BLACK CANYON

ASX: **BCA**

26 March 2024

Further Testwork Delivers Higher-Grade Manganese Concentrate

HIGHLIGHTS

- Heavy Liquid Separation (HLS) produced manganese (Mn) concentrates grades between **30.2% Mn & 37.4% Mn** from KR1 samples.
- HLS produced Mn concentrates grades between **29.2% Mn & 35.3% Mn** from KR2 samples.
- Several results **exceed manganese concentrate target grade specification of 30-33% Mn** from beneficiation testwork to primarily produce HPMSM feedstock from KR1 and KR2 samples.
- These outcomes illustrate the potential to produce a standard 30 – 33% Mn product and smaller volume higher grade 35 - 37% Mn product for HPMSM feedstock.
- The Company is investigating several potential sites within Western Australia, Queensland and Tasmania for the location of a downstream manganese processing facility and continues to engage with end users interested in manganese products.

Australian manganese explorer and developer, Black Canyon Limited (**Black Canyon** or **the Company**) (**ASX: BCA**) is pleased to provide an update on activities in relation to production of beneficiated manganese concentrate feedstock from the KR1 and KR2 deposits for upscaled HPMSM hydrometallurgical testwork.

Black Canyon's Executive Director Brendan Cummins said:

"The Company continues to deliver on its strategy of discovering substantial mineral resources that can be developed to produce manganese concentrates for alloying used in the steel industry and downstream HPMSM processing.

"The primary purpose of this current beneficiation testwork is to produce 100 to 150kg of manganese concentrate from KR1 and KR2 samples that can be used for further detailed hydrometallurgical testwork as we seek to optimise and refine the HPMSM flowsheet.

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Capital Structure (ASX: BCA)

Shares on Issue	70.1M
Top 20 Shareholders	41%
Board & Management	11%
Funds & Institutions	15 %

Balfour Manganese Field Highlights

Global MRE of 314Mt @ 10.5% Mn.*

Largest Resource in Western Australia.

Development Options – Traditional Mn concentrate or HPMSM processing for EV's.

**BCA Announcement 12/12/23*

"The metallurgical results are significant for two reasons. Firstly, we have achieved a higher grade manganese concentrate above our target range of 30 – 33% Mn and secondly it improves our understanding of the relationship between concentrate grade, recovery and particle size liberation.

"Using wet screening, crushing and subjecting the samples to HLS and Wifley tabling beneficiation testwork we have achieved a bonus on our objectives which opens the scope to improve overall recoveries and also examine the potential for a higher-grade manganese product in addition to a standard grade manganese product."

KR1 and KR2 Project Updates

HPMSM Feedstock Metallurgical Testwork:

Metallurgical sample preparation was completed on 400kg of RC drill chip samples collected from the BCA 100% owned KR1 and KR2 Mineral Resource Estimate (MRE) areas in late 2023. The samples were selected from five holes located across each MRE area to depths of 10m. The initial sample preparation program is designed to produce a beneficiated manganese concentrate feedstock for use in the upscaled hydrometallurgical testwork to develop and optimise the HPMSM flowsheet.

The 200kg samples from each locality were wet screened at 0.5mm to produce a fines (< 0.5mm) and a courser fraction (>0.5mm). The coarser fraction was then screened at 3.35mm and the +3.35mm material was crushed and added back to the coarse fraction so the overall material ranged between 0.5mm and 3.35mm. A subset of the coarse fraction was subjected to heavy liquid separation at varying liquid specific gravities whilst the fines were concentrated using a Wifley Table at ALSChemex and Nagrom respectively.

A summary of the results follow:

- HLS work produced Mn concentrates grades between **30.2% Mn & 37.4% Mn** at corresponding heavy liquid specific gravity between 3.0 & 3.4 from KR1 (0.5 - 3.35mm fraction).
- HLS work produced Mn concentrates grades between **29.2% Mn & 35.3% Mn** at corresponding heavy liquid specific Gravity between 3.0 & 3.4 from KR2 (0.5 - 3.35mm fraction).
- Wifley tabling testwork on fines delivered Mn concentrates graded between **29.9% Mn and 37.1% Mn** from KR1 (-0.5mm fraction).

The results are presented in Table 1 and descriptions of the samples in Appendix 1 & 2.

Table 1. Results from beneficiation testwork on KR1 and KR2 RC chip samples

Mineral Resource	Sample type	East GDA94	North GDA94	*In situ* Mn Grade (%)	Crushed and Sized	Size fraction	Calculated Feed Mn Grade (%)	Beneficiated Manganese Upgrade			
					Assayed Mn grade (%)			Method	Parameter	Mn %	Mn Cumulative Recovery (%)
KR1	RC chip composite	276808	7475501	12.8	14.2	-0.5mm	7.6	Wifley Table	Con 1	37.1	1.9
						-0.5mm		Wifley Table	Con 2	33.4	14.5
						-0.5mm		Wifley Table	Con 3	29.9	27.1
KR1	RC chip composite	276808	7475501	12.8	14.2	+0.5mm -3.35mm	24.3	HLS	SG 3.4	**37.4**	47.4
						+0.5mm -3.35mm		HLS	SG 3.2	32.7	80.0
						+0.5mm -3.35mm		HLS	SG 3.0.	30.2	90.0
KR2	RC chip composite	281404	7472003	13.6	14.4	+0.5mm -3.35mm	21.7	HLS	SG 3.4	**35.3**	56.8
						+0.5mm -3.35mm		HLS	SG 3.2	31.7	79.7
						+0.5mm -3.35mm		HLS	SG 3.0.	29.2	92.3

The results confirm previous testwork that targeted a 30% Mn to 33% Mn concentrate using density-based separation as the primary beneficiating technique. These new results show the potential to produce a higher than target grade product between **35% Mn and 37% Mn** from the coarser fraction which the Company had not previously achieved. The additional liberation of the manganese particles applied to these samples from both the HLS and Wifley Tabling testwork have also confirmed our overall manganese recoveries.

Considering these results, the next phase of testwork will be to select a preferred target separation density media prior to applying this to a larger scale Dense Media Separation (DMS) test on the +5mm-3.35mm KR1 and KR2 products. This work is currently being scheduled.

Downstream Processing Site Location Evaluation

Black Canyon has been investigating potential sites from Western Australia, Queensland and Tasmania with a focus on existing industrial precincts with established infrastructure, complementary industries, access to consumables/reagents and renewable energy sources.

The Company is pursuing an Australian based option to be compliant with the IRA tax credit subsidies, proximity to Asian based customers and State and Federal Government Funding initiatives specifically designed for developing critical minerals projects. A location in a dominantly renewable energy hub will assist in minimising the carbon footprint of the operations which are also attractive to European based customers with the Battery Passport Regulations requiring mandatory carbon footprint declarations and labelling for EV batteries from early 2027.

The evaluation is progressing well, and the Company is working to select the most optimal location within Australia.

-END-

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

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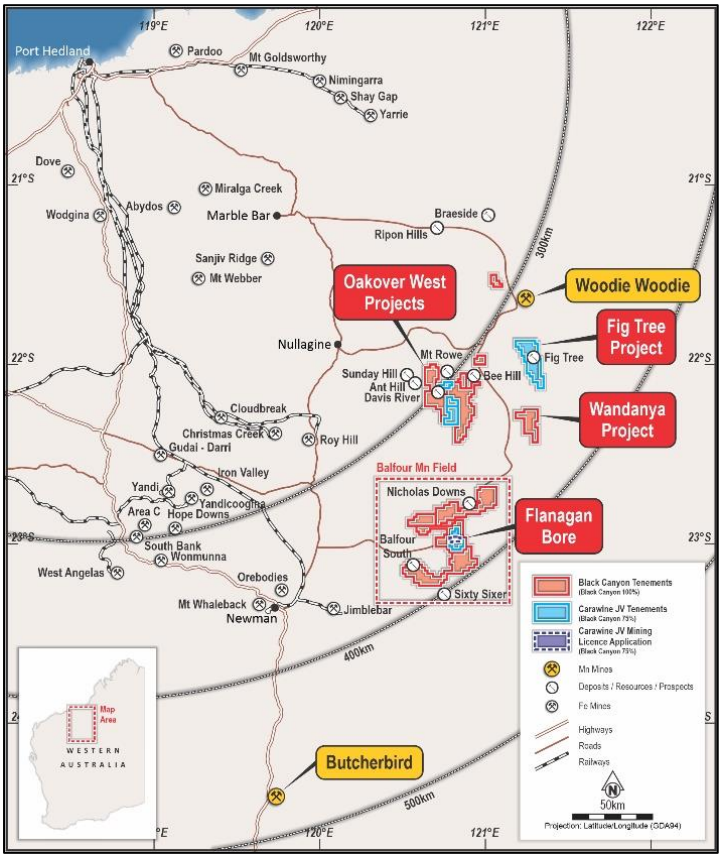
About Black Canyon



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

The emerging 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. A Global Mineral Resource (Measured, Indicated & Inferred) of 314 Mt @ 10.4% Mn has been defined across the Balfour Manganese Field projects.

Manganese continues to have attractive long-term 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 metallurgical testwork results is based on information reviewed by Mr David Pass, who is a Member of the Australasian Institute of Mining and Metallurgy. Mr Pass is an employee of BatteryLimits and consultant to Black Canyon Limited. Mr Pass has sufficient experience relevant to the mineralogy and type of deposit under consideration and the typical beneficiation thereof to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012 Edition). Mr Pass consents to the inclusion in the report of the matters based on the reviewed information in the form and context in which it appears.

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, 27 November 2023 and 12 December 2023 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.*

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 weighed 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 Mineral Resources and Exploration Target Estimates.* *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.*	*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.* *The samples collected from KR1 and KR2 were sub-sampled from the 1m RC drill chip bags that were preserved on site at each drill hole location. The samples were taken from the top 10 metres at each prospect and evenly across the potential early years starter pits at each locality to maximise representivity.*
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:* *Al2O3, BaO, CaO, Cr_2O_3, Fe, Fe2O3, K2O, MgO, Mn, MnO, Na2O, P2O5, SiO2, SrO, TiO2* *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 Mineral Resources and Exploration Target 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 Mineral Resources and Exploration Target Estimate as reported.* *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 KR1 was conducted via a conventional drill grid. The nominal drill spacing was 100 m along east-west traverses and each traverse was spaced approximately 200 m apart north-south. The drill spacing was sufficient to establish grade and geological continuity.* *The 2023 drilling completed at KR2 was conducted via a conventional drill grid. The nominal drill spacing was 200 m along east-west traverses and each traverse was spaced approximately 200 m apart north-south. The drill spacing was sufficient to establish grade and geological continuity.* *Variography has demonstrated current drill spacing supports an Indicated and 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 KR1 and KR2 the drill lines were oriented east-west across the strike of the primary mineralisation trend. The drill holes were completed at 90 degrees (vertical).* *The mineralisation is relatively flat lying exhibiting a gentle dip to the west at KR1.* *At KR2 the drill lines are oriented perpendicular to the interpreted strike of the outcropping mineralisation. Post completion of the drill program the strike of the mineralisation is mostly likely north-north-west.* *The drill grid is assumed to be located 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 Mineral Resources and Exploration Target 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 KR2 and KR2 deposits are located within tenement E46/1383 held by Black Canyon Ltd. The tenement was acquired 100% by Black Canyon from Killi Resources in March 2023. All mineral rights apart from copper are 100% owned by Black Canyon Ltd. Tenement E 46/1383 was granted on 11/04/2022 and expires on 10/04/2027.* *The tenement of which the KR1 and KR2 are located are subject to a native title agreement with the Karlka Nyiyaparli Aboriginal Corporation. Archaeologic and Ethnographic heritage surveys have been completed on the KR1 and Kr2 deposits which has enabled the drilling to be completed.* *There are no other known impediments to obtaining a licence to operate in the area.*
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.*

Criteria	Explanation	Comment
		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 KR1 and KR2 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.*
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 listing of drill holes and their corresponding coordinates, elevation and depth and composited sample results are listed in Appendix 2.*

Criteria	Explanation	Comment
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.*
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 KR1 deposit is mostly flat lying exhibiting a gentle dip of mineralisation to the west and 90-degree (vertical) drill holes considered appropriate.* *The mineralisation of the KR2 deposit is primarily strata bound striking approximately 160 degrees and forming a potentially open synformal fold structure. At this initial stage drilling 90-degree (vertical) drill holes is 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 ASX release on November 2027 2023 for further detailed information.*
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*	*Diamond Core drilling is planned to generate bulk sample for metallurgical testwork to produce beneficiated manganese concentrate based on geological domains.*

Criteria	Explanation	Comment
	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.	*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 samples described in this release are being used to advance the hydrometallurgical understanding of treating manganese oxide samples which will lead to further improvements in knowledge and optimisation of the process to design a Pilot Plant.*
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 scoping and 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 and expansion drilling to upgrade the Exploration Targets to Mineral Resource Estimates in update Inferred and Indicate Mineral resources to high confidence categories.* *Undertake a suitable topographic survey (preferably LiDAR) to improve accuracy of the topographic DTM surface used for modelling purposes.* *The work described in this release will be used to produce a beneficiated manganese concentrate that will be used for downstream process flowsheet development that will eventually inform the Pilot Plant.*

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 Pickering 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 Exploration Targets and Mineral Resources*
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. Both the KR1 and KR2 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 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 north-south (180 degrees) for the KR1 deposit forming an extensive outcrop on the east and gently dipping to the west. It has been cross cut by some dolerite dykes particularly on the southern margin of the deposit. The dominant north-south strike*

		direction was confirmed by horizontal continuity and variography analysis. *The KR2 mineralised zone most prominent strike direction is north-north-west (345 degrees). Only the outcrop has been drilled with the geology forming an open synformal structure which remains open to the northwest.* *Generally, the mineralisation for the KR1 deposit has been well defined from the maiden drill program in 2023. It remains open to the north for an additional 3km but closed to the south.* *The majority of the outcropping KR2 deposit has been well drilled. It remains open to the north-west where it may be concealed by shallow quaternary cover. To the south the drilling and mineralisation is terminated at the lease boundary.*
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.*	*Widespread, continuous manganese mineralisation was encountered at KR1 with stronger zones of surface manganese enrichment intersected along 400 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 KR2 deposit mineralised shale is between approximately 300 m wide and 700 m wide and approximately 1000 m long. Mineralisation remains predominantly open to the west and north northwest at this stage of exploration. A high portion of the drillholes end in mineralisation with the deepest hole encountering mineralisation to 36m depth.*
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*	*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 50 x 100 x 1 (XYZ) for KR1 and 100 x 100 x 1 (XYZ) for KR2.*

	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.*	*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.*
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	*No top or bottom cuts were used for grade interpolation.* *Mineral Resources and Exploration Targets applied cut off grades between > 7% and between 4 and 10% Mn respectively*
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 Estimate.*

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 Mineral Resources and Exploration Targets and only allow for preliminary commentary with no detailed chemistry or sizing of mineral species.* *Based on another manganese hosted shale deposit that have been mined previously 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 environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.*	*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.*
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),*	*At this stage of exploration average density values were applied to KR1 and KR2 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*

	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.*	*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 KR1 and KR2 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 Indicated and Inferred classification for the KR1 and KR2 deposits respectively was based on the following criteria: drill hole spacing, down hole density spacing, appropriate grade constraints and domain controlled variography.* *The classification of the Indicated and 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 Mineral Resources and Exploration Target Estimate has been undertaken.*
Discussion of relative accuracy/ confidence	*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.* *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages,*	*Variography was used to support the drill hole spacing for the selected JORC Classification.* *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 KR1 and KR2 deposits within the tenement area.* *There has been no production to date.There has been no production to date.*

	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.*	

APPENDIX 2: SUMMARY DRILL HOLE COLLAR AND COMPOSITES Selected for the metallurgical testwork (>7% Mn).

Hole id	East (WGS84)	North (WGS84)	Rl	Dip	Azimuth	Deposit	From depth	To depth	Int	Mn %	Fe %	Al %	Si %	Zone
KRRC003	276814	7475097	524.5	-90	360	KR1	0	7	7	17.3	11.39	6.63	15.56	2
KRRC014	276801	7475304	522	-90	360	KR1	0	10	10	14	9.389	5.71	20.31	2
KRRC046	276808	7475501	517	-90	360	KR1	1	7	6	14.2	9.982	5.54	20.48	2
KRRC047	276897	7475498	515.5	-90	360	KR1	0	10	10	10.2	7.415	5.21	19.91	2
KRRC055	276902	7475701	511.5	-90	360	KR1	0	10	10	10.4	8.348	4.67	16.84	2
KRRC099	281402	7472401	500	-90	360	KR2	0	10	10	13.5	10.77	4.41	18.2	2
KRRC103	281502	7472204	500	-90	360	KR2	0	10	10	14.3	11.55	4.09	17.2	2
KRRC105	281404	7472003	500	-90	360	KR2	0	8	8	13.4	12.76	5.95	18.46	2
KRRC106	281662	7472003	500	-90	360	KR2	0	10	10	14.6	11.79	4.68	18.71	2
KRRC109	281601	7471802	500	-90	360	KR2	0	10	10	12.2	11.89	4.82	20.72	2