BLACK CANYON
ASX Announcement

9 June 2022 ASX:BCA

FLANAGAN BORE MANGANESE PROJECT
Initial metallurgical tests deliver Mn concentrate grades in excess of 30%

HIGHLIGHTS

- Initial testing completed on three composite samples (two from the LR01 deposit and one from the FB03 deposit) achieves grades in **excess of 30% Mn during early-stage sighter level work.**
- **Significant manganese grade uplifts** from feed grades of 11.7% and 13.7% Mn upgraded to approximately 19% and 26% Mn **through scrubbing and washing** - an important first step for beneficiation.
- Further beneficiation tests on the scrubbed/washed manganese feed material result in additional manganese grade improvements:
  - **Heavy Liquid Separation (HLS)** (used to simulate dense media separation (DMS)) achieved grades up to **35.5% Mn** from the FB03 composite sample.
  - **Ore sorting achieved grades of up to 31.3% Mn** from the FB03 composite sample.
- These results are considered highly promising given the early stage of the test work.
- The Company will now leverage off the learnings from these initial results and plan a comprehensive metallurgical program to further optimise and improve manganese grade with the goal of designing a robust flowsheet capable of delivering a consistent saleable manganese concentrate.
- Preliminary discussions with marketing specialists indicate manganese concentrates with key characteristics similar to ore from Flanagan Bore would be suitable for **silico or ferro manganese alloying as feedstocks into the steel manufacturing industry**
- Initial manganese concentrate leaching test work to be undertaken as part of an overall strategy to add value through downstream processing to potentially **produce high-purity manganese sulphate for the growing electric vehicle battery market**

Australian manganese explorer, Black Canyon Limited (**Black Canyon** or **the Company**) (ASX:**BCA**), is pleased to announce that initial metallurgical test work has delivered highly promising results, achieving concentrate grades of more than 30% Mn. A total of three composite samples (PQ3) were tested from across the LR1 and FB3 deposits where a higher-grade subset of the Mineral Resource Estimate comprising 33Mt @ 12.8% Mn (Indicated) has been defined (ASX release 13 April 2022). Preliminary discussions with commodity marketing specialists indicate that manganese concentrates with similar key characteristics to the potential ore processed at Flanagan Bore would be suitable for silico or ferro manganese alloying as feedstocks into the steel manufacturing industry.

Further engagement with a number of commodity traders and other interested parties will continue as the Company refines it flowsheet to deliver a saleable manganese product.

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 in the east Pilbara region of Western Australia.

Black Canyon Executive Director, Brendan Cummins, said: *"Since discovering FB3 and drilling out LR1 to define a significant Mineral Resource at Flanagan Bore, the Company has been keen to progress this initial metallurgical test program to establish important baseline materials characteristics and general processibility of the higher-grade manganese ore.*

"Evaluating heavy liquid separation as a proxy for DMS and ore sorting beneficiating techniques to achieve 30% plus manganese grades from a number of tests has provided invaluable data that we can use to further optimise and refine our testing process. We will embark upon more detailed metallurgical test work to develop a robust flowsheet capable of consistently processing a variety of ore types from Flanagan Bore to be in a position to produce a concentrate sought after in the marketplace."

*"Black Canyon is also undertaking leaching testwork on our manganese concentrates. This testwork will help to determine its ability to generate manganese enriched solutions from which manganese sulphate of sufficient quality can be potentially extracted for use as cathode precursor material in demand for nickel-**manganese**-cobalt (**NMC)** batteries.*

"It is an exciting time for Black Canyon to be involved with manganese utilised as silico or ferro manganese alloy in the steel manufacturing but also in energy storage for the electric vehicle industry. This downstream strategy is considered highly complementary and could add significant value to our manganese projects over time."

Metallurgical Test Work Objectives

The objectives of the scoping level sighter test work completed by BCA were to establish early-stage material characteristics, scrubbing and sizing analysis, variability, recoveries (where possible), potential flowsheet design options (ore-sorting and/or DMS) and product marketability. The learnings will be applied to future test work to continually improve the grade of the manganese concentrates and to understand recoveries that might apply across the mineralised domains.

Scrubbing and Washing

As an important first stage of the beneficiation process, selected intervals from the drill core samples were composited and thoroughly combined. A total of three samples were generated based on deposit location and observed textural differences in manganese band thickness and shale content as logged from drill core. At LR1 upper (thinly banded manganese) and lower (thickly banded manganese) composites were generated, whilst at FB3 one composite was created from moderately banded manganese. The three 50kg samples were crushed to 50mm, then scrubbed and washed for 7.5 minutes, with the results of the manganese content upgrades presented in Table 1.

Table 1. Manganese content upgrades from scrubbing and washing

Composite	Mn Calc Feed Grade (%)	Scrubbing and washing Mn grade (%)	Fraction size	Mn Recovery	Relative Mn grade increase from feed
LR1 Upper	11.7	19.4	-50+10mm	76%	66%
LR1 Lower	13.6	25.6	-50+10mm	83%	88%
FB3	13.7	21.0	-50+6.3mm	89%	53%

The results show a distinct upgrade in manganese content through straightforward first stage crushing, scrubbing and washing to remove a high portion of the clay and shale mass. The manganese is also shown to be relatively coarse in size with higher percentages of recovered manganese reporting to the coarser fractions. The finer fractions contain minor low-grade manganese. Future testwork may look at recovering this finer grained manganese material subject to flow sheet development.

Figure 1. Equipment used to replicate washing and scrubbing at the laboratory and on the right-hand side LR1 Upper showing coarse manganese and shale fragments (-50+1.18mm fractions)

Heavy Liquid Separation (HLS)

Heavy liquid separation analysis was used to approximate DMS. At the commencement of the HLS phase, a number of sighter tests were undertaken to evaluate achieved manganese grades using various liquid densities and fraction sizing applied to raw scrubbed/washed material in addition to crushing and sizing raw scrubbed and washed feeds to increase liberation.

Recoveries are not reported at this sighter level stage because this initial test work is aimed at investigating Mn grade of the coarser fractions, across a number of feed size fractions and varying heavy liquid densities. The test work was also designed to confirm proof of concept in delivering a potentially marketable manganese product. Based on the learnings gained from this initial sighter level tests more comprehensive programs are planned in the future to examine the grade and recoveries across various processing stages and size fractions.

The HLS test results for the -8+1mm fractions are summarised in Table 2.

Table 2. Manganese content upgrades using various density liquids applied to a crushed -8+1mm size fraction

Composite	Mn Calc Feed Grade (%)	Scrubbing and washing Mn grade (%)	HLS Mn grade (%)	Fraction size	Liquid Density	Relative Mn grade increase from feed
LR1 Upper	11.7	15.3	24.1	-8+1mm	3	106%
		15.4	28.1	-8+1mm	3.3	140%
LR1 Lower	13.6	24.1	26.5	-8+1mm	3	95%
		23.8	28	-8+1mm	3.3	105%
FB3	13.7	21.3	28.3	-8+1mm	3	107%
		20.5	30.8	-8+1mm	3.3	125%

Strong upgrades from the initial manganese ore feeds are shown across all samples. The tests show the highest upgrade is from “LR1 upper”, which typically has thinner manganese bands when compared to the LR1 lower and FB3 samples.

Based on the liberation characteristics achieved in the -8+1mm fraction, the various composites were further crushed to -4mm+1mm and submitted for HLS using a slightly higher liquid density. The aim of this test was to determine if a finer crush would assist manganese particle liberation and therefore improve manganese grade.

The HLS test results for the -4+1mm fractions are summarised in Table 3.

Table 3. Manganese content upgrades using HLS applied to a crushed -4+1mm size fraction

Composite	Mn Calc Feed Grade (%)	Scrubbing and washing Mn grade (%)	HLS Mn grade (%)	Fraction size	Liquid Density	Relative Mn grade increase from ore feed
LR1 Lower	11.7	18.1	29.7	-4mm+1mm	+3.5	153%
LR1 Upper	13.6	24.4	31	-4mm+1mm	+3.5	127%
FB3	13.7	19.3	35.5	-4mm+1mm	+3.5	159%

The results show a finer crush is able to produce a higher grade manganese concentrate. This could be further enhanced with additional test work focussing on understanding the liberation of manganese from the gangue materials and thickness of the manganese bands across the orebody.

The overall manganese upgrades and consistency achieved across all three composites at the two crushed size fractions indicate that dense media separation as a beneficiation technique has considerable merit with further detailed test work warranted.

Ore Sorting

Black Canyon submitted a scrubbed/washed coarse grained fraction comprising material from the plus 18mm size fraction from each LR1 Upper, LR1 Lower and FB3 composites to Steinert in Perth for ore sorting testwork. Prior to running the samples through the ore sorter, the material was characterised by Steinert to identify a sorting algorithm based on three sensor types – colour, shape and density for each composite submitted.

A coarser size fraction was selected on the basis that the Company was submitting relatively small 20kg samples through a full scale ore sorter at the Steinert facility and a coarser feed was likely to replicate how the equipment may be utilised once in a production environment. A -18mm fraction was also submitted, but as expected, there was no appreciable manganese upgrade in this smaller size fraction based on the small sample size and size/capacity of the ore sorter equipment.

The overall achieved grades are presented in Table 3. The testwork has shown that when ore sorting is applied to coarser manganese enriched samples, significant upgrades can be achieved. The best result was from the FB3 composite that through the process has shown a 128% increase in manganese content from an in-ground feed of 13.7% Mn to a beneficiated grade of 31.3% Mn showing incremental upgrades across each process stage.

Table 4. Manganese content upgrades through simple scrubbing/washing and ore sorting from the plus 18mm fraction

Composite	Mn Calc Feed Grade (%)	Scrubbing and washing Mn grade (%)	Ore Sorter Mn Grade	Fraction size	Relative Mn grade increase from ore feed
LR1 Upper	11.7	18.8	23.2	+18mm	98%
LR1 Lower	13.6	26.5	28.2	+18mm	107%
FB3	13.7	19.2	31.3	+18mm	128%

The testwork has shown that ore sorting would be more effective when applied to the thicker banded manganese ores and this style of beneficiation may deliver higher manganese grades. As part of flow sheet development, the Company will continue to investigate the application of ore sorting using larger sample sizes (several tonnes). If successful, ore sorting would be a cost effective method of enhancing manganese grade through potentially a scalping circuit removing low grade or waste prior to additional beneficiation techniques such as DMS.

Figure 2. The Steinert ore sorter at Bibra Lake, Perth that was used to test +18mm samples from Flanagan Bore. The right-hand image is the +18mm material from the LR01 Lower composite

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

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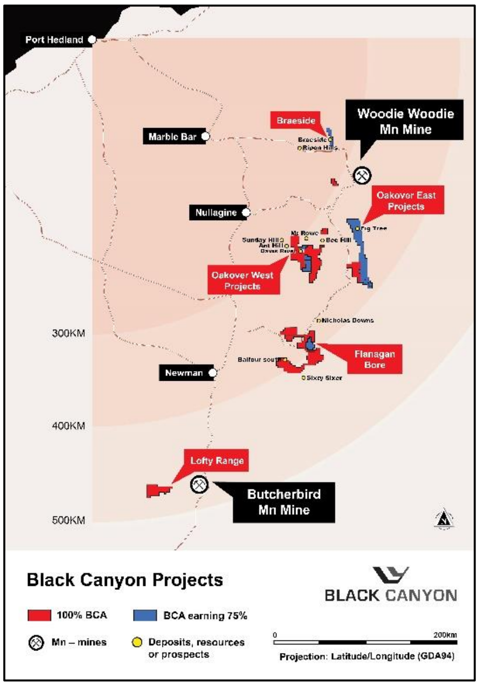
About Black Canyon



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 km^2 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 km^2 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 metallurgical test work 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 and 13 April 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.

Appendix 1. Flanagan Bore Diamond drill collar information and metallurgical composite assay results from LR1 Upper, Lower and FB3

Hole id	Prospect	RC twin hole	East (GDA94)	North (GDA94)	Rl	EOH (m)	Dip	Azimuth	Metallurgical Composite ID	From (m)	To (m)	Interval (m)	Mn (%)	Fe (%)	Composite Grades
DDLR01	LR1	LLRC08	274351	7456998	509	42.4	-90	360	LR1 Upper	0	17	17	11	9.7	17m @ 11% Mn from surface
									LR1 Lower	17	37	20	14.2	10.6	20m @ 14.2% Mn from 17m depth
DDLR02	LR1	LLRC06	274135	7456947	512	22.2	-90	360							
DDLR03	LR1	FBRC022	274157	7456802	508	42.8	-90	360							
DDLR03B	LR1	FRRC018	273948	7456795	506	30.2	-90	360							
DDLR04	LR1	LLRC03	273957	7456935	509	32.1	-90	360							
DDFB301	FB3	FBRC060	278486	7458151	540	54.6	-90	360	FB3	0	29	29	14.9	14.4	29m @ 14.9% Mn from surface
DDFB302	FB3	FBRC066	278268	7458145	536	50.2	-90	360							
DDFB303	FB3	FBRC076	278160	7457962	527	44.1	-90	360							
DDFB304	FB3	FBRC083	277971	7457859	523	42.7	-90	360							
DDFB305	FB3	FBRC079	278291	7457706	526	30.6	-90	360							
DDFB101	FB1	WD0023	277322	7462046	519	30.6	-90	360							
DDFB102	FB1	WD0021	277274	7462447	523	30.7	-90	360							
DDFB103	FB1	FBRC163	276724	7462627	521	24.7	-90	360							

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Appendix 2. JORC 2012 Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
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.*	• The samples were collected using industry standard diamond drilling (DD) methods . • Drilling was completed by Topdrive Drilling who completed the entire DD drill program – 13 holes for 478m • The drilling and sample techniques are considered representative for the style of mineralisation utilising conventional triple tube equipment to maximise recoveries
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).*	• The drill type is diamond core (DD) drilling vertical holes • The external drill diameter us 122mm but the PQ3 core diameter of 83mm
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.*	• Core recovery was estimated by the geologist on the rig and secondly by measuring the length of the core recovered between metre intervals and calculating the overall recovery • The drill recoveries were deemed acceptable • No sample bias due to sample loss is evident from the observed sample recoveries
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.*	• Drillhole logging was completed at the drill site recording lithology, texture, grain size and colour plus geotechnical parameters – RQD and fracture counting. • The core trays were photographed wet and dry and used to further detailed logging post the drill program • The logging was considered appropriate for exploration reporting and eventually metallurgical and geotechnical evaluations • Every 1m interval as logged for the entire drill program – 478m
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 diamond drill metallurgical composites core samples were not cut or assayed. Full core was used for the metallurgical testwork programs • The grades were approximated from twin RC drill holes • The 1m RC samples were gathered by using a levelled cone splitter of the side of the rig • The samples were dominantly dry • Black Canyon inserted Certified Reference Material (CRM) at a rate of 1/50, blanks at a rate of 1/50 and field duplicates from the cone splitter at a rate of 1/50 for a total insertion rate of QA/QC materials at 6% • The sub sampling technique and quality control procedures is considered appropriate to ensure sample representivity • The sample size is considered appropriate for the grainsize and style of mineralisation
Quality of assay data	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and*	• The diamond drill metallurgical composites core samples were not cut or assayed. Full core was used for the

Criteria	JORC Code explanation	Commentary
and laboratory tests	*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.*	metallurgical testwork programs • The grades were approximated from twin RC drill holes • The RC samples were submitted to NATA accredited ALSChemex in Wangara • The 2 – 3kg samples was sub-split to 750gram and pulverised with 85% passing 75µm • The sample was then analysed using method ME-XRF26s for manganese ores using fusion disc XRF for Fe, SiO2, Mn, Al2O3, TiO2, P2O5, S, MgO, K2O, Na2O, CaO, BaO, Cr2O3 and ZrO2 • Review of the quality control results received to date that include CRM, blanks, duplicates show an acceptable level of accuracy (lack of bias) and precision has been achieved. • In addition ALSCHEMEX has undertaken its own internal QAQC checks using CRM, Blanks and pulp duplicates and no issues have been reported or identified • The CP is satisfied that the analysis was completed to an acceptable standard in the context in which the results have been reported
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.*	• The diamond drill metallurgical composites core samples were not cut or assayed. Full core was used for the metallurgical testwork programs • The grades were approximated from twin RC drill holes • The significant intersections have not been verified by independent personnel • Two of the RC drill holes completed in 2021 were designed to twin the 2012 generation of drilling. The results do not show evidence of bias and no assay data has been adjusted
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.*	• Once a DD hole was completed the drill collar was located using a GARMIN handheld GPS with an accuracy of +/- 5m • The drill collars will be eventually located using a DGPS system once a suitable contractor has been engaged • The grid system is UTM zone 51, GDA94 datum • The topography is quite flat reflecting the underlying stratigraphy. The holes are shallow and downhole deviation is not considered material in the context of these results
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.*	• At LR1 and FB3 drill spacing of the DD drill program is not relevant because they are do not form part of a MRE • They were located to approximate a range of manganese grades and geological variations • The diamond core metallurgical samples were selected and composited
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.*	• The deposit is flat and gently plunging. Drill logs and assay data have identified cross cutting dolerite dykes that may have intruded into zones of structural weakness which does appear at this early stage to terminate the prospective horizon to the south • The drill hole orientation otherwise is suitable for this style of mineralisation and considered appropriate and unlikely to introduce sample bias
Sample security	• *The measures taken to ensure sample security.*	• The diamond core was secured to pallets and stored on site until the drill program was completed • The samples were then trucked to Perth in one consignments and delivered directly to ALSCHEMEX in Balcatta
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Other than internal review by Company staff no audits have been completed. • The CP was on site for the duration of the DD and RC drill program and considers the sampling and sub sampling techniques to be equal to industry standard and appropriate for the style of mineralisation and the results being reported.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• The drilling was undertaken on granted tenement E46/1301 • Black Canyon has a farm-in and joint venture agreement with Carawine Resources Ltd (ASX:CWX), Black Canyon has earnt an initial 51% interest in the projects and is currently earning up to 75% in the Carawine Projects that includes E45/1301 • The tenement has a native title Heritage Protection Agreement with the Karlka Nyiyaparli People that required a Heritage Survey to be undertaken prior to ground disturbing activities. To this end an Ethnographic and Archeologic survey was completed prior to commencement of site activities • There are no other known impediments to exploring E46/1301
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 tenement E46/784 between 2010 and 2015 and carried out exploration work. • 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.
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Flanagan Bore tenement is located within the Oakover Basin, the edges of which are defined by the Neoarchaean Fortescue Group. Most of the tenement is covered by quaternary alluvium, sheetwash and outcrop only exists within the southern part and consists of rocks of the Manganese Group, mainly the Encheddong Dolomite and Balfour Formation. The tenement contains widespread manganese scree associated with manganese enriched Balfour Formation shales • The LR1 prospect can be separated into three primary units, the upper unmineralised Balfour shale, the mineralised Balfour shale and the lower basal shale unit. The upper unmineralised shale is brown grey in colour and occurs from surface up to 10 m in depth intermittently across the project area. • The manganiferous shale unit contains a supergene enriched manganiferous horizon which exhibits thickness range between 15 m to 37 m depth gently dipping to the south, progressively thickening to the east-south-east. The manganese layers are confined to distinct banding within the Balfour and there are also minor occurrences of interbedded red/brown shales intermixed within saprolitic clay bands.

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*
		• Refer to Appendix 1 for a complete listing of the DD drill holes completed at LR1, FB3 and FB1 by Black Canyon

Criteria	JORC Code explanation	Commentary
	this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	
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.*	• The diamond drill metallurgical composites core samples were not cut or assayed. Full core was used for the metallurgical testwork programs • The grades were approximated from twin RC drill holes • Only length (1m) weighted intervals are included in the text of this release. • Manganese intervals have been reported at 7% Mn cut off allowing 1 m of dilution (<7% Mn) • Iron intervals have been reported as they coincide with the Mn intervals and no cut offs are applied • No metal equivalent values are used.
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 region is mostly flat lying exhibiting a gentle dip of mineralisation to the south, south-west therefore 90 degree angled (vertical) drill holes considered appropriate. • The mineralisation of the LR1 prospect is primarily strata bound striking approximately 90 degrees, gently dipping to the south about a regional syncline • The mineralisation of the FB3 prospect is primarily strata bound striking approximately 45 degrees, gently dipping to the southeast about a regional syncline. • The drill results reported are interpreted to represent close to true widths of the mineralisation
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.*	• These have been included in the body of the release where relevant and material to the reader's understanding of the results in regard to the context in which they have been reported.
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.*	• Information considered material to the reader's understanding of the Exploration Results has been reported. in the body of the text and significant results have selectively been reported to provide the reader with the potential tenor and widths of the mineralisation • APPENDIX 1- contains the results of the DD holes drilled into LR1 and FB3 used for the metallurgical testwork
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• All information considered material to the reader's understanding and context of the RC Exploration Results have been reported.
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.*	• Further work is planned that includes further metallurgical testwork on diamond drill core and then bulk sampling on site of various mineralogical domains once the flowsheet design has been well advanced • The Company is considering piloting of the bulk samples to confirm the flow sheet design • Down hole geophysical surveys for density and lithological mapping is also planned • Additional infill drilling is currently been undertaken • MRE upgrades are expected once all of the new assay results have been received