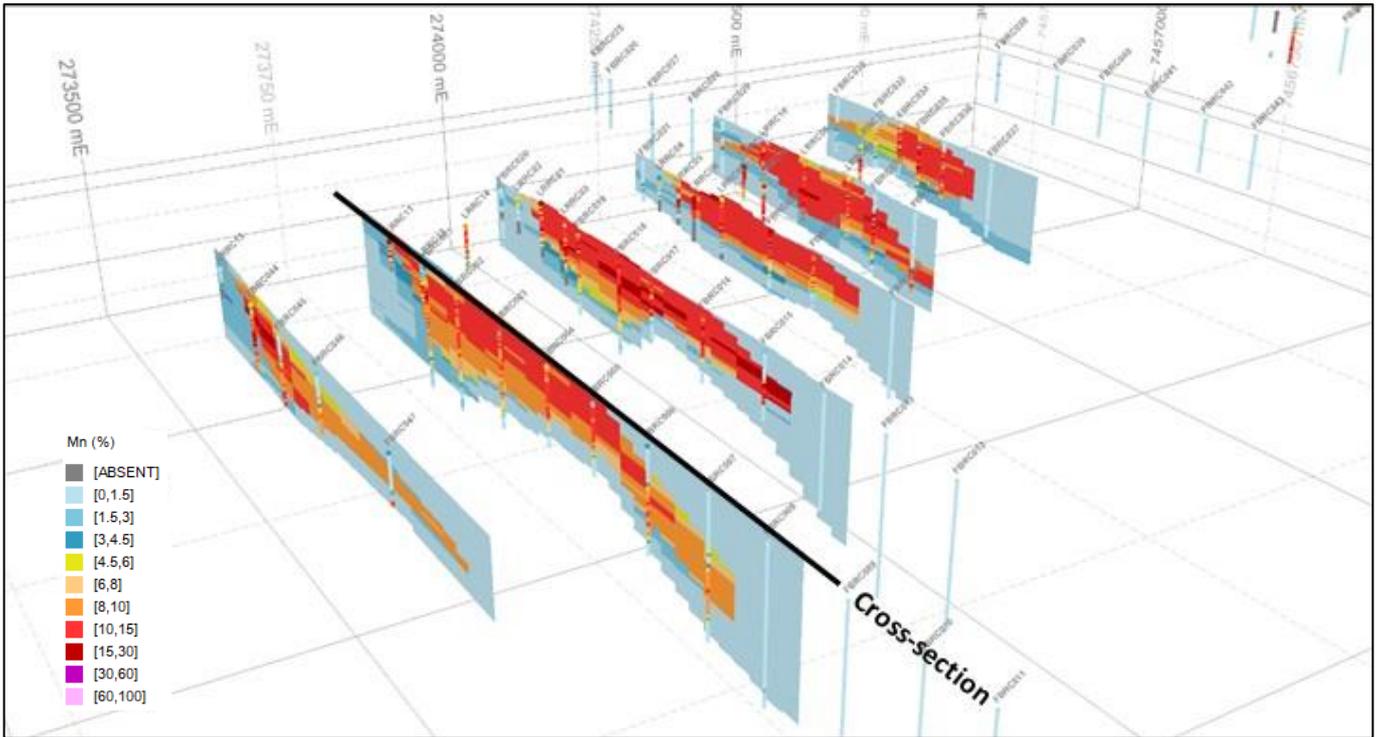


Figure 8. Oblique view of the LR1 updated Mineral Resource model coloured by Mn grade (%) (2x vertical exaggeration). Labels ("LRRC01-22) represent historic drillholes used in the estimate)

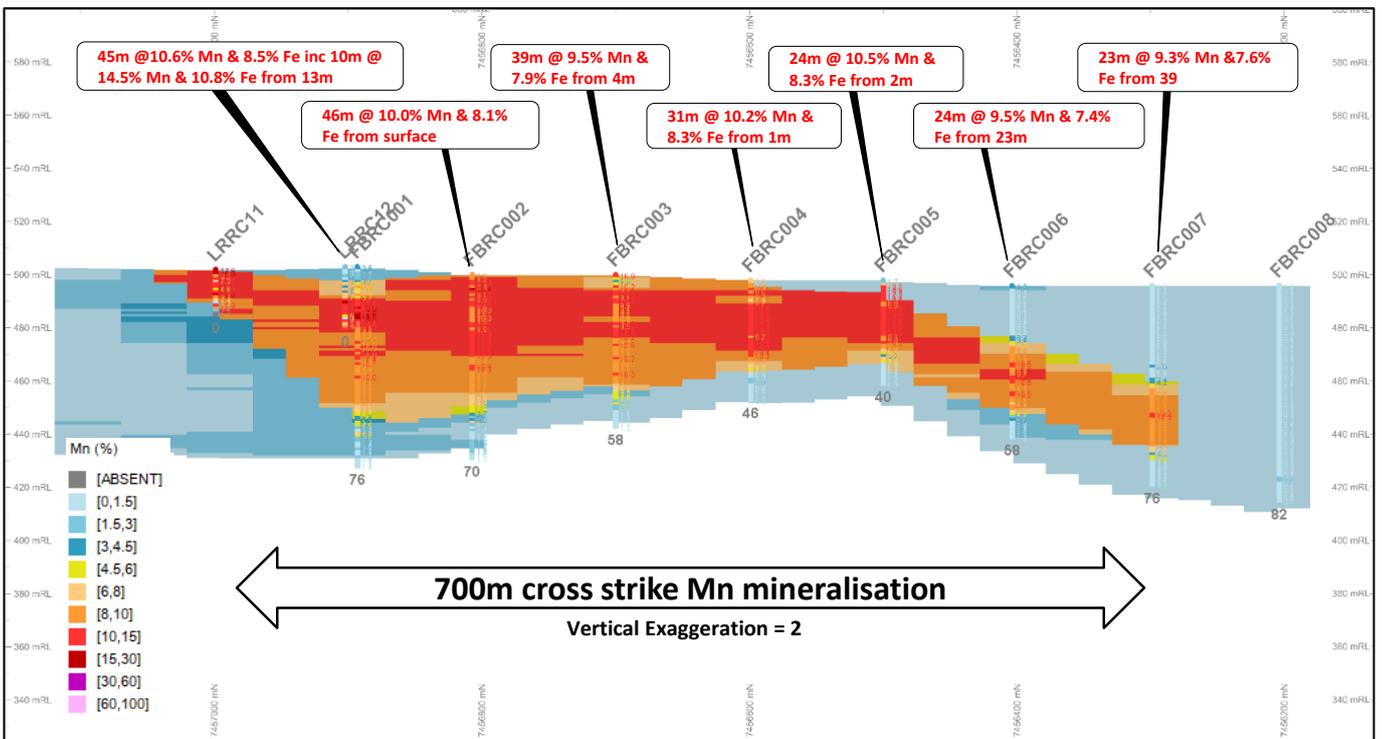


Figure 9. Type section 273,760 mE (looking east) showing LR1 Mineral Resource model cells and drill holes coloured by Mn grade (%) (2x vertical exaggeration)

Additional targets at Flanagan Bore

The manganese mineralisation at Flanagan Bore related to the LR1 and FB3 deposits is associated with regional northeast trending open synclinal fold. Additional manganese-enriched shale units have been identified along the limbs and have not been systematically drill tested. The fold appears to be semi-continuous along 10 km of strike from LR1 to around the nose at FB3 and associated fold limbs to FB5 and FB6.

These additional targets are summarised below and presented in Figure 1:

- **L1 and TF1 Prospects:** located along strike to the east of the LR1 deposit and extending to FB3 the L1 and TF prospects have historically drill tested with four drill holes and more recently four holes the Company completed in the December 2021 drill program. The results have been encouraging and similar to those already drilled into LR1 and FB3 but there remains 2,000 m of strike that requires more systematic drill testing.
- **FB1/FB2 Prospects:** as reported to the ASX on the 10 June 2021 and 23 March 2022, the RC drill results received from FB1 showed a range of widths and manganese grades consistent with those encountered at LR1 and FB3. The mineralisation is related to folded manganese shales with the thicker more prominent bands of manganese-enriched shale forming topographic rises. The structural complexity at FB1 maybe responsible for enhancing the manganese grade and the target requires further evaluation.
- **FB5/FB6 Prospects:** as reported on the 23 March 2022, a single line of RC drilling was completed at FB5 targeting outcropping and sub-cropping manganese-enriched shale. The drill holes confirmed the northwest dipping manganese enriched shale with a cross strike width of at least 400m intersected. The drilling completed at FB5 has only tested a small section of the 5km long zone of mapped manganese mineralisation that extends to the southwest towards the FB6 prospect. On this basis, the target area has high potential to form a substantial zone of manganese enrichment.

The Company is looking forward to drill testing these targets with ongoing phases of exploration to improve the tonnage potential understanding Flanagan Bore.

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

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About Black Canyon

Black Canyon has entered into a farm-in and joint venture with ASX listed Carawine Resources Limited (ASX:CWX) to acquire a majority interest in the Carawine Project in Western Australia. The Carawine Project covers approximately 800 km² of tenure located south of the operating Woodie-Woodie manganese mine, providing a large footprint in a proven and producing manganese belt. Black Canyon has also applied for and acquired other exploration licenses adjacent to the Carawine Project that would increase the total land holdings to over 2600 km² upon grant. In addition to manganese, the Carawine Project also hosts multiple copper occurrences including the Western Star prospect which comprises a large zone of surface copper enrichment.

Manganese and copper continue to have attractive fundamentals with growing utilisation in the battery mineral sector and challenging supply conditions.

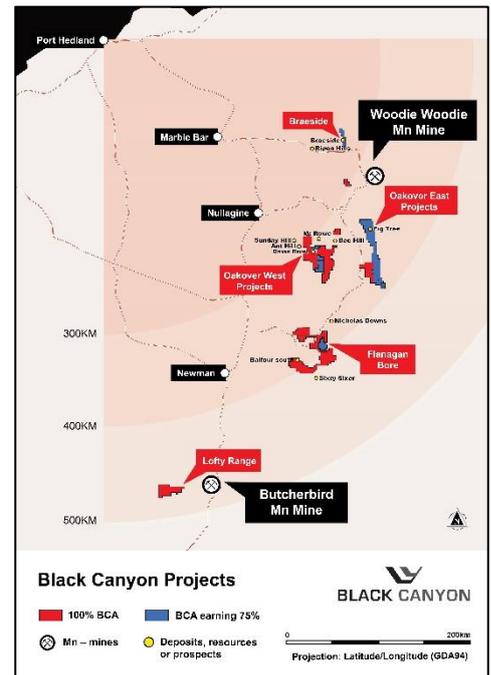
Compliance Statements

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 Australian 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 Persons 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 and 23 March 2022 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 the JORC Table 1 appendices that relate to Exploration Results and Mineral Resources in the original market announcements.





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).

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 Flanagan Bore 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 Flanagan Bore project there are also a number of recognised sedimentary Mn deposits within the Collier Basin such as the well-known Woodie Woodie, Oakover, Nicholas Downs, 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) and the Woblegun Formation (siltstone) and underlying Enacheddong Dolomite. It unconformably overlies a portion of the Pilbara Craton, the Edmund Basin and Earacheedy Basin

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

The geology at LR1 and FB3 can be separated into a number of primary units

- a. The surface enriched manganese shales which are typically higher grade and maybe lateritised to some extent and occurs from surface to 15 m depth.
- b. A thin interval of upper unmineralised Balfour shale. The upper unmineralised shale is brown grey in colour and occurs intermittently across the project area from surface up to 10 m in depth.
- c. A thick and widely distributed manganiferous shale unit that contains a supergene (manganese) enriched shale located between surface and 40 m depth and gently dipping. The manganese enriched layers are confined to distinct bands within the Balfour shale and alternate with barren red/brown or pale coloured shales intermixed within saprolitic clay bands.
- d. At depth the fresh manganiferous olive to green shales of the Balfour shale persist but have a lower manganese grade.
- e. Below the fresh manganiferous shales green or brown barren shale are encountered

At LR1 the northern extents of the current drilling demonstrates that the manganiferous deposit is structurally controlled, terminating at surface. This geological structure is visible by satellite imagery showing what has been interpreted as a large, folded structure with a nose closure possibly located to the west and then striking to the northeast towards FB2 and FB1. The mineralised zone generally strikes east-west forming a semi-basin like structure which outcrops on surface and gently dips to the south-southeast. The southern boundary of the LR1 deposit is truncated by a northeast trending structure infilled with dolerite terminating the strike continuity to the east. Additional drilling is required in this area to resolve the strike extents to the east and northeast.



The LR1 deposit is considered well drilled on a 200 x 100 m spaced drill pattern and remains open to the west.

The FB3 deposit is located within an open asymmetric folded synformal structure with an axial plane striking to the northeast. The northern limb of the fold appears to be dipping slightly steeper to the southwest while the southern limb appears to be dipping very shallowly to the northwest. The mineralisation terminates on the fold limbs but extends to TF1 and FB5.

The LR1 and FB3 resources have been zoned into three domains including basement. Target mineralisation is in the mineralised Balfour shale unit (Zone 2). The upper domain, Zone 1 is defined from surface up to 10 m depth. Zone 1 comprises brownish unmineralised Balfour shale lithology.

Zone 2 is the high grade, brown grey, Balfour shale unit that is enriched with manganese. The mineralised zone generally strikes east-west forming a semi-basin like structure which outcrops on surface and gently dips to the south.

Occasional low grade Mn intercepts in Zone 2 are associated with Balfour shale lithology consisting of unmineralised interbedded shale or ferruginous material. An oxidation and transition/fresh rock boundary has also been applied to the block model.

The basement (Zone 200) has been used to control the interpolation of high-grade Mn values into the unsampled and low-grade area of the deposit.

Drilling techniques and hole spacing

The Mineral Resource estimate is based on a combination of historic data and Company drilled data. The historic drill data comprises 22 drill holes and associated assays that were drilled into LR1 of which 17 of these the drill holes were within the boundary defined for the LR1 Mineral Resource estimate. The historic data was compiled from open file reports obtained from the Western Australian Department of Mines, Industry Regulation and Safety (“DMIRS”). Sufficient work has been done by Black Canyon to confirm that the quality and accuracy of the data is sufficient to support the Mineral Resource estimate in the form and context in which it is reported.

The historic drilling was completed using reverse circulation (RC) drilling for the Flanagan Bore project by Consolidated Global Investments Limited in July 2012. The drill company is stated as NDRC Pty Ltd within the header information of the collar, geology and assay text files. All drill collars, lithology, survey and assay files were checked prior to being imported into Datamine using standard routines.

Data collection and assaying was completed for the late 2012 drill program. Excel tables were provided to IHC Mining by Black Canyon and were checked for out of range values and header information was modified prior to being imported into Datamine using standard routines. A list of drillhole collars and manganese intersects > 7% Mn are presented in Appendix 2.

Drilling has been conducted via a conventional drill grid. The nominal drill spacing was 50 m along north-south traverses and each traverse was spaced approximately 100 m apart east-west. There are areas where the spacing of the traverses is up to 200 m. The objective of this early-stage drilling was to target areas of high prospectivity which coincide with manganese outcrops and targets generated from remote sensing.

The drilling completed by Black Canyon was designed and managed by Black Canyon staff and contractors and was undertaken in December 2021. The FB3 deposit was not previously drilled prior to Black Canyon’s 2021 program. The RC drill program was primarily focussed on the LR1 and FB3 deposits and completed by McKay Drilling using a truck mounted 685 Schramm drill rig. The drill hole was 5.25 inches in diameter. The drill spacing comprised a regular pattern of 200 m spaced lines and 100 m spaced drill holes. A list of drillhole collars and manganese intersects > 7% Mn are presented in Appendix 3.

Sampling and sub-sampling techniques

The July 2012 drilling and sampling programs across the LR1 prospect were completed using RC drilling to obtain samples at 1 m intervals. Logging of individual 1 m intervals was completed using logging code dictionary ('GeolCodes.txt') which recorded weathering, colour, lithology and observed commentary to assist with determining manganese mineralisation.

It has been observed from photography taken by Black Canyon during their site reconnaissance activities in 2021 that individual 1 m RC chips were placed in plastic bags with corresponding SAMPLEID's and stored in consecutive order adjacent to corresponding drill collars (Figure 10). The sample bags have since degraded however the weathered samples can still be observed on site, which provides a confirmatory and visual guide of the lithological sequence. The drilling and sampling techniques employed at LR1 are considered industry standard.



Figure 10. Drill rig spoil from historic drill hole LRRC03 (EOH 42) with samples laid in rows of 20m

The RC drilling completed by Black Canyon was logged and sampled on 1 m intervals. The samples were collected 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 upon receipt 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 hydraulically 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 11. December 2021 RC drill program designed and managed by Black Canyon staff and consultants

Sample analysis method - XRF

The elemental oxides were determined for both the historic and recent drill samples completed by Black Canyon using whole rock fusion (XRF – fused disc) analysis completed by ALS/CHEMEX method ME-XRF26s. The oxides analysed are outlined in Table 3 in addition to the conversion factor used to convert oxides assay results to elemental results.

Table 3 Mineral species classification and definition and oxide conversion factor for the elements estimated

MINERAL SPECIES CLASSIFICATION		Element	Oxide	Factor
Mineralogy	Definition			
Aluminium oxide	Al ₂ O ₃	Al	Al ₂ O ₃	1.889
Barium oxide	BaO	Ca	CaO	1.399
Calcium oxide	CaO	Fe	Fe ₂ O ₃	1.430
Cromium (III) oxide	Cr ₂ O ₃	K	K ₂ O	1.205
Iron	Fe	Mg	MgO	1.658
Iron (III) oxide	Fe ₂ O ₃	Mn	MnO	1.291
Potassium oxide	K ₂ O	Na	Na ₂ O	1.348
Magnesium oxide	MgO	P	P ₂ O ₅	2.291
Manganese	Mn	Si	SiO ₂	2.139
Manganese oxide	MnO			
Sodium oxide	Na ₂ O			
Phosphate pentoxide	P ₂ O ₅			
Silicon dioxide	SiO ₂			
Strontium oxide	SrO			
Titanium dioxide	TiO ₂			

Estimation methodology

Drill hole sampling has remained consistent at 1 m intervals for all drill holes from both the 2012 RC drill holes completed by Consolidated Global Investment ('CGI') and the recent December 2021 RC drill holes completed by Black Canyon. This is considered good practise 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.

Cut-off grades

The Mineral Resources stated for LR1 and FB3 deposits was estimated using a cut-off grade of 7% Mn. High-grade zones have also been estimated for LR1 and FB3 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 LR1 and FB3 deposits for the Flanagan Bore project has taken into consideration the drill hole spacing in plan view, the down hole sampling support with respect to the mineralised domain (Zone 2) and assessment of grade continuity by use of variography.

The LR1 and FB3 deposits have been assigned a JORC classification of Indicated, 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; and
- domain controlled variography for Mn grade that supports the drill spacing for the assigned JORC classification.

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 Indicated Mineral Resource estimate. The historic and more recent 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 has been undertaken on the LR1 and FB3 deposits.

The Company is in the process of undertaking Scoping Level metallurgical test work on PQ drill core material from the LR1 and FB3 Mineral Resource areas. The PQ core was drilled by Black Canyon during a December 2021 drill campaign. Composites have been selected on the following basis with 2 samples from an upper and lower mineralogical domain from LR1 and a single composite from FB3. All of the composites are from Zone 2 within each of the LR1 and FB3 orebodies. The Company is undertaking benchtop scale metallurgical processing (beneficiation, ore sorting and HLS) from the selected core samples. The objectives of the test work is to establish material characteristics, recoveries, potential flowsheet design and product marketability. At the time of reporting this Mineral Resource, update the



metallurgical test work results had not been completed. However, the Mn, Fe, Si and Al assay results that are reported as part of the LR1 and FB3 Mineral Resources compare favourably with the closest operational manganese enriched shale mine – Butcherbird, located south of Newman and owned by ASX-listed company Element25 Ltd.

No mining studies have been undertaken but the Company intends to investigate the potential economic viability of the project with an initial Scoping Study once further work is completed and results from the metallurgical test work have been received and evaluated.

Statement of Mineral Resources

The Global Mineral Resource reported at a cut-off grade of 7% Mn for the LR1 and FB3 deposits is presented in Table 4. This table conforms to guidelines set out in the JORC (2012). The JORC Classification outlines are presented in Figures 12 and 13.

At a cut-off grade of 7% Mn the Flanagan Bore project comprises a total Indicated Mineral Resource of 104 Mt @ 10.5% Mn for contained Mn of 11 Mt. At an elevated the cut-off grade of 11% Mn the Indicated Mineral Resource is 33 Mt @ 12.8% Mn (Table 5).

Table 4. Global Mineral Resource Estimate for FB3 and LR1 deposits April 2022*

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Notes:
(1) Mineral resources reported at a cut-off grade of 11% Mn

* refer below, JORC Table 1, Sections 1 to 3 and Appendix 1-3 for further details



Figure 12. FB3 deposit JORC Mineral Resource Classification (>7% Mn)



BLACK CANYON

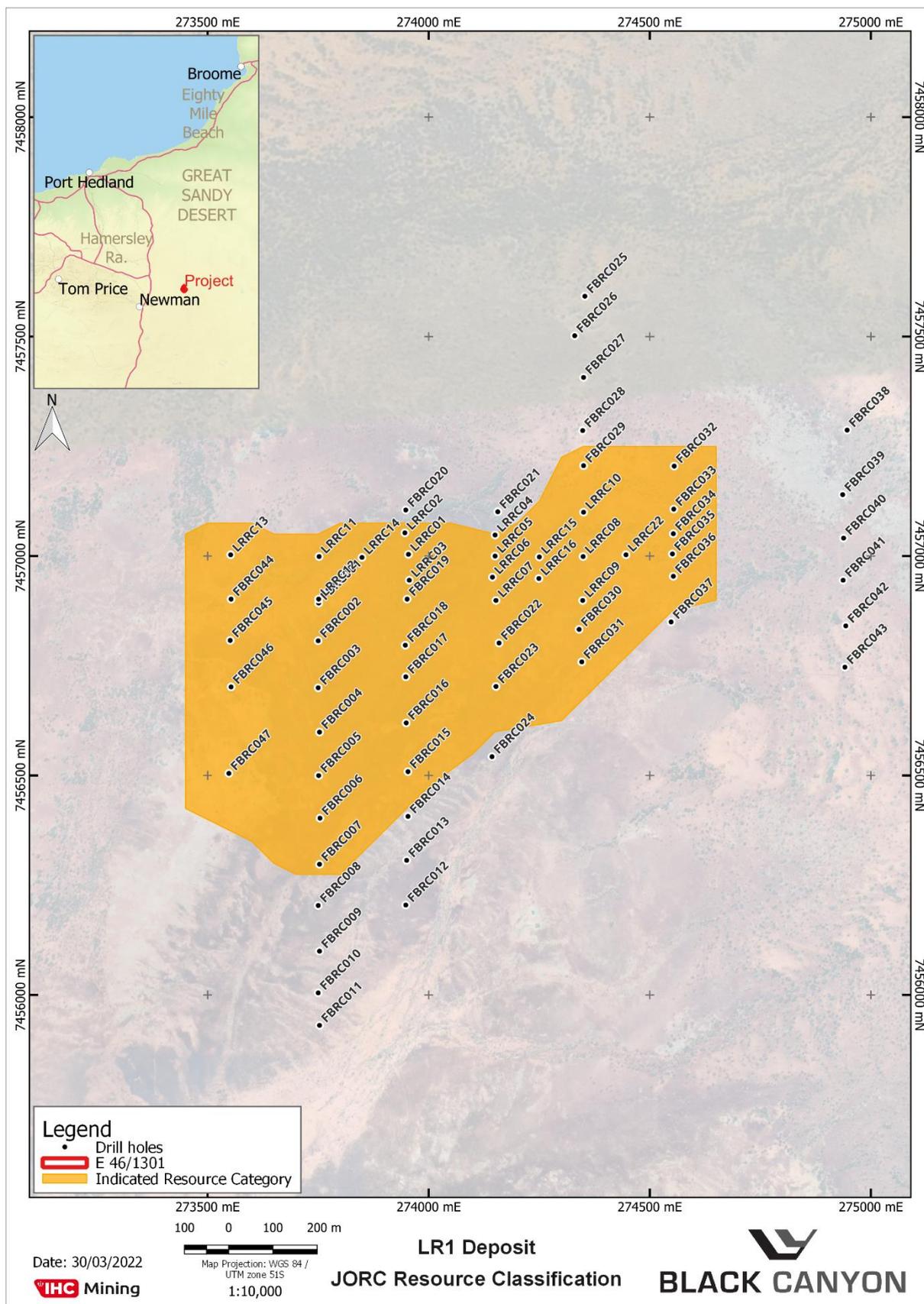


Figure 13. LR1 deposit JORC Mineral Resource Classification (>7% Mn)

APPENDIX 1: JORC 2012: TABLE 1

Section 1 Sampling Techniques and Data		
Criteria	Explanation	Comment
<i>Sampling techniques</i>	<p><i>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.</i></p> <p><i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i></p> <p><i>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.</i></p>	<p><i>Reverse circulation (‘RC’) was used as the primary drilling technique for the Flanagan Bore project.</i></p> <p><i>RC cuttings were continuously sampled at 1 m intervals. All drill holes were sampled from surface to end of hole or depth of mineralisation.</i></p> <p><i>A combination of historic drilling and recent drilling completed by Black Canyon have been used for the Flanagan Bore project. The historic holes were drilled by CGI during their 2012 exploration campaign while Black Canyon completed the R drilling in December 2021.</i></p> <p><i>All drill samples were logged for weathering, colour, lithology and mineralogy (+ %).</i></p> <p><i>RC samples were collected and placed in marked plastic bags in order at each collar position.</i></p> <p><i>CGI’s Annual Report for E46/794 for the period ending 11-02-2013 states that samples were analysed by using Multi-Element XRF26 technique at ALS Minerals Perth – now ALSChemex (‘ALS’).</i></p> <p><i>The assay results for the historic and Black Canyon drilling were collected on 1m intervals, pulverised and submitted for ‘LOI (TGA), Whole Rock by Fusion (XRF)’ using assay code ME-XRF26s.</i></p> <p><i>The 1m interval samples are considered industry standard and representative of the material being tested</i></p>
<i>Drilling techniques</i>	<p><i>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).</i></p>	<p><i>Both the historic and 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</i></p> <p><i>The 2012 drill campaign contracted NDRC Pty Ltd to complete the drill program over LR1. No drilling was completed at FB3.</i></p> <p><i>The 2021 drill campaign contracted McKay Drilling to twin, infill and extend the drilling at LR1 and complete the maiden drill program at FB3.</i></p>



Criteria	Explanation	Comment
<i>Drill sample recovery</i>	<p><i>Method of recording and assessing core and chip sample recoveries and results assessed.</i></p> <p><i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i></p> <p><i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i></p>	<p><i>There is little information from the 2012 drill campaign to confirm the drill sample recoveries. However this is not considered significant due to the small size of the data being used for the resource estimate at this stage of the project A number of the historic drill holes were twinned during the 2021 RC drill campaign with the results showing good comparisons.</i></p> <p><i>The 2021 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.</i></p> <p><i>During the 2021 drill program the 1m samples were collected from a levelled cone splitter affixed to the side of the drill rig.</i></p> <p><i>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.</i></p>
<i>Logging</i>	<p><i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i></p> <p><i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></p> <p><i>The total length and percentage of the relevant intersections logged.</i></p>	<p><i>Geological logs exist for the 2012 and 2021 drill programs.</i></p> <p><i>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.</i></p> <p><i>Logging and sampling has been carried out to industry standards to a level sufficient to support an Indicated Mineral Resource estimate.</i></p> <p><i>Drill holes were geologically logged in their entirety and a reference set of drill chips were collected in 20m interval chip trays.</i></p>



Criteria	Explanation	Comment
Sub-sampling techniques and sample preparation	<p>If core, whether cut or sawn and whether quarter, half or all core taken.</p> <p>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</p> <p>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</p> <p>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</p> <p>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.</p> <p>Whether sample sizes are appropriate to the grain size of the material being sampled.</p>	<p>Not applicable, no diamond drilling assays results have been used in this mineral resource estimate.</p> <p>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</p> <p>Field duplicates were undertaken at a rate of 2 per 100 samples. The field duplicates were split from the cone splitter simultaneously</p> <p>The samples sizes collected from the cone splitter are considered appropriate for the commodity being investigated</p>
Quality of assay data and laboratory tests	<p>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</p> <p>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.</p> <p>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.</p>	<p>Both the 2012 and 2021 samples were analysed at ALSchemex Perth, Western Australia utilising ore-grade XRF analysis which is considered industry standard for manganese ores.</p> <p>Elemental oxides assayed using XRF analysis include: Al₂O₃, BaO, CaO, Cr₂O₃, Fe, Fe₂O₃, K₂O, MgO, Mn, MnO, Na₂O, P₂O₅, SiO₂, SrO, TiO₂</p> <p>Oxides were converted to primary elements using standard conversion factors outlined by ALS.</p> <p>QA/QC was conducted by Black Canyon on the 2021 drill data by the following methods</p> <ul style="list-style-type: none"> • 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 2 in every 100 samples <p>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</p>



Criteria	Explanation	Comment
Verification of sampling and assaying	<p>The verification of significant intersections by either independent or alternative company personnel.</p> <p>The use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</p> <p>Discuss any adjustment to assay data.</p>	<p>Validation of the drilling files (collar, assay and lithology) was undertaken by IHC Mining.</p> <p>All historic data was stored digitally using separate .txt files for collar, assay and lithology.</p> <p>Adjustment of elemental oxides to primary element was completed using well known conversion factors outlined by ALS.</p>
Location of data points	<p>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.</p> <p>Specification of the grid system used.</p> <p>Quality and adequacy of topographic control.</p>	<p>It is understood all drill holes in the project area were surveyed by GPS with an accuracy of +/-5 m and the accuracy of the location of the drill collars is sufficient at this stage of exploration and resource development.</p> <p>Grid system used is WGS 84 / UTM zone 51S.</p> <p>IHC Mining deems all drill collar positions within the Flanagan Bore project area to be satisfactory at this stage of exploration and to support the Mineral Resource estimate as reported.</p> <p>A simple topographic DTM surface was developed using the existing collar positions and is considered satisfactory at this stage of exploration and to support the Mineral Resource estimate as reported.</p> <p>It is recommended further works use DGPS as survey pickup and LIDAR for development of a high-resolution topographic surface.</p>
Data spacing and distribution	<p>Data spacing for reporting of Exploration Results.</p> <p>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.</p> <p>Whether sample compositing has been applied.</p>	<p>The 2012 drilling completed at LR1 was conducted via a conventional drill grid. The nominal drill spacing was 50 m along north-south traverses and each traverse was spaced approximately 100 m apart east-west. There are areas where the spacing of the traverses is up to 200 m. The drill spacing was sufficient to establish grade and geological continuity</p> <p>The 2021 drilling completed at LR1 and FB3 was conducted on a conventional grid pattern. The lines were spaced 200m apart and drill holes drilled at 100m centres</p> <p>Variography has demonstrated current drill spacing supports an Inferred Mineral Resource classification at this stage of exploration.</p> <p>No sample compositing has been applied.</p>



Criteria	Explanation	Comment
Orientation of data in relation to geological structure	<p>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</p> <p>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.</p>	<p>At LR1 the drill lines were oriented north south across the strike of the primary mineralisation trend. The drill holes were completed at 90 degrees (vertical).</p> <p>The mineralisation is relatively flat lying exhibiting a gentle dip to the south, south-west.</p> <p>At FB3 the drill lines are oriented to the northwest perpendicular to the axial plane of the synformal structure</p> <p>The drill grid is assumed to be located both perpendicular to the planar orientation of the key mineralised horizon with no bias introduced with respect to the strike or dip of the mineralised horizon.</p>
Sample security	The measures taken to ensure sample security.	<p>All samples were dispatched directly from site to ALS Perth, Western Australia. There has been no documentation stating any problems during sample transportation from site to ALS.</p> <p>Given the location of the project it is not considered high risk in the context of which samples were reported.</p>
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	<p>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.</p> <p>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.</p>	<p>The Flanagan Bore Project lies within tenement E 46/1301 currently held by Carawine Resources Limited. Tenement E 46/1301 was granted on 24/09/2019 and expires on 24/09/2024.</p> <p>Black Canyon Limited has a farm-in and joint venture agreement with Carawine Resources Limited (ASX:CWX). On the 4 April Black Canyon announced it had earned a 51% interest in the Joint Venture that includes Flanagan Bore. The Company is now moving towards earning a 75% by sole funding \$2.5m in the next 3 years.</p> <p>The tenement of which the project resides remains subject to native title. Access has been previously provided and there are no known impediments to obtaining a licence to operate in the area.</p>
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	Previous work on the tenure includes exploration by Sentinel Mining Company carried out in 1968 in the general area of Balfour Downs. The exploration work included rock chip sampling from the southern edge of E46/784 which returned three samples with manganese values of 21.6 %, 25.7% and 11.4% Mn within manganese surface enrichment of Balfour Shales. Consolidated Global investment Pty Limited ('CGI') owned the tenement E46/784 between 2010 and 2015 and carried out exploration work.



Criteria	Explanation	Comment
		<p>Early reconnaissance work completed by CGI delineated many occurrences of manganese enriched outcroppings of the Balfour Formation. These north south striking outcrops were continuous over a distance of 1 km with widths of 50 m to 90 m in the LR1 Prospect area. Further exploration work completed by CGI included identification of prospective area using google images and remote sensing, a heritage survey and clearance for drilling using local Martu consultants. CGI completed a reverse circulation drilling programme of 22 holes in July 2012 on E46/784.</p> <p>Black Canyon completed a ground reconnaissance exercise in May 2021 to map the manganese enriched shales, determine potential sub-cropping and review historic drill samples which remains on site alongside their respective collar positions. The exercise proved significant manganese enriched shale throughout the project both as outcropping, sub-cropping and as substantial float material. This early reconnaissance groundwork by Black Canyon was used as a basis for the recent 2021 RC drilling programme.</p>
Geology	Deposit type, geological setting and style of mineralisation.	<p>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.</p> <p>The LR1 and FB3 deposits can be separated into three primary units, the upper unmineralised Balfour shale, the mineralised Balfour shale and the lower basal shale unit. The unmineralised shale is brown grey in colour and the manganese shale unit contains a supergene enriched manganese horizon which exhibits thickness range between 5 m to 50 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.</p> <p>The northern extents of the current drilling demonstrates that the manganese deposit is structurally controlled in both the LR1 and FB3 deposits, terminating at surface. This geological structure is visible by satellite imagery showing what could be a large syncline structure. The mineralised zone generally strikes east-west forming a semi-basin like structure which outcrops on surface and gently dips to the south-south-east for the LR1 deposit. The FB3 deposit is located at the apex of the large geological synclinal structure providing a large continuous body of mineralisation.</p> <p>Current drilled extents of the LR1 prospect is positioned at the extents of one arm of the syncline structure indicating significant potential for further manganese exploration in the local region.</p>



Criteria	Explanation	Comment
<i>Drill hole Information</i>	<p>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:</p> <ul style="list-style-type: none">• 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. <p>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.</p>	<p>See drill hole location plan in Figures 11 and 12 in main body of the report.</p> <p>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 and 3</p>
<i>Data aggregation methods</i>	<p>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.</p> <p>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.</p> <p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	<p>No grade cutting to assays has been undertaken.</p> <p>No aggregation of samples has been undertaken.</p> <p>Assays have been reported as oxides. Appropriate conversion from oxides to elements has been completed using standard conversion factors outlined by ALS</p>



Criteria	Explanation	Comment
<i>Relationship between mineralisation widths and intercept lengths</i>	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p> <p><i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i></p> <p><i>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').</i></p>	<p><i>The LR1 deposit is mostly flat lying exhibiting a gentle dip of mineralisation to the south, south-east therefore 90-degree (vertical) drill holes considered appropriate.</i></p> <p><i>The mineralisation of the LR1 prospect is primarily strata bound striking approximately 80 to 90 degrees, gently dipping to the south.</i></p> <p><i>The FB3 deposit is also mostly flat lying therefore 90-degree (vertical) drill holes considered appropriate. The FB3 deposit shows strong mineralisation continuity along and across strike, forming a synclinal structure in the south-western extents. A significant number of holes terminate in Mn% grade.</i></p>
<i>Diagrams</i>	<p><i>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</i></p>	<p><i>Refer to body of report for maps and sections of drilling data.</i></p>
<i>Balanced reporting</i>	<p><i>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.</i></p>	<p><i>Exploration results are not being reported at this time.</i></p>
<i>Other substantive exploration data</i>	<p><i>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i></p>	<p><i>Exploration results are not being reported at this time.</i></p>
<i>Further work</i>	<p><i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling</i></p>	<p><i>IHC has been advised that Black Canyon will be undertaking additional RC drill programs to expand the known manganese mineralisation.</i></p> <p><i>IHC also advised density testwork to be completed to develop a suitable density formula to replace the current assumed density value.</i></p>



Criteria	Explanation	Comment
	areas, provided this information is not commercially sensitive.	It is recommended that the Company 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 FB3 and LR1 deposits. Data in the form of individual Excel files ('.csv') was independently checked and reviewed by IHC Mining. Data review included: <ul style="list-style-type: none"> • 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 through 2021 to map the Flanagan Bore prospects and visually inspect historic collars and stored samples at individual collar positions. The Company managed and supervised the December 2021 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 was present on site for the duration of the December 2021 RC drill program The Competent Person Greg Jones has not yet been able to visit the site, however given his experience with the style of mineralisation in question, site visits to other manganese stratabound deposits, in addition to the extensive photography 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 geological interpretation was undertaken by IHC Mining and then validated using logging data, sampling information, geological surface mapping and observations. Three domains were identified based on the manganese grades and lithological logging and these domains are noted as Zones. Both the FB3 and LR1 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



Criteria	Explanation	Comment
	<p><i>The effect, if any, of alternative interpretations on Mineral Resource estimation.</i></p> <p><i>The use of geology in guiding and controlling Mineral Resource estimation.</i></p> <p><i>The factors affecting continuity both of grade and geology.</i></p>	<p><i>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 grade at depth or by end of hole 'EOH' where drilling terminated in mineralisation.</i></p> <p><i>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.</i></p> <p><i>The recent 2021 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 'GZONE' field in model) to exclude all transitional and fresh material.</i></p> <p><i>This approach of domaining by Mn grade 'ZONE' and oxidised material 'GZONE' provides a suitable approach to report the resource model using a combination of the two fields.</i></p> <p><i>The mineralised zone generally strikes east-west (90 degrees) for the LR1 deposit forming a semi-basin like structure which outcrops on surface and gently dips to the south and constricted by some structure to the north. The dominant east-west strike direction was confirmed by horizontal continuity and variography analysis.</i></p> <p><i>The FB3 mineralised zone most prominent strike direction is north-west south-east (320 degrees). FB3 is located at the apex of the larger synclinal structure providing a significant body of mineralisation.</i></p> <p><i>Generally the mineralisation for the LR1 deposit has been well defined from the recent drilling undertaken during the 2021 drill campaign, closing the north and south extents and depth of mineralisation for the most part. The western extents remain open both along strike and at depth. The eastern extents also remain partially open however has been mostly terminated by a drill line 380 m directly west (E274950).</i></p> <p><i>The majority of the FB3 deposit drilling has been terminated in mineralisation due to time constraints, leaving true depth of mineralisation open for further exploration. The northern extents of FB3 have been effectively constrained whilst both the south-east and south-western synclinal extensional limbs remain open.</i></p>
Dimensions	<p><i>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.</i></p>	<p><i>The LR1 deposit from the most easterly point to the most westerly point is approximately 1.2 km along strike. It is approximately 940 m at its widest m and 465 m at its narrowest north – south across strike.</i></p> <p><i>The average thickness of the manganiferous shale for the LR1 deposit is approximately 5 m to 50 m thick. The deposit is</i></p>



Criteria	Explanation	Comment
		<p><i>thickest in through the centre on an east-west strike and thins both north and south where it is structurally contained.</i></p> <p><i>The FB3 deposit dimensions is approximately 1.3 km north-east, southwest and 1.4 km north-west, south-east therefore retaining similar width in all directions. There is a narrow portion of the deposit on the western flank 130 m wide which is the beginning of the western extensional limb towards TF1.</i></p>
<p><i>Estimation and modelling techniques</i></p>	<p><i>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.</i></p> <p><i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i></p> <p><i>The assumptions made regarding recovery of by-products.</i></p> <p><i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i></p> <p><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></p> <p><i>Any assumptions behind modelling of selective mining units.</i></p> <p><i>Any assumptions about correlation between variables.</i></p> <p><i>Description of how the geological interpretation was used to control the resource estimates.</i></p> <p><i>Discussion of basis for using or not using grade cutting or capping.</i></p> <p><i>The process of validation, the checking process used, the comparison of model data to drill</i></p>	<p><i>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.</i></p> <p><i>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</i></p> <p><i>This is a maiden JORC 2012 Mineral Resource estimate for the FB3 deposit and an updated Mineral Resource estimate for the LR1 deposit which now includes the recent drilling completed by the Company.</i></p> <p><i>No mine production records recorded as this is not applicable at this stage of exploration.</i></p> <p><i>No assumptions have been made regarding recovery of by-products.</i></p> <p><i>The parent cell size used in the grade interpolation is typically half the average drill hole spacing on the X and Y axes.</i></p> <p><i>The parent cell size for this resource estimate is 100 x 50 x 1 (XYZ).</i></p> <p><i>No assumptions have been made regarding modelling of selected mining units.</i></p> <p><i>No assumptions have been made about correlation behind variables.</i></p> <p><i>Validation was undertaken by use of swathe plots, population distribution analysis and visual inspection.</i></p> <p><i>The geological zones 'ZONE' were used to control the grade interpolation. 'GZONE' was also used as a secondary constraint to report oxide material only (excluding fresh and transitional material).</i></p>



Criteria	Explanation	Comment
	<i>hole data, and use of reconciliation data if available.</i>	
<i>Moisture</i>	<i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i>	<i>Tonnages were estimated on assumed dry basis. No account has been made nor current test work completed to determine moisture.</i>
<i>Cut-off parameters</i>	<i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i>	<i>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.</i>
<i>Mining factors or assumptions</i>	<i>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.</i>	<i>No specific mining method is assumed other than potentially open pit mining methods. No minimum thickness was assumed for reporting of the mineral resource.</i>
<i>Metallurgical factors or assumptions</i>	<i>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</i>	<i>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 Flanagan Bore deposits also have reasonable prospect for economic extraction</i>



Criteria	Explanation	Comment
	<p><i>explanation of the basis of the metallurgical assumptions made.</i></p>	
<p><i>Environmental factors or assumptions</i></p>	<p><i>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 environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</i></p>	<p><i>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.</i></p> <p><i>No environmental concerns or issues were identified during this phase of exploration.</i></p>
<p><i>Bulk density</i></p>	<p><i>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.</i></p> <p><i>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.</i></p> <p><i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></p>	<p><i>A BD was applied to the model using an assumed average manganiferous shale BD value of 2.4. This is considered adequate for this stage of exploration and used generally in industry for manganese enriched styles of mineralisation.</i></p> <p><i>It is recommended that future studies include investigations for determining BD values across the various domains to convert volume to tonnes for the manganiferous shale.</i></p>



Criteria	Explanation	Comment
Classification	<p>The basis for the classification of the Mineral Resources into varying confidence categories.</p> <p>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).</p> <p>Whether the result appropriately reflects the Competent Person's view of the deposit.</p>	<p>The Indicated classification for the LR1 and FB3 deposit was based on the following criteria: drill hole spacing, appropriate grade constraints and domain controlled variography.</p> <p>The classification of the Indicated Resource was supported by all of the supporting criteria as noted above.</p> <p>As Competent Person Greg Jones considers that the result appropriately reflects a reasonable view of the deposit JORC categorisation.</p>
Audits or reviews.	<p>The results of any audits or reviews of Mineral Resource estimates.</p>	<p>No recent audits or reviews of the Mineral Resource estimate has been undertaken at this point in time. This is the maiden Mineral Resource estimate for the deposit FB3 deposit and an updated Mineral Resource estimate for LR1 deposit.</p>
Discussion of relative accuracy/ confidence	<p>Where appropriate a statement of the relative accuracy and confidence level in the Mineral 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.</p> <p>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.</p> <p>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</p>	<p>Variography was used to support the drill hole spacing for the selected JORC Classification.</p> <p>Validation of the model vs drill hole grades was carried out by direct observation and comparison of the results on screen.</p> <p>The Mineral Resource statement is a global estimate for the entire known extent of the FB3 and LR1 deposits within the tenement area.</p> <p>There has been no production to date.</p>



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

Hole id	East (WGS84)	North (WGS84)	RI	Dip	Azimuth	EOH (m)	From depth	To depth	Interval	Mn %	Fe %	Al %	Si %	Zone
LRRC01	273954	7457004	506	-90	360	36	0	2	2	14.7	18.7	3.9	13.3	2.0
LRRC01	273954	7457004	503	-90	360	36	3	6	3	13.1	11.9	4.7	17.8	2.0
LRRC01	273954	7457004	492	-90	360	36	7	23	16	11.7	9.4	5.0	18.3	2.0
LRRC01	273954	7457004	482	-90	360	36	24	26	2	8.9	11.2	6.2	21.5	2.0
LRRC02	273946	7457053	502	-90	360	24	2	3	1	8.6	7.0	4.4	17.7	200.0
LRRC03	273956	7456945	499	-90	360	42	0	11	11	11.1	8.9	4.4	17.0	2.0
LRRC03	273956	7456945	491	-90	360	42	12	15	3	12.5	9.5	4.9	17.7	2.0
LRRC03	273956	7456945	482	-90	360	42	16	28	12	13.6	8.6	5.3	19.5	2.0
LRRC03	273956	7456945	474	-90	360	42	29	31	2	7.5	8.4	6.2	22.0	2.0
LRRC04	274150	7457048	497	-90	360	24	4	5	1	9.7	18.0	7.9	13.0	200.0
LRRC04	274150	7457048	489	-90	360	24	12	13	1	9.0	6.9	7.1	24.0	200.0
LRRC05	274150	7457000	498	-90	360	24	0	3	3	11.3	14.1	4.1	14.7	2.0
LRRC05	274150	7457000	489	-90	360	24	6	14	8	13.8	8.6	5.5	20.6	2.0
LRRC06	274144	7456952	494	-90	360	30	0	15	15	15.8	9.4	4.6	18.3	2.0
LRRC07	274152	7456899	495	-90	360	40	1	24	23	12.4	9.6	4.8	18.4	2.0
LRRC07	274152	7456899	481	-90	360	40	25	27	2	9.5	8.3	6.6	23.3	2.0
LRRC07	274152	7456899	479	-90	360	40	28	29	1	8.1	7.7	8.7	22.9	2.0
LRRC08	274349	7456999	502	-90	360	42	0	1	1	9.4	13.8	5.1	20.2	2.0
LRRC08	274349	7456999	482	-90	360	42	2	39	37	12.9	9.9	5.2	19.8	2.0
LRRC09	274348	7456899	498	-90	360	42	2	12	10	10.9	9.7	5.0	19.0	2.0
LRRC09	274348	7456899	491	-90	360	42	13	16	3	15.9	11.4	4.8	18.0	2.0
LRRC09	274348	7456899	478	-90	360	42	17	37	20	10.3	8.1	4.9	17.7	2.0
LRRC10	274350	7457100	501	-90	360	20	0	3	3	13.3	16.1	4.1	14.7	2.0
LRRC10	274350	7457100	491	-90	360	20	4	19	15	12.8	8.6	5.1	19.5	2.0
LRRC11	273752	7456999	499	-90	360	18	0	7	7	11.7	7.6	4.4	15.3	2.0
LRRC11	273752	7456999	492	-90	360	18	8	12	4	12.1	8.9	5.4	19.0	2.0
LRRC11	273752	7456999	488	-90	360	18	13	15	2	10.6	10.8	6.0	20.3	2.0
LRRC12	273751	7456902	489	-90	360	24	11	18	7	12.6	9.9	5.6	19.7	2.0
LRRC12	273751	7456902	481	-90	360	24	20	24	4	9.6	9.8	6.2	22.2	2.0
LRRC13	273552	7457003	499	-90	360	18	5	6	1	7.1	7.7	5.4	21.2	2.0
LRRC14	273849	7456997	494	-90	360	30	0	18	18	10.5	8.3	5.0	18.6	2.0
LRRC14	273849	7456997	483	-90	360	30	20	21	1	18.8	14.5	4.0	15.4	2.0
LRRC14	273849	7456997	481	-90	360	30	22	23	1	7.4	10.1	6.9	23.2	2.0
LRRC14	273849	7456997	478	-90	360	30	25	26	1	9.2	6.3	6.7	24.5	2.0
LRRC15	274250	7456998	500	-90	360	24	0	15	15	13.6	8.7	5.0	20.4	2.0
LRRC15	274250	7456998	491	-90	360	24	16	17	1	7.6	9.1	6.3	22.2	2.0
LRRC15	274250	7456998	488	-90	360	24	18	21	3	8.8	7.7	6.8	23.6	2.0
LRRC16	274249	7456949	501	-90	360	36	0	4	4	13.0	21.9	3.9	14.5	2.0
LRRC16	274249	7456949	498	-90	360	36	5	6	1	7.6	10.6	5.7	22.7	2.0
LRRC16	274249	7456949	482	-90	360	36	8	34	26	11.7	9.2	5.4	20.1	2.0
LRRC22	274446	7457003	504	-90	360	42	1	2	1	8.1	6.3	6.3	21.4	1.0
LRRC22	274446	7457003	484	-90	360	42	7	36	29	11.9	11.3	5.1	19.4	2.0



APPENDIX 3: SUMMARY DRILL HOLE COLLAR AND COMPOSITES (>7% Mn) – Black Canyon drilling

Hole id	East (GDA94)	North (GDA94)	RI	Dip	Azimuth	EOH (m)	From depth	To depth	Interval	Mn %	Fe %	Al %	Si %	Zone
FBRC001	273751	7456893	495.5	-90	360	76	7	8	1	9.5	6.3	6.3	20.9	2
FBRC001	273751	7456893	492.5	-90	360	76	10	11	1	9.3	8.1	6.2	21.2	2
FBRC001	273751	7456893	469.5	-90	360	76	12	55	43	10.8	8.6	4.6	16.8	2
FBRC002	273750	7456807	477	-90	360	70	0	46	46	10.0	8.1	4.4	15.9	2
FBRC003	273750	7456700	499.5	-90	360	58	0	1	1	10.9	8.2	5.2	21.6	2
FBRC003	273750	7456700	476.5	-90	360	58	4	43	39	9.5	7.9	4.5	16.4	2
FBRC004	273753	7456599	481.5	-90	360	46	1	32	31	10.2	8.3	4.6	16.5	2
FBRC004	273753	7456599	463.5	-90	360	46	34	35	1	7.0	6.7	6.4	23.0	2
FBRC005	273751	7456500	484	-90	360	40	2	26	24	10.5	8.3	4.4	16.2	2
FBRC006	273754	7456403	461	-90	360	58	23	47	24	9.5	7.4	4.4	16.1	2
FBRC007	273753	7456298	445.5	-90	360	76	39	62	23	9.3	7.6	4.4	16.0	2
FBRC015	273953	7456509	476	-90	360	40	18	30	12	16.1	13.4	4.9	16.3	2
FBRC016	273949	7456620	487	-90	360	40	0	26	26	12.6	10.0	4.7	17.4	2
FBRC017	273948	7456725	496.5	-90	360	34	0	7	7	11.0	10.2	4.1	15.4	2
FBRC017	273948	7456725	488	-90	360	34	8	16	8	15.4	11.0	4.6	17.9	2
FBRC017	273948	7456725	482	-90	360	34	17	19	2	15.1	9.7	5.5	19.4	2
FBRC018	273947	7456797	482.5	-90	360	58	0	39	39	13.6	8.7	4.5	16.7	2
FBRC019	273951	7456902	486.5	-90	360	52	0	31	31	11.2	8.9	4.5	17.1	2
FBRC022	274159	7456802	495.5	-90	360	40	0	9	9	13.5	8.5	4.4	17.9	2
FBRC022	274159	7456802	484.5	-90	360	40	10	21	11	11.7	9.4	5.6	20.1	2
FBRC022	274159	7456802	477.5	-90	360	40	22	23	1	7.9	7.8	6.0	20.8	2
FBRC023	274152	7456703	497.5	-90	360	34	0	9	9	11.8	8.3	4.3	17.0	2
FBRC023	274152	7456703	491.5	-90	360	34	10	11	1	23.4	10.0	3.7	13.4	2
FBRC023	274152	7456703	488	-90	360	34	12	16	4	12.4	11.7	5.0	18.7	2
FBRC023	274152	7456703	484	-90	360	34	17	19	2	12.9	10.1	5.7	20.8	2
FBRC023	274152	7456703	481	-90	360	34	20	22	2	10.0	8.9	6.3	21.8	2
FBRC029	274350	7457206	486.5	-90	360	40	16	19	3	9.2	10.0	6.3	23.2	2
FBRC030	274340	7456833	489	-90	360	52	11	15	4	14.4	9.3	4.7	18.4	2
FBRC030	274340	7456833	485	-90	360	52	16	18	2	14.2	13.9	4.4	17.1	2
FBRC030	274340	7456833	472	-90	360	52	19	41	22	12.4	8.7	4.7	17.9	2
FBRC031	274346	7456759	456.5	-90	360	52	35	52	17	10.7	9.1	4.9	17.7	2
FBRC032	274555	7457205	487.5	-90	360	40	18	19	1	13.3	6.7	6.2	22.9	2
FBRC032	274555	7457205	485	-90	360	40	20	22	2	10.8	7.0	6.5	23.4	2
FBRC033	274554	7457107	496.5	-90	360	40	9	10	1	9.1	11.5	6.2	22.3	2
FBRC033	274554	7457107	493	-90	360	40	11	15	4	9.1	8.6	5.7	24.6	2
FBRC033	274554	7457107	488.5	-90	360	40	17	18	1	10.3	8.0	5.6	24.0	2
FBRC033	274554	7457107	486.5	-90	360	40	19	20	1	9.5	12.5	5.5	21.3	2
FBRC033	274554	7457107	478.5	-90	360	40	27	28	1	11.8	8.8	6.3	21.9	2
FBRC034	274553	7457051	503.5	-90	360	40	2	3	1	16.5	8.5	4.3	17.2	2
FBRC034	274553	7457051	496	-90	360	40	5	15	10	13.0	9.0	5.1	21.5	2
FBRC034	274553	7457051	483.5	-90	360	40	17	28	11	11.5	9.2	6.0	21.5	2
FBRC035	274551	7457005	503	-90	360	40	0	2	2	9.5	10.3	4.1	15.9	2
FBRC035	274551	7457005	499.5	-90	360	40	3	6	3	10.2	8.5	4.7	20.4	2
FBRC035	274551	7457005	496.5	-90	360	40	7	8	1	12.6	7.9	5.8	22.5	2
FBRC035	274551	7457005	485.5	-90	360	40	9	28	19	14.3	9.7	5.0	19.7	2
FBRC035	274551	7457005	474.5	-90	360	40	29	30	1	14.7	6.3	5.1	19.6	2
FBRC035	274551	7457005	471	-90	360	40	31	35	4	8.2	8.3	6.3	22.2	2
FBRC036	274553	7456954	494	-90	360	40	6	14	8	11.9	9.8	5.4	21.6	2
FBRC036	274553	7456954	482	-90	360	40	15	29	14	12.2	10.5	5.0	20.6	2
FBRC036	274553	7456954	469	-90	360	40	30	40	10	9.9	8.5	5.3	19.5	2
FBRC044	273553	7456902	477.5	-90	360	40	5	40	35	11.9	8.7	5.1	18.5	2
FBRC045	273551	7456808	471	-90	360	40	14	40	26	9.6	8.5	4.4	15.7	2
FBRC046	273553	7456702	470.5	-90	360	34	21	34	13	9.2	8.1	4.4	16.2	2
FBRC047	273548	7456505	472	-90	360	28	24	28	4	9.41	8.1	4.3	15.2	2



BLACK CANYON

FBRC059	278436	7458257	532	-90	360	22	0	4	4	13.6	8.3	5.6	22.2	2
FBRC060	278489	7458156	532	-90	360	58	0	4	4	19	14	3.9	16.3	2
FBRC060	278489	7458156	517.5	-90	360	58	5	28	23	14.5	15	4.4	19.1	2
FBRC060	278489	7458156	503.5	-90	360	58	30	31	1	8.86	18	4.8	20.5	2
FBRC060	278489	7458156	498.5	-90	360	58	32	39	7	12.4	12	5.6	21.1	2
FBRC061	278533	7458078	516.5	-90	360	46	0	31	31	13.1	13	4.7	19.5	2
FBRC061	278533	7458078	498	-90	360	46	32	36	4	8.37	15	5.3	22.1	2
FBRC061	278533	7458078	494.5	-90	360	46	37	38	1	7.94	14	5.9	21.9	2
FBRC061	278533	7458078	492.5	-90	360	46	39	40	1	11.8	12	5.6	20.6	2
FBRC062	278584	7457992	522.5	-90	360	34	0	11	11	9.78	9.8	4.4	18.3	2
FBRC062	278584	7457992	513	-90	360	34	13	17	4	9.38	13	5.6	21.7	2
FBRC062	278584	7457992	509.5	-90	360	34	18	19	1	8.97	13	5.9	20.9	2
FBRC062	278584	7457992	506.5	-90	360	34	21	22	1	7.51	9.5	6.7	24	1
FBRC063	278633	7457900	518	-90	360	28	1	11	10	8.32	12	4.6	18.5	2
FBRC063	278633	7457900	507.5	-90	360	28	16	17	1	8.7	8.9	6.5	23.3	2
FBRC064	278693	7457814	513	-90	360	22	0	22	22	10.8	9.8	4.1	16.5	2
FBRC065	278225	7458219	529.5	-90	360	22	2	3	1	13.7	11	6.2	18.4	2
FBRC065	278225	7458219	525	-90	360	22	4	10	6	11.8	9.2	6.3	21.4	2
FBRC066	278255	7458154	531.5	-90	360	52	0	5	5	21.7	14	4	13.7	2
FBRC066	278255	7458154	516.5	-90	360	52	6	29	23	13.3	12	5.1	20.2	2
FBRC067	278313	7458057	510.5	-90	360	40	3	40	37	12.9	12	4.6	19.1	2
FBRC068	278373	7457985	516.5	-90	360	34	0	27	27	14.5	12	4.6	18.4	2
FBRC068	278373	7457985	499	-90	360	34	28	34	6	11.6	11	3.9	16	2
FBRC069	278414	7457885	514	-90	360	28	0	28	28	12.7	12	4.9	18.1	2
FBRC070	278469	7457816	515	-90	360	22	0	22	22	12.7	11	4.4	18	2
FBRC071	278509	7457715	510	-90	360	28	0	28	28	11.3	11	4.4	18	2
FBRC072	278546	7457656	514	-90	360	16	0	16	16	10.8	11	4.6	18.7	2
FBRC073	278006	7458236	521.5	-90	360	22	0	1	1	8.23	24	2.9	18.9	1
FBRC075	278095	7458044	505	-90	360	40	1	37	36	11.6	11	4.6	18.5	2
FBRC075	278095	7458044	484.5	-90	360	40	39	40	1	7.25	7.8	5.1	19.3	2
FBRC076	278135	7457956	504.5	-90	360	46	0	43	43	10.3	10	3.9	15.7	2
FBRC076	278135	7457956	480.5	-90	360	46	45	46	1	7.57	9.6	4.7	17.7	2
FBRC077	278198	7457867	522	-90	360	22	0	4	4	8.51	9.9	4	17.1	2
FBRC077	278198	7457867	510.5	-90	360	22	5	22	17	12	11	4.2	16.2	2
FBRC078	278245	7457785	513	-90	360	22	0	22	22	11.7	11	4.3	17.5	2
FBRC079	278287	7457706	521	-90	360	34	0	6	6	10.5	12	4.9	20.6	2
FBRC079	278287	7457706	503.5	-90	360	34	7	34	27	10.3	11	4.1	16.1	2
FBRC080	278353	7457613	515.5	-90	360	22	0	9	9	12.7	12	4.6	18.5	2
FBRC080	278353	7457613	509.5	-90	360	22	10	11	1	9.23	11	5.1	19.7	2
FBRC080	278353	7457613	503	-90	360	22	12	22	10	9.6	11	4.4	17.1	2
FBRC081	278378	7457558	512	-90	360	16	0	16	16	10.6	10	4.5	17.3	2
FBRC082	278017	7457778	512	-90	360	16	0	16	16	9.22	9.7	4.6	17.8	2
FBRC083	277968	7457860	519.5	-90	360	46	0	1	1	7.27	5.5	2.7	11.6	2
FBRC083	277968	7457860	495	-90	360	46	4	46	42	10.7	10	4.1	16.2	2
FBRC084	277927	7457933	507.5	-90	360	40	0	25	25	10.8	9.9	4.6	17.7	2
FBRC084	277927	7457933	492.5	-90	360	40	27	28	1	7.12	9.5	5.8	20.8	2
FBRC086	278060	7457695	510.5	-90	360	22	1	22	21	9.45	9.8	4.2	16.5	2
FBRC087	278111	7457600	519	-90	360	22	0	2	2	10.3	9.7	4.5	19.5	2
FBRC087	278111	7457600	507.5	-90	360	22	3	22	19	9.5	9.8	4.6	17.1	2
FBRC088	278161	7457509	516.5	-90	360	22	0	3	3	12.5	9.8	5.1	21.4	2
FBRC088	278161	7457509	503.5	-90	360	22	7	22	15	9.91	9.6	4.5	17	2
FBRC089	277944	7457511	515	-90	360	28	0	2	2	11.1	10	6.1	21.1	1
FBRC089	277944	7457511	492.5	-90	360	28	19	28	9	9.39	9.3	4.2	15.7	2
FBRC090	277898	7457584	493	-90	360	28	18	28	10	8.65	8.9	4.3	16	2
FBRC091	277847	7457655	492	-90	360	28	20	28	8	8.52	8.8	4.3	16.1	2
FBRC092	277798	7457754	490.5	-90	360	28	23	28	5	8.57	9.7	4	14.8	2
FBRC093	277751	7457844	501	-90	360	28	2	28	26	9.72	9.5	4.4	16.5	2
FBRC094	277701	7457932	516.5	-90	360	28	0	3	3	8.35	7.3	3.9	17.1	2
FBRC094	277701	7457932	512.5	-90	360	28	4	7	3	7.89	10	5.4	22.1	2



BLACK CANYON

FBRC094	277701	7457932	509	-90	360	28	8	10	2	7.75	10	6	23.6	2
FBRC094	277701	7457932	506.5	-90	360	28	11	12	1	8.02	9.3	6.3	23.8	2
FBRC097	277522	7457830	512.5	-90	360	34	3	4	1	7.76	7.5	3.2	13.4	2
FBRC097	277522	7457830	496.5	-90	360	34	5	34	29	11.4	10	4.6	17.1	2
FBRC099	278794	7457658	513.5	-90	360	28	1	20	19	10.1	10	4.3	16.7	2
FBRC100	278829	7457568	516.5	-90	360	22	1	10	9	9.16	9.8	4.8	18.5	2
FBRC100	278829	7457568	510	-90	360	22	11	13	2	8.34	11	5.6	20.3	2
FBRC101	278608	7457551	510.5	-90	360	22	1	22	21	10.4	9.7	4.2	16	2
FBRC102	278661	7457460	513	-90	360	22	0	22	22	9.86	9.2	4.2	16.5	2
FBRC103	278713	7457372	515	-90	360	40	0	18	18	10.3	10	5	19	2
FBRC105	278441	7457438	509	-90	360	22	0	22	22	10.7	9.7	4.2	16.3	2
FBRC106	278498	7457349	511	-90	360	22	0	22	22	10.8	9.5	4.1	15.6	2
FBRC107	278547	7457267	509	-90	360	22	0	22	22	9.83	9.2	4.3	16.7	2
FBRC108	278581	7457171	514	-90	360	22	0	12	12	9.33	9.7	4.9	18.7	2
FBRC109	278638	7457098	517.5	-90	360	22	0	1	1	7.4	11	3.2	13.9	2
FBRC109	278638	7457098	513.5	-90	360	22	4	5	1	7.14	8.6	6.1	22.6	2
FBRC109	278638	7457098	510.5	-90	360	22	7	8	1	7.27	7.3	6.1	22.2	2
FBRC110	278270	7457333	518	-90	360	22	0	4	4	7.89	7.8	4.2	17.5	2
FBRC110	278270	7457333	506.5	-90	360	22	5	22	17	9.42	9.9	4.3	16.6	2
FBRC111	278316	7457253	509	-90	360	22	0	22	22	9.68	9.7	4.2	16	2
FBRC112	278370	7457160	509	-90	360	22	0	22	22	10.2	9.4	4.2	15.9	2
FBRC113	278407	7457080	511	-90	360	22	0	22	22	9.94	9	4.2	16.2	2
FBRC114	278472	7456988	512.5	-90	360	22	0	15	15	9.54	9.2	4.6	17.7	2
FBRC115	278285	7456900	505	-90	360	22	0	22	22	9.89	9	4.2	16	2
FBRC116	278249	7456970	505	-90	360	22	0	22	22	9.87	9.5	4.2	16	2
FBRC117	278189	7457073	507	-90	360	22	0	22	22	9.51	10	4.4	16.6	2
FBRC118	278153	7457147	506	-90	360	24	0	24	24	9	9.1	4.3	16.4	2
FBRC119	278107	7457230	503	-90	360	22	8	22	14	8.92	9.2	4.5	16.8	2
FBRC120	278049	7457325	498.5	-90	360	22	17	22	5	8.97	9.4	4.4	16.1	2
FBRC121	278006	7457403	515.5	-90	360	22	0	1	1	10	8.1	5	23.7	1
FBRC121	278006	7457403	495	-90	360	22	20	22	2	8.86	10	4.4	15.9	2
FBRC125	277926	7457144	490.5	-90	360	28	23	28	5	9.42	9.1	4.2	15.1	2
FBRC126	277969	7457058	498	-90	360	22	14	22	8	9.5	9.3	4.2	15	2
FBRC127	278017	7456958	505	-90	360	22	0	22	22	8.69	9.5	4.5	16.5	2