BLACK CANYON

KR1 & KR2 DEPOSIT
SCOPING STUDY

ASX:**BCA**
blackcanyon.com.au

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CAUTIONARY STATEMENTS

The Scoping Study referred to in this ASX release has been undertaken for the purpose of evaluating the potential development of the KR1 and KR2 deposits from the Balfour Manganese Field (BMF) Projects, Pilbara region, Western Australia. It is a preliminary technical and economic study of the potential viability of the KR1 and KR2 mineral resources. The Scoping Study outcomes include Production Targets and forecast financial information referred to in the release are based on low level technical and economic assessments that are insufficient to support estimation of Ore Reserves. The Scoping Study is presented to an accuracy level of +/- 35%. While each of the modifying factors was considered and applied, there is no certainty of eventual conversion to Ore Reserves or that the Production Target itself will be realised. Further exploration, evaluation and appropriate studies are required before Black Canyon will be able to estimate Ore Reserves or to provide any assurance of any economic development case. Given the uncertainties involved, investors should not make any investment decisions based solely on the results of the Scoping Study.

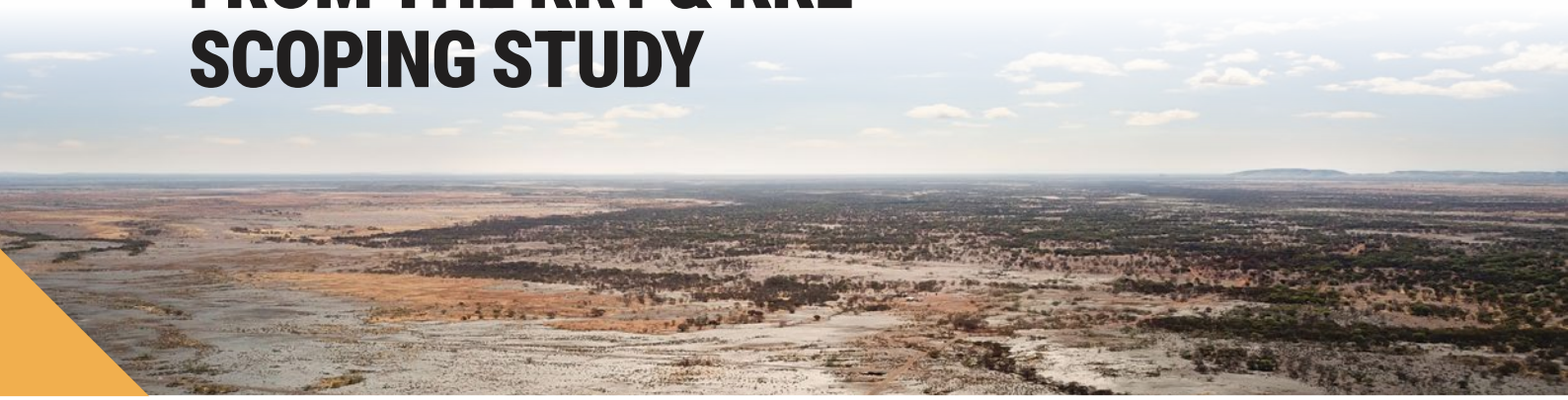
The Mineral Resources scheduled for extraction as Production Targets over the 16-year mine life are classified as Indicated (72%) and Inferred (28%) with Inferred Mineral Resources considered from year 6 onwards. The first 5 years of mining are based entirely on Indicated Mineral Resources and from year 6 to 16 the forecast Production Targets are dominated by Indicated Mineral Resources with no year relying on greater than 50% of the Production Target generated from Inferred Mineral Resources. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the estimation of Indicated or Measured Mineral Resources or that the Production Target itself will be realised. Only 15% of the Global Mineral Resource discovered across the BMF have been scheduled for mining in this Scoping Study.

The Mineral Resources underpinning the Production Target in the Scoping Study have been prepared by a competent person in accordance with the requirements of the JORC Code (2012). For full details on the Mineral Resource Estimate, please refer to the ASX announcement of 12 December 2023. Black Canyon confirms that it is not aware of any new information or data that materially affects the information included in that release and that all material assumptions and technical parameters underpinning the estimate continue to apply and have not been changed. This Scoping Study is based on the material assumptions outlined in the announcement. These include assumptions about the availability of funding. While Black Canyon considers that all the material assumptions are based on reasonable grounds, there is no certainty that they will prove to be correct or that the range of outcomes indicated by the Scoping Study will be achieved.

To achieve the range of outcomes indicated in the Scoping Study, funding in the order of A$84 million will likely be required. Investors should note that there is no certainty that Black Canyon will be able to raise that amount of funding when needed. It is also possible that such funding may only be available on terms that may be dilutive to or otherwise affect the value of Black Canyon's existing shares. It is also possible that Black Canyon could pursue other strategies such as project finance, strategic partners, a sale or partial sale of its interest in the KR1 and KR2 projects. Black Canyon has 100% ownership of tenement (E46/1383) that the KR1 and KR2 mineral resources are located within.

This announcement contains forward-looking statements. Black Canyon has concluded that it has a reasonable basis for providing these forward-looking statements and believes it has a "reasonable basis" to expect it will be able to fund development of the KR1 and KR2 Projects. However, several factors could cause actual results or expectations to differ materially from the results expressed or implied in the forward-looking statements. Given the uncertainties involved, investors should not make any investment decisions based solely of the results of this study.

POSITIVE RESULTS CONFIRMED FROM THE KR1 & KR2 SCOPING STUDY



Australian manganese developer and explorer, Black Canyon Limited (Black Canyon or the Company) (ASX:BCA), is pleased to announce positive results from a Scoping Study completed with the engagement of BatteryLimits Pty Ltd and selected independent consultants.

The Study examines the potential development of the 100% owned KR1 and KR2 Mineral Resources within the Balfour Manganese Field (BMF), located in the eastern Pilbara region of Western Australia.

$340M

NPV_8 (Before Tax)

$46M

Average Annual Cash Flow

70%

IRR (Before Tax)

$84M

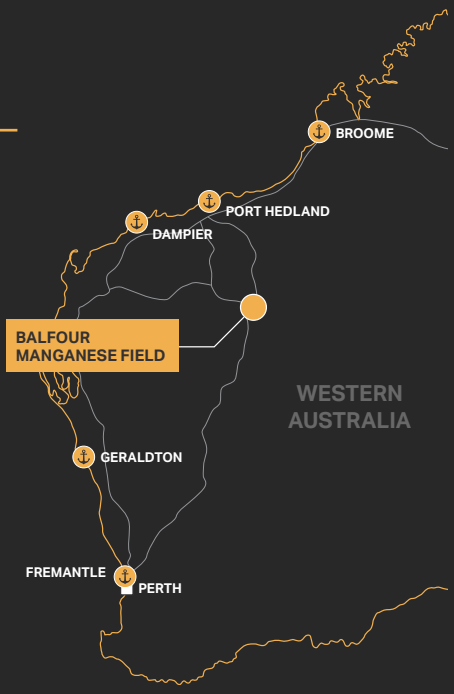
Capital Cost

<2 YRS

Payback

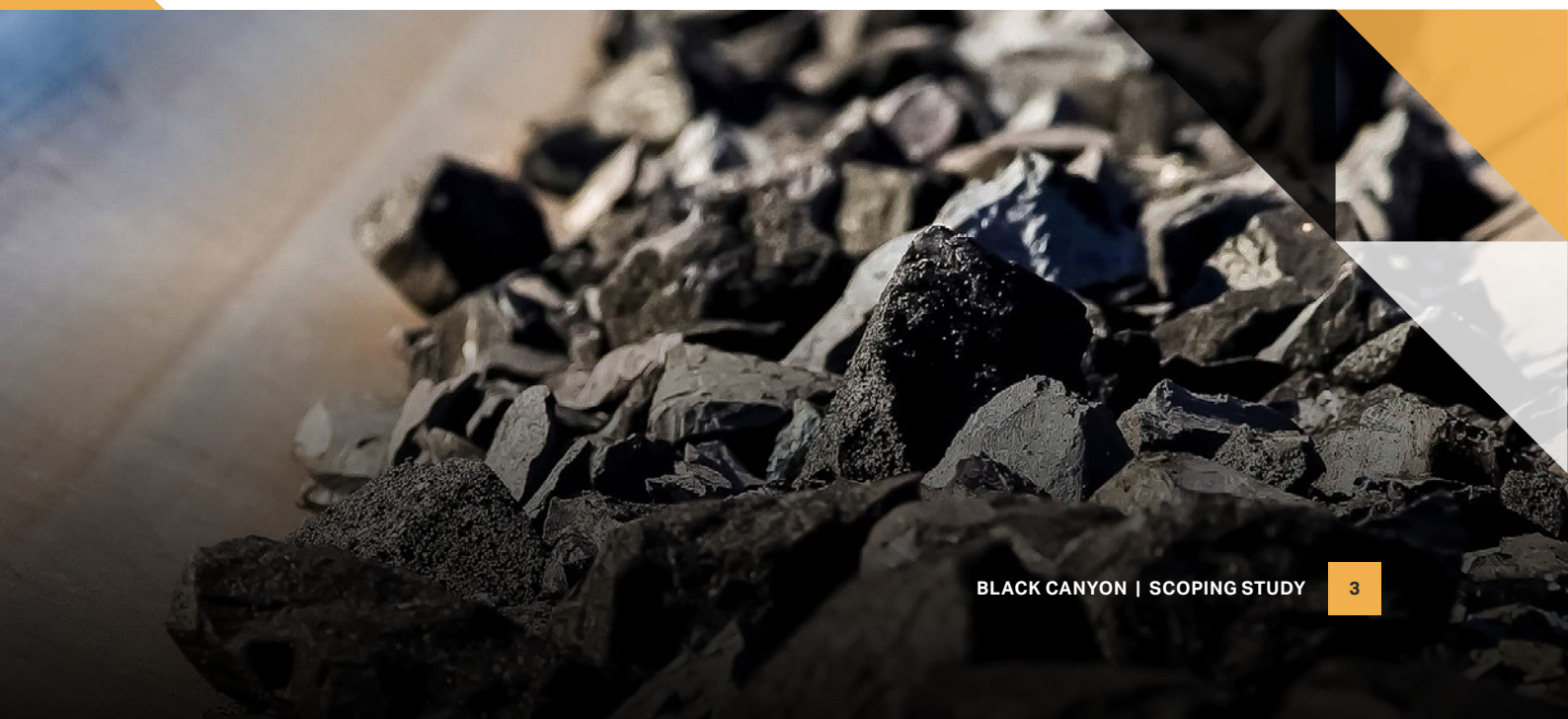
16 YR

Mine Life



HIGHLIGHTS

- Scoping Study confirms the KR1 and KR2 Mineral Resources will generate attractive financial returns based on a **16 year mine life**, with an average mining production rate of 3.0Mtpa, producing 12Mt of manganese concentrate over the Life of Mine (LOM).
- Opportunity to extend the mine life through expansion drilling and from other substantial Mineral Resources discovered by Black Canyon in the region.
- Project pre-tax **NPV of A$340m** (8% discount rate) and pre-tax **IRR of 70%**.
- LOM revenue of A$2,781m and **EBITDA of A$654m** with an average annual **operating cashflow of A$46.1m.**
- Low development CAPEX of A$84m which includes $25m of indirect costs, with a **payback period of less than 2 years.**
- LOM estimated Production Target of **48.2Mt @ 10.9%** Mn with a low strip ratio of 0.56:1.
- Concentrate sales price of US$4.60/dmtu for a 33% Mn product, with C1 cash costs of US$3.02/dmtu and **all-in sustaining cost (AISC) of US$3.38/dmtu/CIF.**
- Forecast annual production of Mn concentrate is 760,000tpa.
- Future studies will consider further project enhancements, including higher throughput, utilisation of low-cost surface miners in addition to conventional truck and shovel and a hybrid transport solution transitioning from contract to owner-based haulage.
- Potential to integrate additional mineral resources managed by BCA targeting higher grade and low strip ratios within 20 to 30 km of the processing plant.
- Metallurgical studies and associated engineering design activities are planned, in preparation for detailed feasibility evaluation along with baseline studies to support permitting and environmental approval pathway.
- The 44% Mn benchmark (CIF Tianjin) price used as the basis for this Scoping Study was based on a **long-term average price of US$5.60/dmtu with the current price over US$8.00/dmtu.**



Black Canyon Managing Director, Brendan Cummins, commented:

"The Scoping Study has delivered substantially on the Company's expectations for the KR1 and KR2 deposits. Efficient mining with a larger trucking fleet matched with increased processing throughput has demonstrated the development potential of the project. The positive findings suggest significant financial return over a 16-year period, with a pre-tax NPV of A$340 million and IRR of 70%, highlighting the robust economics of the project.

The study also indicates competitive production costs and substantial Manganese concentrate annual output. Looking ahead, the Company plans to investigate further improvements, by optimising throughput, incorporating cost-effective mining techniques and refining transport/ logistic solutions. We are not resource constrained with multiple deposits with low strip ratios and higher grades from surface also providing potential upside as we progress the project.

The utilisation of low risk conventional dense media separation as a primary separation technique will be further evaluated with the processing of life-of-mine composite metallurgical samples and several variability composites. Whilst we are satisfied that we can deliver a standard 30 to 33% Mn concentrate our next objective is to improve on the grade with ambitions to produce a higher-grade concentrate as part of our product suite.

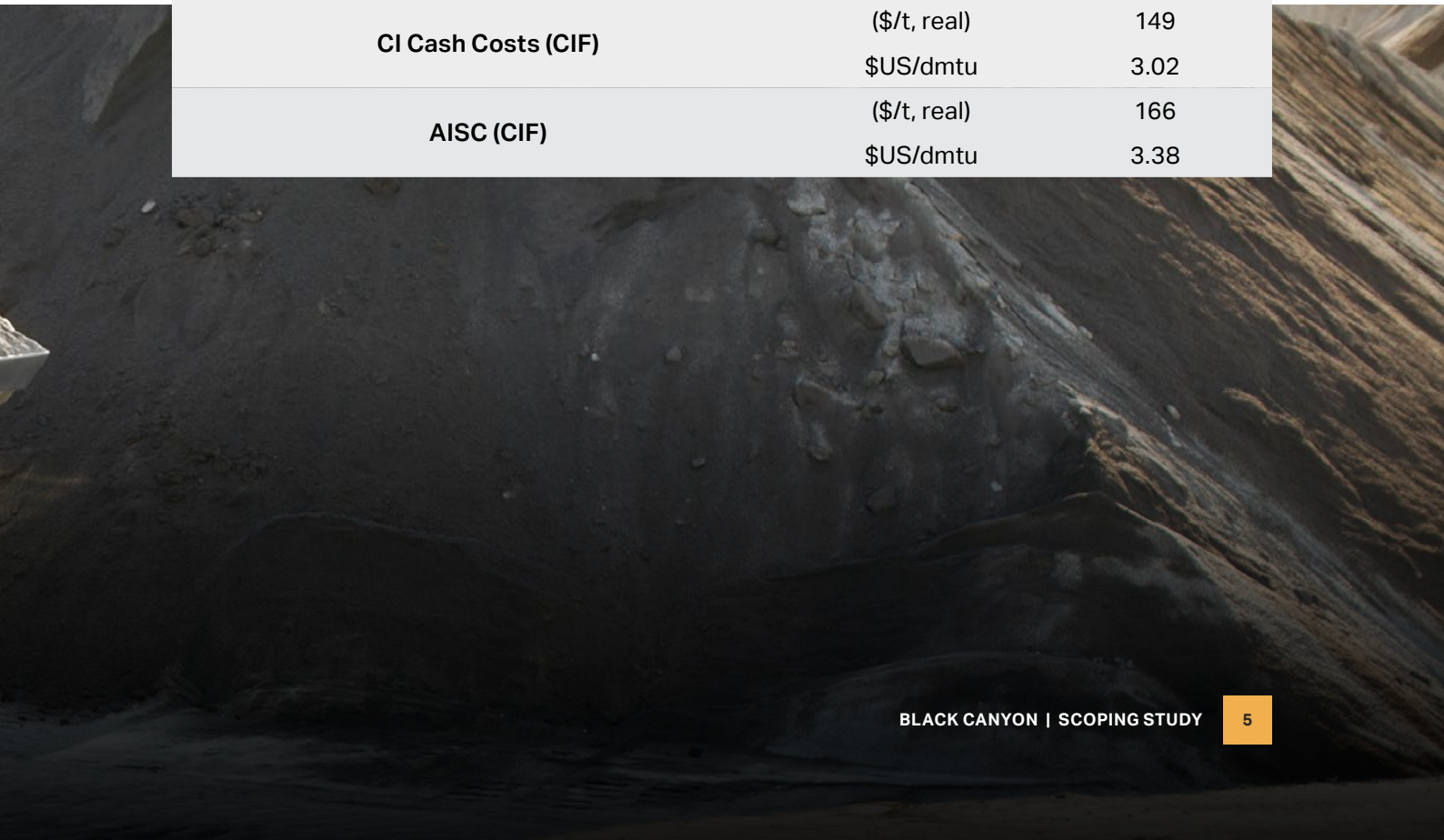
The Company can now focus on more detailed feasibility studies and prepare for the necessary permitting and environmental approvals, confident in the long-term market prospects for manganese products. We will also pursue investigations into opportunities to advance an HPMSM project in Australia with key government initiatives continuing to support downstream processing of Critical Minerals.

The Scoping Study is based on developing a mine approximately 115km northeast of Newman. Most of the manganese concentrate will be utilised by smelters to produce non-substitutable alloys used in steel manufacturing. A portion may also be used as feedstock for the downstream production of high purity manganese sulphate monohydrate (HPMSM), a critical precursor component of cathodes for batteries in electric vehicles.

The economic evaluation shows a 16-year mine life, strong cash flow and solid returns **(Table 1),** with a modest capital requirement ($84m) to produce manganese concentrate mined from Indicated and Inferred Mineral Resource Estimates (MRE) of **103Mt @ 10.4% Mn** containing **11Mt of manganese (Table 2)**. This includes a higher-grade subset, comprising Indicated and Inferred Resources of **29Mt @ 13.3% Mn (Table 3)** across the KR1 and KR2 deposits.

Table 1. Financial Performance Summary

Financial Performance Summary	Unit	LOM
Initial LOM	(years)	16
Total LOM Revenue	($ M, real)	2,781
Total LOM EBITDA	($ M, real)	654
NPV @ 8% - before tax	($ M, real)	340
IRR - before tax	(%, real)	70%
Project Capital Expenditure	($ M, real)	84
Payback Period - before tax	(years)	<2
Average Sales Price (LOM)	Product ($/t)	227
	$US/dmtu	4.60
EX rate AUD:USD	$	0.67
CI Cash Costs (CIF)	($/t, real)	149
	$US/dmtu	3.02
AISC (CIF)	($/t, real)	166
	$US/dmtu	3.38



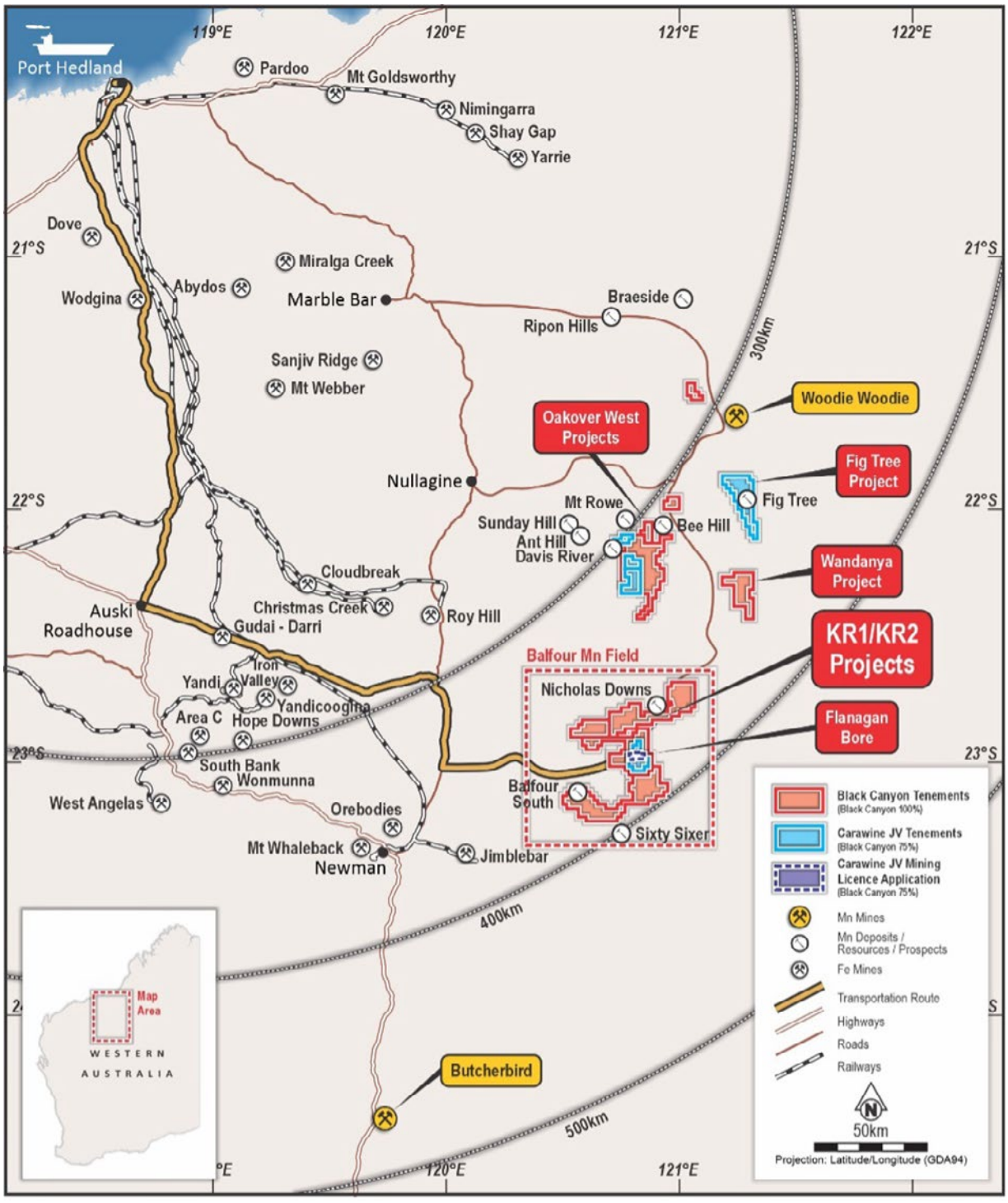


Figure 1. KR1 and KR2 projects within the BMF and planned transport route to Port Hedland.

SCOPING STUDY PROJECT DESCRIPTION

The Balfour Manganese Field (BMF) is located approximately 400km southeast of Port Hedland and 115km northeast of Newman, in the east Pilbara region of Western Australia. The MRE are hosted within a single granted exploration licence (E46/1383) owned 100% and BCA has full rights to all minerals apart from copper (refer to ASX announcement 14 June 2023 Black Canyon completes strategic tenement acquisition within the Balfour Manganese Field). The KR1 and KR2 Mineral Resources form part of the **314Mt @ 10.4% Mn** the Company has discovered since exploration commenced in December 2021 (refer ASX announcement 12 December 2023 Global Balfour Manganese Mineral Resource Estimates Exceed 300 Mt).

This Scoping Study is based on optimisations applied to the KR1 and KR2 JORC-2012 Indicated and Inferred MRE, comprising **103Mt @ 10.4% Mn** (refer to ASX Announcement 27 November 2023 KR1 and KR2 Mineral Resource Estimate Exceeds 100 Mt). The operating costs for mining and concentrate transport have been derived from contractor quotations. The processing costs and other costs have been based on similar mining operations and mineral separation processes. The capital costs have been estimated based on quotes received from suppliers, which includes installation and a number of critical spares.

Conventional free dig excavator and trucking is proposed with starter and final pits developed on the KR1 and KR2 deposits. The initial starter pits will focus on low strip ratio, higher-grade (>13% Mn) mineralisation before progressing to final pit stages that average 10% Mn. The project is currently based on a 16-year life of mine. Approximately 72% of the ore will be mined from KR1 and the remainder from KR2. There is significant opportunity to extend the mine life through expansion drilling and from other substantial Mineral Resources discovered by Black Canyon in the region.

A 3.0 million tonnes per annum (Mtpa) processing plant is proposed comprising, primary crushing using a mineral sizer, drum scrubbing, screening and secondary crushing followed by fine and coarse Dense Media Separation (DMS) circuits treating +1mm to 6.3mm (fines) and +6.3mm to 32mm (lump) feeds respectively. Lump and fine manganese concentrates will be produced, with the ability to integrate some of the fines into the lump manganese concentrate. The proposed sales strategy is to sell a lump and fines products, with some of the fine's product reserved for potential downstream processing into HPMSM. The Company plans to produce a 33% Mn product, generating approximately 760,000t of manganese concentrate per year over the LOM.

A predominantly lump and fines product will be transported using a combination of 115t and 155t road trains supplied by a contract haulage service provider. The ore will be transported to the Utah Point multi-user facility for ship loading on a campaign basis. Several haulage routes have been evaluated with further optimisation planned in future detailed studies with potential cost savings with transitioning to an owner trucking fleet. Truck haulage costs include a component for road maintenance and road upgrades. At Port Hedland, the Company intends to utilise large vessels with a minimum freight size of 50,000t to reduce CIF costs. This Scoping Study has an accuracy of +/- 35% and is reported on a CIF basis.

Environment, Social and Governance

The Company is in the process of evaluating the environmental and social impacts from the development of the Project. A set of policies and management plans will be developed over time and tailored to those impacts with a specific focus on risks and benefits associated with the Project in relation to energy utilisation, waste and pollution management and conservation of natural resources including flora, vegetation, fauna, hydrology and social surrounds.

The Company intends to minimise water usage through water recovery with the inclusion of a tail's thickener prior to deposition into the Tails Storage Facility. The utilisation of solar/battery and potentially wind power generation will also be examined in future studies. The overall impact to climate will be measured across all aspects of the operations, reviewed and published as part of the annual operations and sustainability report.

Several key stakeholders have been identified that are likely to be impacted by the operation. These include pastoral lease companies who own and operate the Balfour Downs and Ethel Creek cattle stations and the Nyiyaparli People (Karlka Nyiyaparli Aboriginal Corporation (KNAC)) who are the traditional owners of the land who live regionally at Jigalong Community, Port Hedland and Newman.

The Company will seek available suppliers and service providers that are locally sourced, cost competitive and can demonstrate ethical supply chains.

Black Canyon intends to pursue a high level of integrity across the business by being transparent, collecting and publishing accurate ESG related records. The Project Leadership team will encourage environmental sustainability and diversity while seeking opportunities to minimise emissions across mining and potential downstream operations.

Geology

The local geology of the KR1 and KR2 is in part overlain by shallow cover over manganese enriched shales from the Balfour Formation that overlie carbonate sequences from the Enacheddong Dolomite comprising calcareous shales and dolomite. The sequence is intruded by cross-cutting dolerite dykes and intrusive sills. Large scale open folds and associated faults have been mapped across the Project area, which appear to enhance the grade and volume of mineralisation. The dolerite dykes and sills may be a valuable source of crushed aggregates material suitable for laydown, construction pads and road construction material.

The geology at KR1 can be separated into several primary units:

- Supergene enriched manganese shales often associated with a higher iron content that form a prominent ridge along the southern extents of the deposit, and typically extend from surface to 15 to 20m depth.
- A thick and widely distributed manganiferous enriched shale unit that contains supergene (manganese) enriched shale located between surface and 25m depth.

- At depth fresh manganiferous olive to green shales of the Balfour shale persist with variable manganese enrichment between 10 and 40m depth.
- A non-manganese bearing laterite layer is well developed on the southern drill lines and gets progressively thicker to the south and west. The laterite contains up to 31% Fe but is low in Mn (<1%).
- A calcareous-manganese shale is encountered at the north end of the deposit and is often mapped at surface. It has a laminated appearance, with carbonate and manganese bands as opposed to the more massive manganese shale observed in the south.
- Below the fresh manganiferous shales, an unmineralized green and brown laminated shale is encountered.
- An 80m wide dolerite dyke striking to the NNE bisects the deposit. The dyke is subvertical and separates the manganese enriched shales.

The KR1 deposit is oriented approximately north south and is dipping gently to the west. The main NNE-trending dyke has displaced the mineralisation western side upwards. In the north, this effectively cuts off the mineralisation (the mineralised horizon has been eroded to the east), whereas in the south it results in a repetition of the mineralised horizon near the surface.

The KR1 deposit is strongly weathered from surface down to a depth between 10 and 30m. The base of oxidation is typically deeper at the southern end of the deposit, becoming gradually shallower towards the north.

The KR2 deposit appears to be geologically simpler than the KR1 deposit.

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

No obvious faults have been mapped or interpreted from the wide spaced drill data at KR2. The deposit appears to form an open synformal fold structure but requires further extension drilling to confirm the morphology. The oxidation depth is typically deeper than observed at KR1 and extends from surface to 30m which is essentially the depth of the drilling completed at this deposit.

Mineral Resources

Reverse Circulation drill results from the KR1 and KR2 prospects by the Company have been reviewed and validated for the Mineral Resource Estimates. The work was completed under the supervision of Greg Jones, a specialist consultant in Mineral Resource Estimates, metallurgy and processing technology, who is employed by IHC Mining (refer to Competent Person statement).

Table 1 and **Table 2** displays the Mineral Resource Estimates for the KR1 and KR2 deposits based on a 7% and 11% Mn cut-off grade respectively (refer to ASX announcement 27 November 2023 KR1 and KR2 Mineral Resource Estimate Exceeds 100Mt). The oblique and cross-section views of the deposits are presented in **Figure 2** to **Figure 5**.

The Mineral Resources are hosted in mostly outcropping manganese enriched shales and form topographically elevated features and have been estimated utilising RC drilling completed by Black Canyon in July 2023 comprising 112 holes for 3,419m of drilling.

At KR1, the MRE is based on drillhole traverses on 200m spaced lines and 100m spaced drillhole centres. The drill data shows the manganese enriched shale geology and grades are continuous downhole and across strike, which supports the Indicated Mineral Resource classification at this drill spacing.

At KR2, the MRE is based on drillhole traverses on 200m spaced lines and 200m spaced drillhole centres. The drill data shows the manganese enriched shale geology and grades are continuous downhole and across strike, which supports the Inferred Mineral Resource classification at this drill spacing.

One drill program has been completed across both the deposits and further infill and extension drilling is planned.

The resources have been zoned into three domains including basement. Zone 1 comprises unmineralised Balfour shale. Zone 2 is the higher-grade target mineralisation comprising brown-grey, Balfour shale unit that is manganese enriched. The basement (Zone 200) has been used to control the interpolation of higher-grade Mn values into the un-sampled and low-grade area of the deposit.

An oxidation and transition/fresh rock boundary has also been applied to the block model and this Scoping Study has examined optimising oxidised blocks of the resource models.

Table 2. Summary of Mineral Resources for the KR1 and KR2 deposits across the Balfour Manganese Field, November 2023

Summary of Mineral Resources[1-3]							
Deposit	**Mineral Resource Category**	**Material (Mt)[2]**	**In Situ Mn (Mt)**	**Mn (%)**	**Fe (%)**	**Si (%)**	**Al (%)**
KR1	Indicated	79	7.8	10.0	7.9	18.0	5.4
Total	**Indicated**	**79**	**7.8**	**10.0**	**7.9**	**18.0**	**5.4**
KR2	Inferred	24	2.9	11.9	10.6	19.2	5.0
Total	**Inferred**	**24**	**2.9**	**11.9**	**10.6**	**19.2**	**5.0**
Grand Total		**103**	**10.7**	**10.4**	**8.6**	**18.3**	**5.3**

Notes:

(1) Mineral resources reported at a cut-off grade of 7% Mn.
(2) Appropriate rounding has been applied.
(3) Refer to ASX announcement 27 November for Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details.

Table 3. Higher-grade Zone Mineral Resource estimate from KR1 and KR2 deposits, November 2023

Summary of Mineral Resources[1,3]							
Deposit	**Mineral Resource Category**	**Material (Mt)[2]**	**In Situ Mn (Mt)**	**Mn (%)**	**Fe (%)**	**Si (%)**	**Al (%)**
KR1	Indicated	15	2.0	13.1	9.8	18.0	6.2
Total	**Indicated**	**15**	**2.0**	**13.1**	**9.8**	**18.0**	**6.2**
KR2	Inferred	14	1.9	13.6	11.2	18.2	4.6
Total	**Inferred**	**14**	**1.9**	**13.6**	**11.2**	**18.2**	**4.6**
Grand Total		**29**	**3.9**	**13.3**	**10.5**	**18.1**	**5.5**

Notes:

(1) Mineral resources reported at a cut-off grade of 11% Mn.
(2) Appropriate rounding has been applied.
(3) Refer to ASX announcement 27 November for Appendix 1 JORC Table 1, Sections 1 to 3 and Appendix 2 for further details

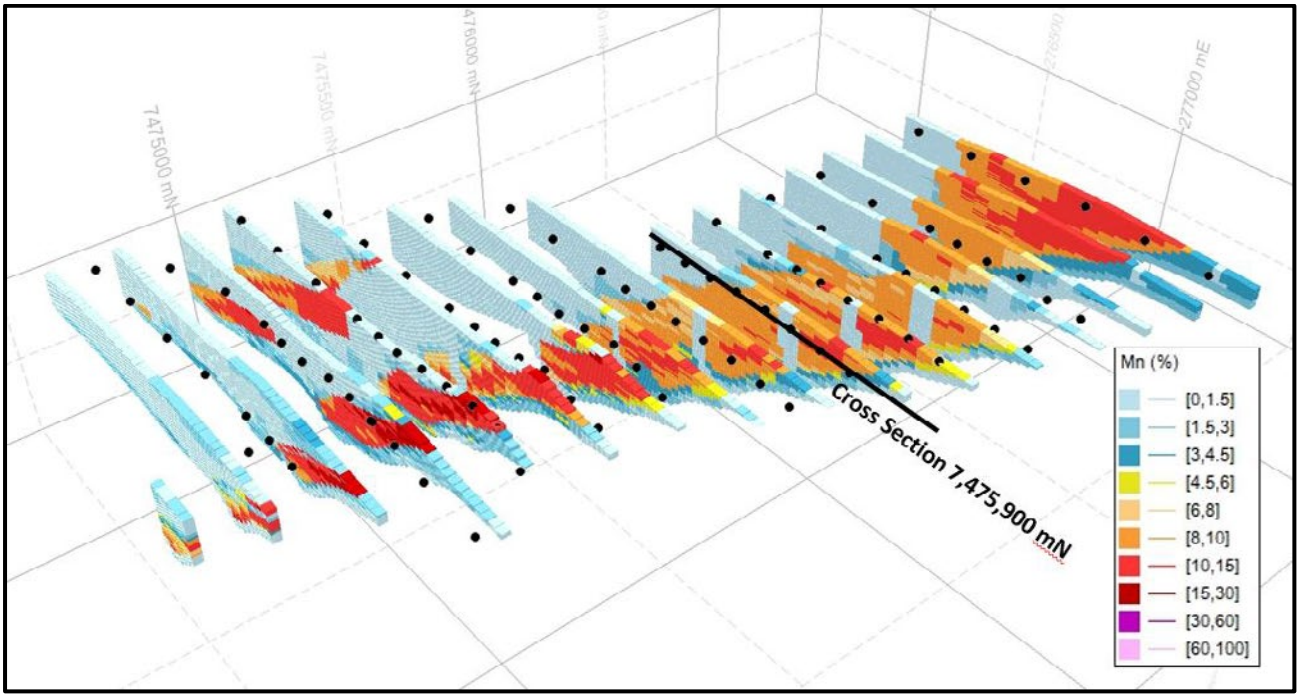


Figure 2. Oblique view of the KR1 Mineral Resource model and coloured by Mn grade (%).

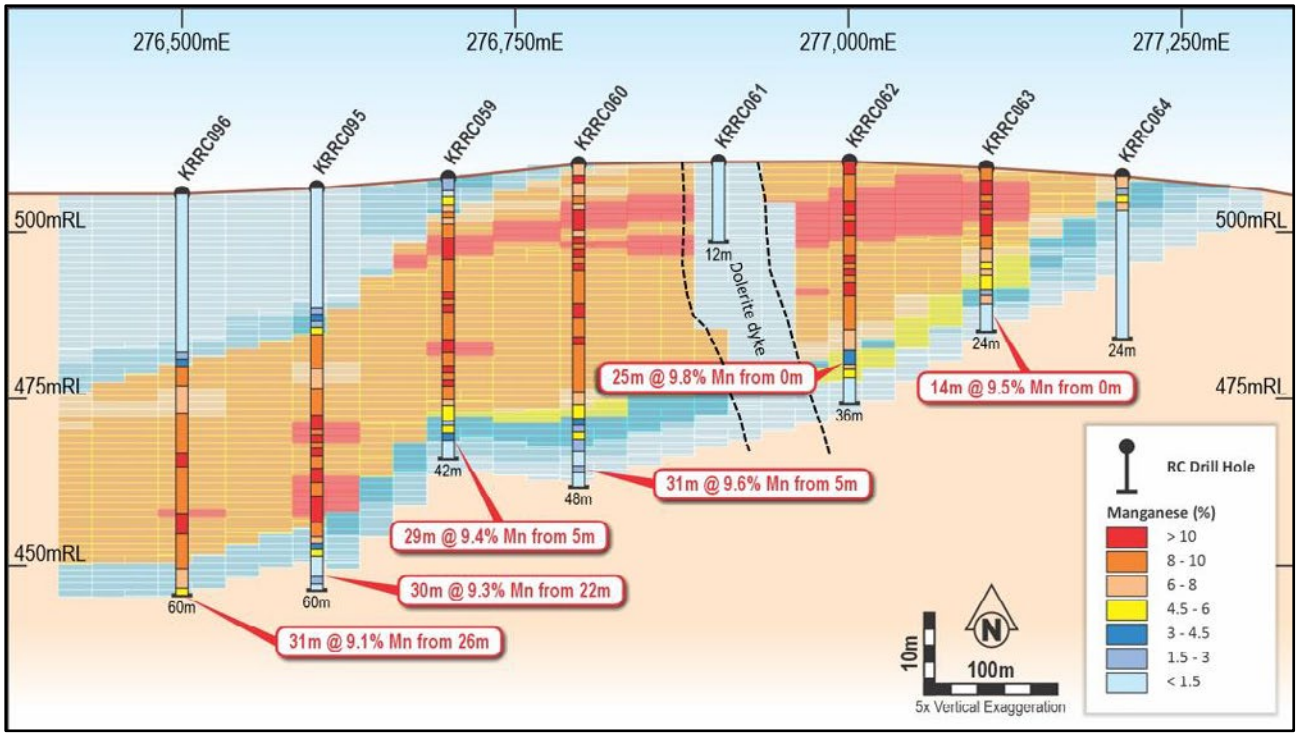


Figure 3. Type section 7,475,900mN (looking north) showing the KR1 Mineral Resource model cells and drill holes coloured by Mn grade (%).

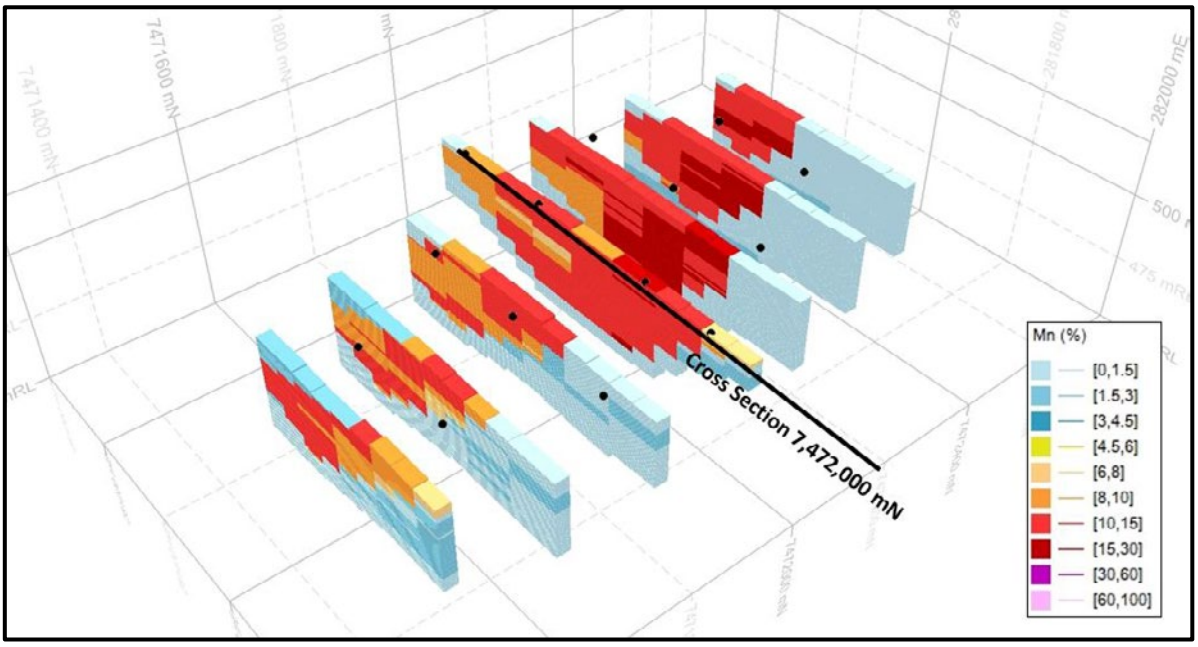


Figure 4. Oblique view of the KR2 Mineral Resource model coloured by Mn grade (%).

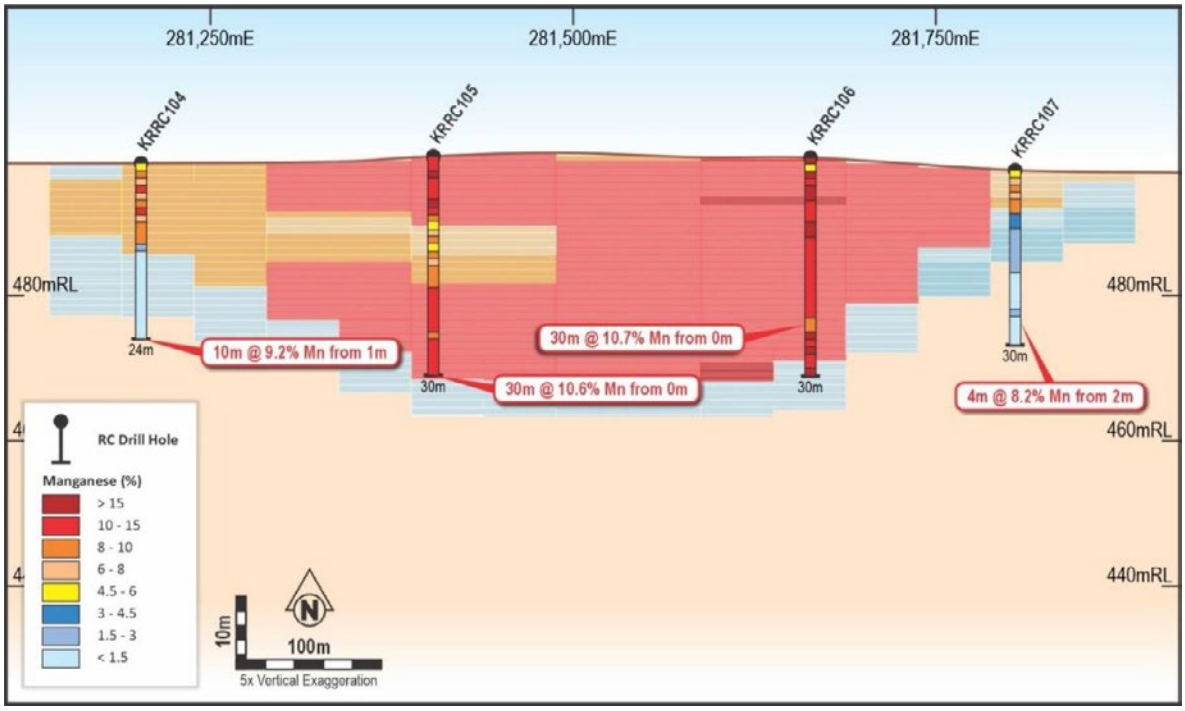


Figure 5. Type section 7,472,000 mN (looking north) showing KR2 Mineral Resource model cells and drill holes coloured by Mn grade (%).

Mining and Geotechnical

Whittle™ optimisation software was used for the optimisation runs and Surpac™ software for mine design. The objective was to investigate the potential for mining open cut mineralisation utilising the Mineral Resource models for KR1 and KR2, economic inputs and associated parameters based on a 3.0Mtpa processing plant. This scope of the study was to produce optimisation inputs and results, life of mine schedule (LOMS), Production Targets and scoping-level financial model outputs. Mr Paul O'Callaghan, Principal Mining Engineer with OTC Mine Planning, directed the mining study process on behalf of the Company.

Geotechnical parameters were provided by 4DG for the FB3 and LR1 deposits which have been applied to this study. 4GD provided a desktop review of the site surface geology, analysis of drill logs from both the Mineral Resource RC drilling and 10 PQ vertical diamond drill core holes and associated geotechnical logs (RQD, hardness, oxidation, recovery and fracture counts) from FB3 and LR1. 4DG concluded the dominate host rock of manganese enriched shale can be excavated by ripping and typical load out methods. From the depth of oxidation and closely spaced bedding planes and low observed thickness of higher strength manganese bands, 4DG determined it was very likely that dozer ripper tines would successfully free this material for excavation using a suitable size excavator.

The mining study assumed a free dig truck and shovel open pit operation and 5% mining dilution and loss was applied to the model.

Over the 16-year mine life at a processing rate of 3.0 Mtpa, Stage 1 and Stage 2 KR1 and KR2 deposits will mine Production Targets totalling 48.2 Mt of ore at 10.9% Mn. Over the LOM, a total of 12.3Mt of 33% Mn manganese concentrate will be generated from the Production Targets. During the Stage 1 development of the KR1 pit the strip ratio will be 0.3:1 waste to ore. At KR2 no stripping is required. During Stage 2 the KR1 strip ratios is 0.8:1 waste to ore and at KR2 a strip ratio of 0.5:1 waste to ore. The LOM strip ratio is 0.56:1 waste to ore.

The Scoping Study evaluated 39.9Mt of Indicated (72%) and 13.3Mt of Inferred (28%) Mineral Resources (**Figure 6**).

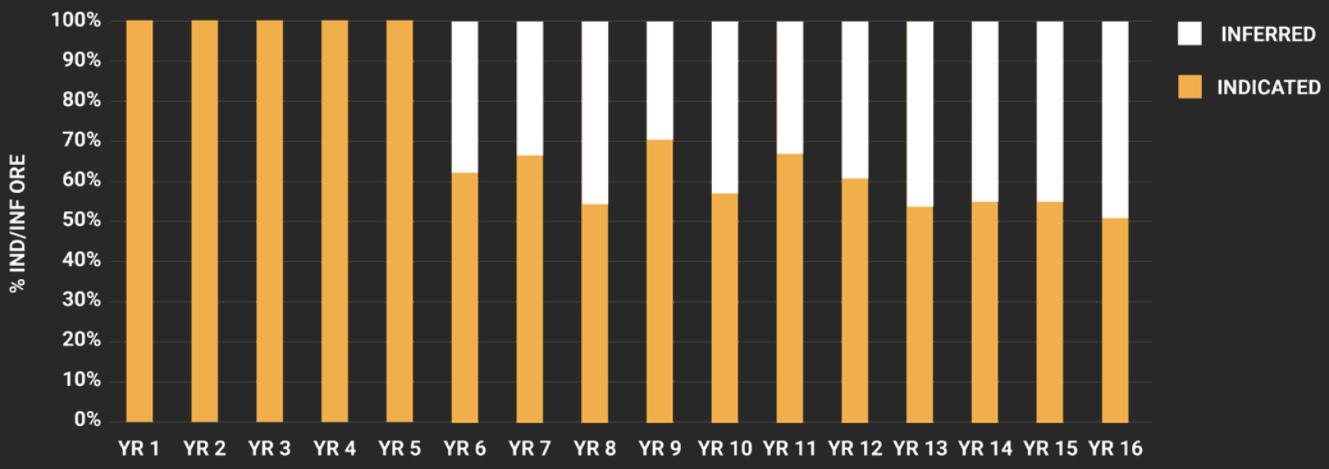


Figure 6. Indicated versus Inferred Mineral Resources used to estimate Production Targets used as the basis of this Scoping Study

Similarities to the Flanagan Bore LR1 and FB3 deposits

The geology and mineralisation of the LR1/FB3 and KR1/KR2 deposits are similar because:

1. All the deposits are hosted in the widely distributed manganiferous shales of the Balfour Formation which overlie the calcareous shales and dolomite of the Enacheddong Dolomite.
2. Both deposits have been intruded by dolerite dykes and sill which is part of the expected stratigraphy.
3. Typically, higher manganese grades are defined in the upper 10m of the deposits and are associated with a higher iron content. The elevated grades are related to more intense supergene enrichment.
4. The Mn grades tend to reduce at depth but consistently range between 7 and 10% Mn in the oxide.
5. Below the oxide the primary green or brown shales have grades below 5% Mn.
6. Mn grade ranges and distribution returned from RC drilling across the deposits are very similar.

Diamond drill core from the LR1 and FB3 deposits has shown that the manganese is hosted within individual bands that range from 1mm to 200mm in thickness. Between the manganese bands are weathered shale, which can be quite fissile (platy) but in some cases weathered to clay. RC drilling completed across the LR1/FB3 was completed adjacent the diamond core holes and provides a good reference as to what the manganese bands look like as RC chips. RC chips logged and sampled from the KR1/KR2 deposits are very similar to the RC chips drilled at LR1/FB3. The thickness of the bands is sometimes noted in the RC chip logging as “chunky” which represent thicker manganese bands. Examples are shown in **Figure 7** and **Figure 8** that show hole FBRC034 drilled into the LR1 deposit and hole KKRC009 drilled into the KR1 deposit respectively. FBR034 intersected 23m @ 11.5% Mn and 8.9% Fe from 5m whilst KKRC009 intersected 27m @ 11.8% Mn and 8.5% Fe from 4m.

Figure 7. RC drill chip tray from LR1 (FBRC034 - 23m @ 11.5% Mn and 8.9% Fe from 5m)

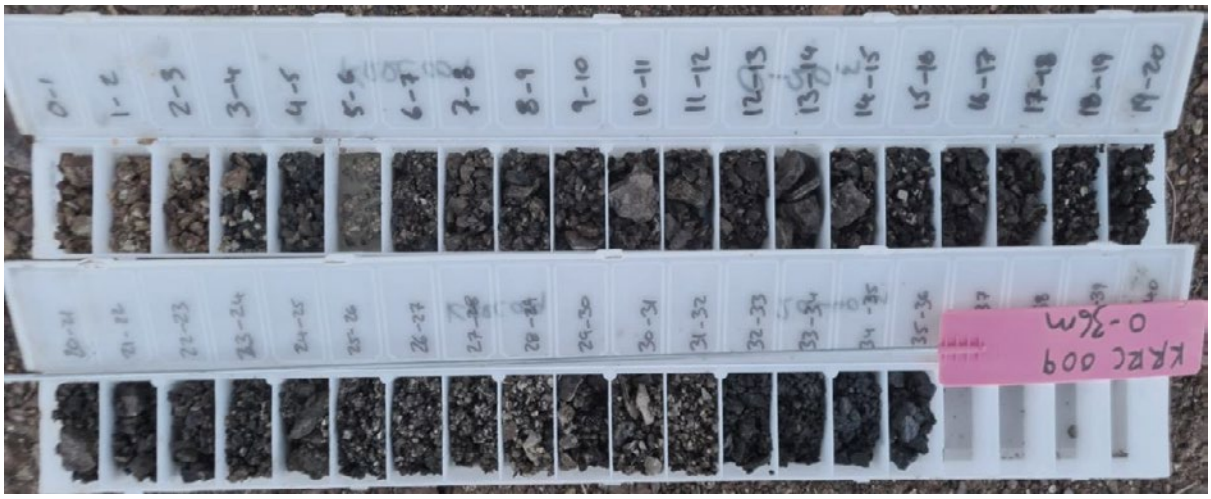


Figure 8. RC drill chip tray from KR1 (KKRC009 - 27m @ 11.8% Mn and 8.5% Fe from 4m)

Heavy liquid separation (HLS) testwork has been completed on composited diamond core samples from LR1/FB3 which were crushed, scrubbed, composited and screened to +1mm-8mm prior to HLS testwork. RC chip samples from KR1/KR2 were screened to +0.5mm and 3.35mm and then subjected to HLS testwork. The results are summarised in **Table 4** and the results show similar grades range when the materials have been subjected to a specific gravity (SG) of 3.2. The KR1/KR2 results returned slightly superior manganese grades to the LR1/FB3 samples.

Table 4. Summary of HLS testwork completed on similar fraction sizes at various SG between the material from LR1/FB3 and KR1/KR2

Mineral Resource	Sample Type	*In situ* Mn Grade (%)	Crushed and Sized Assayed Mn Grade (%)	Size Fraction	Scrubbed or Calculated Feed Mn Grade (%)	Beneficiated Manganese Upgrade			
						Method	Parameter	Mn %	Mn Cumulative Recovery (%)
LR1	DD composite	11.4		+1.0mm -8mm	23.1	HLS	SG 3.3	32.1	
				+1.0mm -8mm		**HLS**	**SG 3.2**	**29.7**	
FB3	DD composite	15.3		+1.0mm -8mm	23.6	HLS	SG 3.3	33.0	
				+1.0mm -8mm		**HLS**	**SG 3.2**	**30.3**	
KR1	RC chip composite	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	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

Beneficiation Testwork

The key objectives of the scoping level sighter testwork completed by the Company was to establish early-stage material characteristics, scrubbing and sizing analysis, variability, staged recoveries and recoveries (where possible), potential flowsheet design options and product marketability. The metallurgical testwork across the scrubbing/washing, HLS and DMS programs since 2022 have delivered highly promising results, achieving concentrate grades in the target range between 30 and 33% Mn (Refer to ASX announcements 17 April 2023 Metallurgical Testwork Successfully Delivers Consistent Concentrate Grades Above 30% Mn and 1 May 2024 Further Testwork Delivers Higher-Grade Manganese Concentrate).

Scrubbing and washing

An important first stage of the beneficiation process, selected intervals from drill core samples were composited and thoroughly combined.

Two master composites were generated from the LR1 and FB3 deposits. The samples were crushed and sized from -150micron to 38mm prior to analysing each screen fraction to understand the grade and size distribution of the feed composites. The -38mm+1.2mm crushed feed sample testwork results indicate 73% of the crushed material is sized between 6mm and 38mm and 27% is sized between 1.2mm and 6mm.

Two 50 kg composite samples were crushed to 38mm, then scrubbed and washed for 15 and 20 minutes. Significant manganese grade uplifts from feed grades of 11% and 15% Mn upgraded to approximately 23% and 24% Mn with minimal manganese losses recorded using a 20-minute wash and scrub.

The results of the manganese content upgrades are presented in **Table 5**.

Table 5. Manganese content upgrades from scrubbing and washing

Composite and Scrub Time	Calc Feed Mn Grade (%)	Scrubbing and Washing Mn Grade (%)	Fraction Size	Mass (%)	Mn Staged Recovery (%)	Relative Mn Grade Increase from Feed %
LR01 Feed	11.8	21.1	-38+1mm	52	93	79
LR01 15min scrub	11.0	22.1	-38+1mm	45	89	100
LR011 20min scrub	11.4	23.1	-38+1mm	44	89	103
FB03 Feed	15.5	20.1	-38+1mm	70	90	30
FB03 15min scrub	15.4	23.1	-38+1mm	58	87	50
FB03 20min scrub	15.3	23.6	-38+1mm	55	86	55

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, whilst significantly retaining a high proportion of the manganese content. A longer scrub of 20 minutes versus 15 minutes has a slight and beneficial upgrade in the manganese grade.

Heavy Liquid Separation (HLS)

Heavy liquid separation analysis was used to approximate DMS (refer to ASX announcement 26 March 2024 Further Testwork Delivers Higher-Grade Manganese Concentrate). Metallurgical sample preparation was completed on 400kg of RC drill chip samples collected from the 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 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 sighter level 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 5**.

Dense Media Separation Metallurgical Testwork:

Following on from the HLS sighter testwork on KR1 and KR2 larger samples were subjected to DMS (refer to ASX announcement 1 May 2024 Dense Media Separation Delivers 32% Manganese Concentrate) equipment that simulate beneficiation processing used across mining operations to upgrade manganese and iron ore in the Pilbara region.

Based on the staged recovery and manganese grades at various SG applied from the HLS testwork, a dense media SG of 3.0 was selected for the larger scale DMS testwork and subsequently applied to the KR1 and KR2 samples.

DMS produced manganese (Mn) concentrates grades of 31.8% Mn and 31.3% Mn from the KR1 and KR2 test samples respectively based on non-optimised evaluations and further work is planned to further improve the results.

The results are presented in **Table 6**.

Table 6. Results from beneficiation testwork on KR1 and KR2 RC chip samples including HLS and DMS

Mineral Resource	Sample Type	East GDA94	North GDA94	*In situ* Mn Grade (%)	Crushed and Sized Assayed Mn Grade (%)	Size Fraction	Calculated Feed Mn Grade (%)	Beneficiated Manganese Upgrade			
								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
						+0.5mm -3.35mm		**DMS**	**SG 3.0**	**31.8**	**80.5**
						+0.5mm -3.35mm		**DMS**	**SG 2.8**	**29.9**	**88.7**
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
						+0.5mm -3.35mm		**DMS**	**SG 3.0**	**31.3**	**80.7**
						+0.5mm -3.35mm		**DMS**	**SG 2.8**	**29.6**	**89.3**

Process Flowsheet Design

The proposed flowsheet design is based on the application of learnings developed from sighter level scrubbing and washing test work completed on diamond core composites from the LR1 and FB3 deposits and further HLS and DMS testwork completed on the RC drill chips from KR1 and KR2 (described above). Significantly experience of the principal process engineer and utilising standard “off the shelf” equipment was also important in flowsheet design.

The design process was to review the application of existing technologies widely used in the beneficiation of manganese and other dense minerals and design sighter level tests to evaluate the potential of each technology to deliver a saleable product. This approach has formed the basis of the flowsheet design shown in **Figure 9**. In summary, the flowsheet used as the basis of the Scoping Study is as follows:

- Front end loader feeding into the Primary sizer.
- Drum Scrubber.
- Screening and secondary crushing and screening.
- Two stage Dense Media Separation (DMS) circuits, including screening.
- Production of +1-6.3mm and +6.3-32mm Manganese concentrate products.
- Waste disposal including:
    - Fine deslimed material from the scrubbing circuit and DMS waste streams will be either be utilised in TSF wall construction, used for capping or stored within the mine waste dumps.

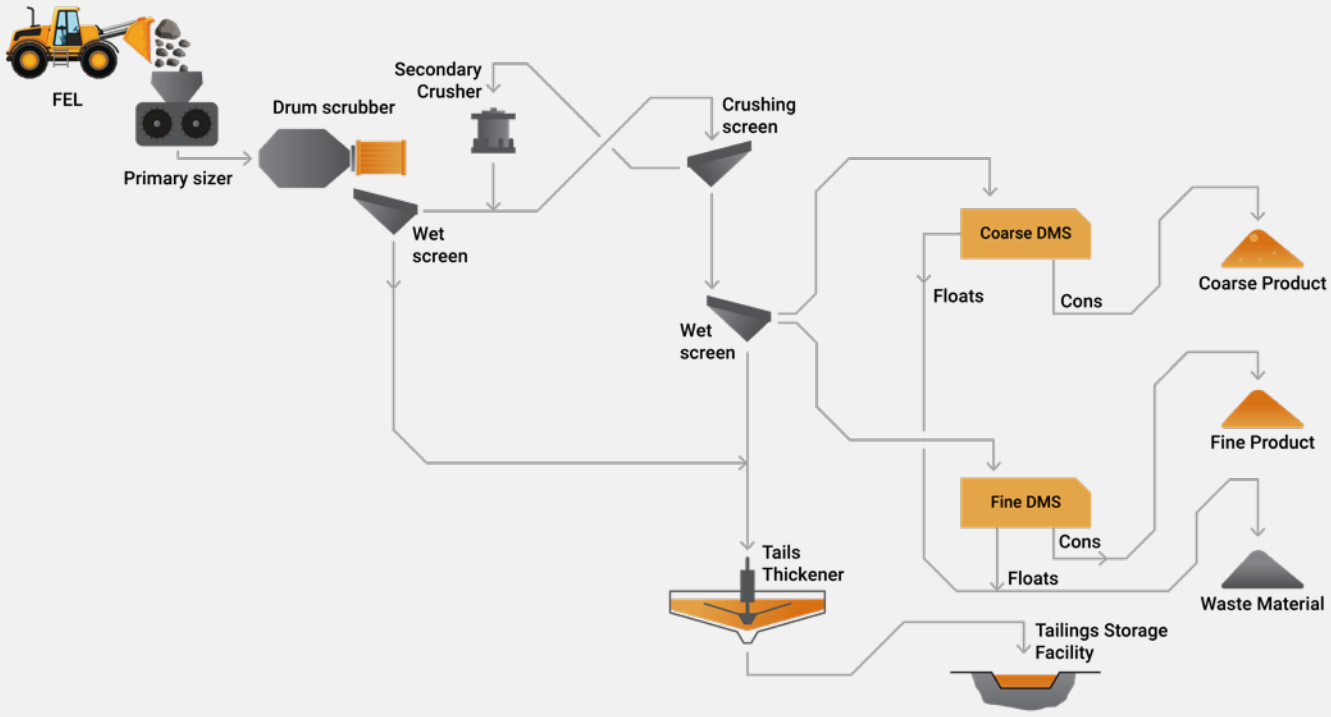


Figure 9. KR1 & KR2 process flowsheet schematic (3.0Mtpa throughput)

Site Infrastructure

The plant and infrastructure associated with the Scoping Study comprises the following:

- Process plant and ancillary equipment such as the power station, office, laboratory and workshop facilities
- Tails Storage Facility (TSF)
- Mine, stockpiles and waste dumps
- Water supply bore field and pipe routes
- Access roads to and within the plant, mine and the Project site

- Accommodation facilities, complete with dedicated services (generators, water treatment etc).

The general project site plan and process plant site layout is shown in **Figure 10**.

The gravel roads maintained by the local East Pilbara Shire to the site from the Newman – Nullagine – Port Hedland Road (managed by Main Roads WA) will require some upgrades for both the construction and operational phases of the Project. An allowance for this work has been included in the capital and operating cost estimates and is based on costs of other road upgrade projects in the area. The road from Newman to Port Hedland is partly sealed servicing multiple mining operations, the townships of Nullagine and Marble Bar and the Auski Roadhouse. The roads in the area can be closed up to a week during the wet season due to heavy inundation associated with tropical lows, which will need to be factored in during construction and operations.

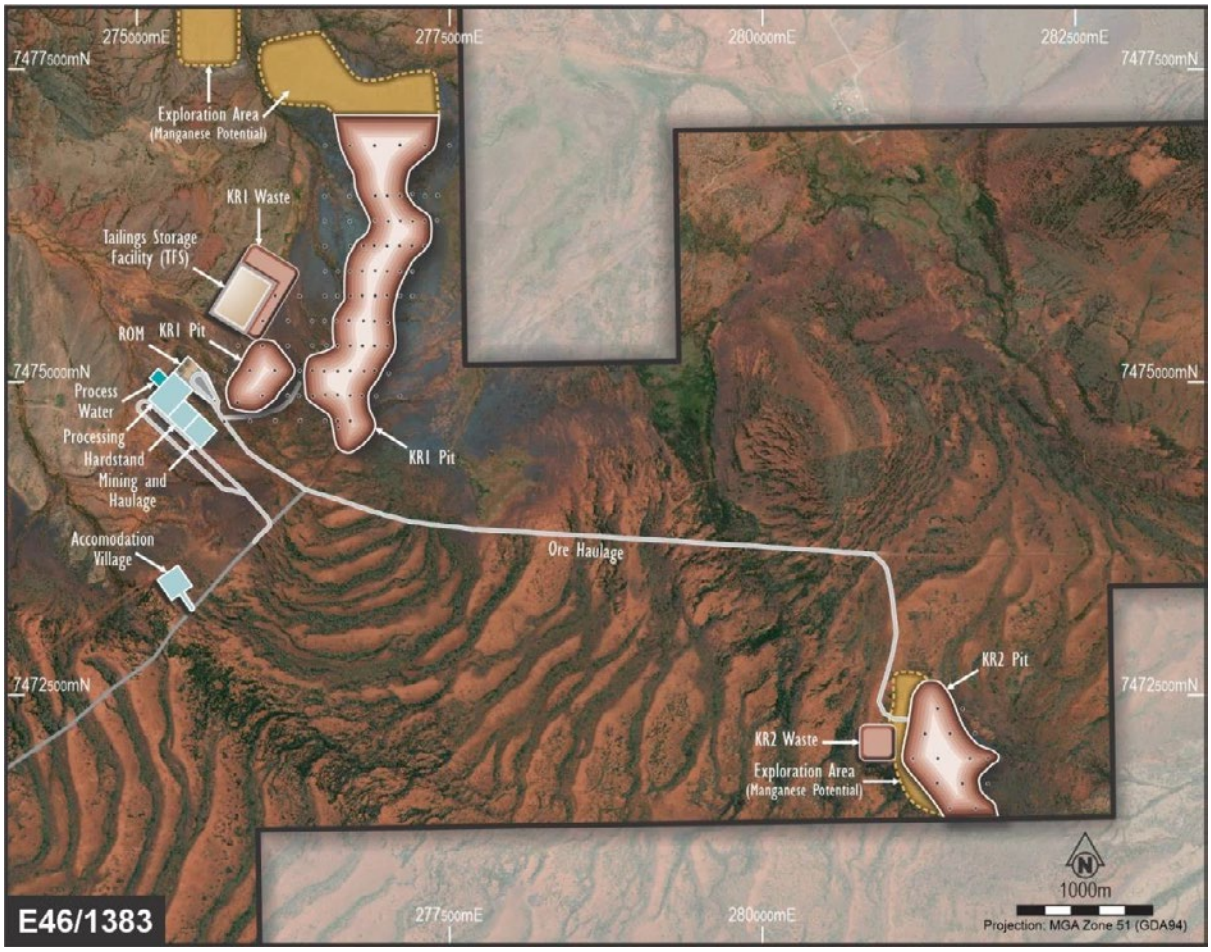


Figure 10. Overall KR1 and KR2 project site layout

The power requirements for the process plant have been calculated with a total connected load of 3.5MW including all duty and standby equipment with an estimated average operating load of 2MW. The power station proposed in the study is based on

diesel generator sets (gensets) and operated by an independent power provider. A solar /battery/ diesel hybrid power station option is to be further investigated to reduce operating costs and reduce the carbon footprint of the mine.

Water requirements for the process plant are estimated at 0.35 to 0.50m^3/t of mill feed resulting in a total make-up water required for the operation of 1.1-1.5 GL/y. For the study, it has been assumed that adequate groundwater will be available within a 5 km radius of the process plant to operate an effective bore field. The Company will undertake a monitoring and production bore investigation to establish aquifer potential, drawdown and recharge targeting structurally dislocated carbonate units of the Enacheddong Dolomite or Carawine Dolomite that can be karstic and host high quality water. Other large regional drainage systems will also be investigated.

The plant will include, raw, process and potable water systems including a tailings thickener to maximise water recycle.

Process plant tailings will comprise multiple streams including:

- DMS coarse and fine float material
- Deslimed fines
- Fine wet tailings

Dry materials will be stockpiled and re-used in Tails Storage Facility (TSF) construction where appropriate or stored with mine waste.

Wet tailings will be dewatered using a cyclone and with coarse recovered material stockpiled and rehandled. The dewatering cyclone overflow fine tailings are to be thickened and pumped to the TSF for discharge using sub-aerial deposition from multiple spigots. Thickener overflow water gravitates to the process water pond for recycle. Additional water is recovered from the TSF via tailings return water system.

Buildings within the plant, administration, and infrastructure areas will be of the demountable/portable office type. Large plant buildings will be provided as dome structures and shipping containers including:

- Processing maintenance workshop
- Maintenance and consumables warehouse

The accommodation village will consist of modular prefabricated buildings typically used in the Pilbara area for mine site accommodation and will be constructed to accommodate up to 52 personnel on a motelling basis. The facilities will be complete with generators and water treatment plants.

Transport and Concentrate Logistics

The manganese concentrate products from the process plant will be stacked and blended as required and road hauled approximately 550km using a combination of standard quad (115t) and ultra quad (155t) road trains to the Utah Point Bulk Handling Facility berth for ship loading on a campaign basis. The transport of product to Port Hedland, stockpiling and stevedoring will be done through a contract arrangement with a specialist logistics company.

The Utah Bulk Handling Facility is owned and operated by the Pilbara Ports Authority. The berth has a 24Mtpa capacity catering predominantly for iron ore juniors and other smaller bulk mineral export companies currently shipping manganese, chromite and spodumene ores. The multi-user bulk handling facility comprises, product receival hoppers and stackers, stockpiles, product reclaim and ship loader.

Licencing, Environment and Permitting

The project is situated within granted Exploration Licence E46/1383. A portion of the exploration licence will be converted to a production licence with the application of a Mining and relevant Miscellaneous licences administered by the Department of Mines and Petroleum (DMP). A proposed mining licence outline has been considered and will be submitted with a Mineralisation Report as required by the DMP. The Company will also commence negotiations with the KNAC for a Mining Access Agreement to facilitate the mining licence grant process.

The Company commenced initial and seasonal baseline environmental studies at the end of 2023 to inform assessment against the EPA's Key Environmental Factors that include impacts to Land (flora/vegetation, subterranean and terrestrial fauna, landforms) Water (groundwater ecosystems and surface water) Air (emissions and greenhouse gases) and People (human health and social surroundings).

The scale of the Project and level of assessment required under the Environmental Protection Act 1986 (amended 2020) has not been formally determined as it is dependent on the findings of the initial studies. Once relevant studies have been completed, the Company will be able to plan an appropriate approval pathway to receive approvals through the Part IV and/or V approval processes under the EP Act, as well as Mining Act 1978, Rights in Water and Irrigation Act 1914 and other minor approvals and permits.

Manganese Market and Scoping Study Ore Pricing*

As an essential and non-substitutable component in steelmaking, manganese is most commonly used as a powerful de-oxidant, to improve either the strength or ductility of steel and increase the hardenability rate.

Global Ore Production:

The commodity is listed as a critical mineral by the governments of the United States of America and Australia with the majority of the ores produced from South Africa, Gabon, Australia, China and Ghana (**Figure 11**). At total of 60Mt of ore was produced in 2023 that equates to approximately 21.2Mt of contained manganese.

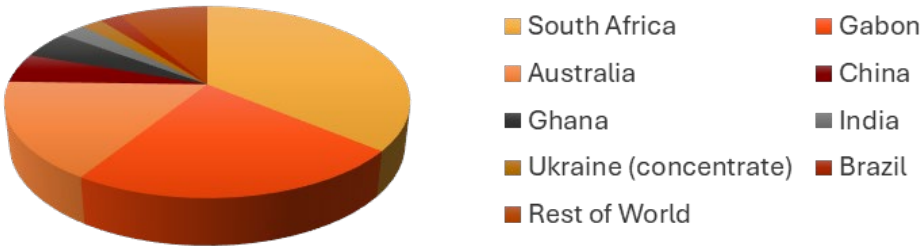


Figure 11. World Manganese Ore production (source USGS 2022)

Global Ore Production Grades:

Ore grade manganese is typically sold and classified according to the following grade categories:

- High grade > 44% Mn
- Medium grade 30% to 44% Mn
- Low grade < 30% Mn

The global grade of production continues to decline as high-grade ore sources are depleted or sources of high-grade are reduced and medium-grade manganese sources are expanded. The global average grade of manganese ore produced in 2023 was 35.4% Mn (**Figure 12**, data sourced with permission from IMnI).

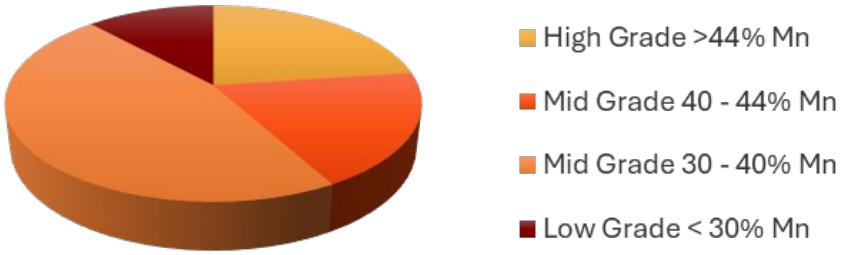


Figure 12. Global Mn ore production in 2023 by grade classification (source IMnI)

Medium grade ores are typically sold on a contractual basis at a discount to benchmark high-grade ores based on the manganese content with a potential premium payable for silica content when sold into the silicomanganese market. These ores are further divided into carbonate, mixed carbonate/oxide and oxide ores.

Global Ore Utilisation:

Manganese ore is typically smelted with silicon or iron to make various silicomanganese and ferromanganese alloys that are added to furnaces during the steel making process.

Steel making on average represents 96% of total Mn ore demand with the remaining 4% used in the production of primary batteries, Li-ion batteries, agriculture, and other uses (**Figure 13**, data sourced with permission from IMnI). According to the World Steel Association (WorldSteel) the forecast for 2024-2025 they expect a rebound of 1.7% demand for 2024 to reach 1.793Bt which is expected to grow by 1.2% in 2025 to reach 1.825Bt.

In 2024, China's steel demand is expected by Worldsteel to remain flat continuing trends encountered during 2023. Demand from infrastructure projects is likely to counteract a corresponding decline in real estate investment demand so the market remains largely in balance. China's peak steel demand occurred in 2020 with forecasts expecting a gradual decline over the medium term.

Beyond China, Worldsteel is forecasting relatively strong growth at 3.5% pa over 2024-25 which is attributed to:

- Continued strong growth out of the second largest steel producer India with projections of 8% growth over 2024-2025. In 2025 steel demand is projected to be 70Mt higher than 2020.
- Emerging markets such as Middle East and North Africa (MENA) and Association of Southeast Asian Nations (ASEAN) are expected to show accelerating growth in their steel demand over 2024-2025 after a significant slowdown over 2022-2023. However, some caution to future growth expectations in the ASEAN region due to political instability which might lead to lower steel demand going forward.
- The developed world is also expected to show a strengthening recovery with 1.3% in 2024 and 2.7% in 2025, as steel demand starts to show a meaningful pick up in the EU in 2025 and continued resilience in the US, Japan, and Korea.
- US steel demand continues to show healthy steel demand fundamentals. The country's steel demand is expected to quickly return to growth path in 2024 after a sharp drop led by housing market slowdown in 2023 thanks to strong investment activity, which received a boost from the Inflation Reduction Act and a gradual recovery in housing activity.

In contrast Europe and the United Kingdom face challenges according to the World Steel Association. Since 2023 geopolitical shifts, high inflation, monetary tightening, partial withdrawal of fiscal support, and high energy costs has resulted in a major drop in steel

consumption, its lowest since 2000. After only a technical rebound expected in 2024, the region's steel demand is expected to finally show a meaningful recovery with a 5.3% growth in 2025 but from a low base marginally higher than the pandemic trough in 2020.

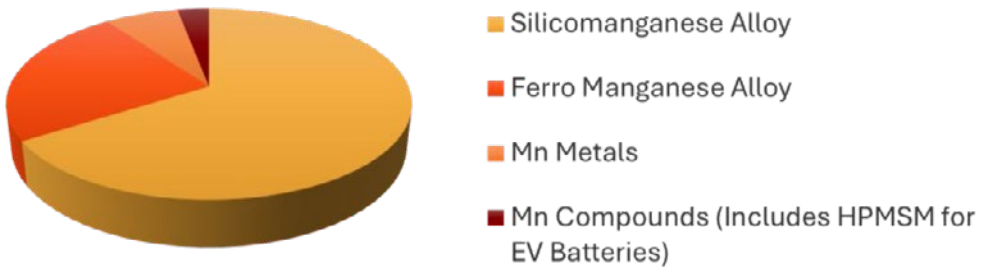


Figure 13. World Manganese Ore utilisation (source IMnl 2023)

Other than steel related demand for manganese alloys potential growth opportunities lie within high purity manganese sulphate monohydrate (HPMSM) or other manganese compounds. These high purity manganese compounds are used as pre-cursor material (PCAM) when combined with other cathode active materials (CAM) utilised dominantly in lithium-ion batteries in electric vehicles. Traditional nickel-manganese-cobalt (NMC) batteries yielded significant market share to less costly but lower energy dense lithium-iron-phosphate (LFP) batteries that accounted for over 40% of global EV sales by capacity in 2023, more than double their share in 2020 (IEA. Global EV Outlook 2024). The increase in LFP over NMC batteries has in the short term reduced demand for HPMSM but several battery manufacturers are developing lithium-iron-manganese-phosphate batteries (LFMP) that increase energy density by 15-20% over LFP chemistries but remain significantly cheaper than NMC batteries. Several major battery manufacturers are planning to commercially produce LFMP batteries as part of their battery suite with the trend towards specific battery technologies tailored to specific applications. In addition to LFMP batteries, sodium and high lithium manganese chemistries continue to advance and have the potential to further increase market demand for manganese compounds used in the energy storage and EV's.

Manganese Ore Pricing:

The manganese price index presented in **Figure 14** (data sourced with permission form IMnl) shows that during 2023 and 2024, 37% and 44% Mn ores exhibited a gradual decline in price from March 2023. Demand for manganese was subdued in response to reduced demand for manganese alloys from predominantly Chinese steel production.

South 32 (ASX:S32) the owner of the Groote Eylandt operations that produces approximately 15% of world manganese units suspended production in March 2024 which sharply drove prices higher as alloying smelters sought to buy limited available

high-grade ores. South 32 since reported in their March 2024 quarterly that engineering studies are underway that will inform the final schedule and capital costs with some production planned in 2024 but full operations expected in Q3 FY 2025 (March 2025).

It is anticipated that while Groote Eylandt is offline prices will remain elevated but gradually decline over 2024 as additional manganese ores supply comes online most likely from medium grade producers. However, Groote Eylandt was scheduled to cease production in 2030 and as such some smelting companies maybe positioning themselves to increase the proportion of medium-grade ores fed into their smelters in anticipation of further declining availability or reliability of high-grade ores in the future.

Since 2017 the 44% Mn benchmark price had an average price of US$5.60 dmtu CIF Tianjin. During 2023 the 44 % Mn ore price touched five-year lows for several months across the period and averaged US$4.80 dmtu CIF Tianjin which continued into March 2024. During April and May 2024, the price dramatically spiked to US$7.00 dmtu CIF Tianjin in response to the suspension of Groote Eylandt's operation which represents an increase of 46% in year-on-year prices and currently remains over $US8.00 dmtu.

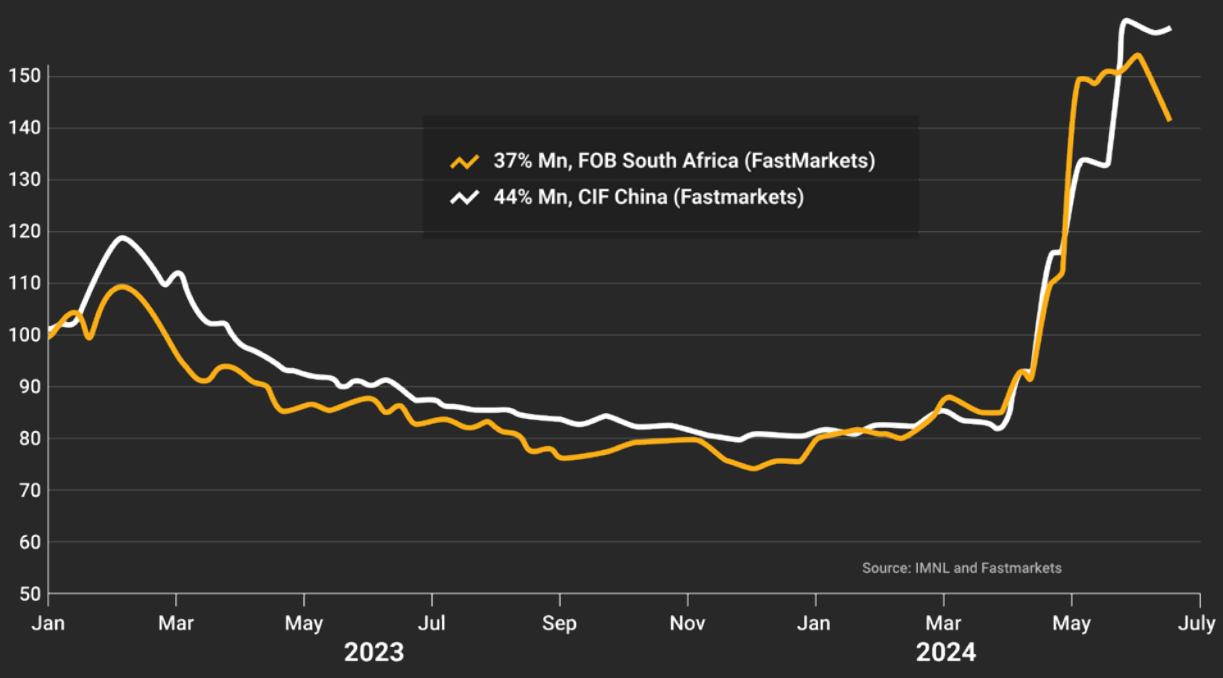


Figure14. Manganese Ore Index 2023 to 2024 (sourced with permission from IMnl)

Black Canyon Manganese Ore Pricing:

Discussions with marketing specialists indicate manganese concentrates with characteristics similar to ore from the Balfour Manganese Field would be suitable as a blend feed into silico- or ferromanganese alloys.

Ores to be produced by Black Canyon from the KR1 and KR2 deposits will target the medium-grade or largest segment of graded manganese ores traded. Black Canyon ores are oxide only with the added advantage of containing silica required for silicomanganese alloys and have a low boron content. These features make them desirable to smelters producing manganese alloys.

Pricing for manganese ore from the KR1 and KR2 deposits has been discounted to the benchmark 44% Mn average ore price of US$5.60 dmtu CIF Tianjin. On this basis Black Canyon management has applied a pricing assumption of US$4.60 dmtu CIF taking into account flattening demand for steel, long term pricing trends and potential credits for delivering a high silica and low boron content product.

*Note * Information provided in this section has been sourced with permission from the International Manganese Institute (IMnI). Other marketing information was reviewed but is unable to be published due to the confidentiality of that information.*

Economic Analysis and Financial Summary

The capital and operating cost estimates and financial evaluation are presented in AUD$ with base date of Q1 2024 and no allowance for escalation. Capital costs and operating costs have been prepared to an accuracy of ±35%, which is appropriate for scoping level studies. The costs have been estimated by BatteryLimits based on its database, vendor pricing and benchmark data.

The KR1 and KR2 Scoping Study financial performance summary is presented in **Table 7**, the capital and operating costs are shown in **Table 8, Table 9** and **Table 10.** The LOM operating cashflow is summarised in **Figure 15**.

Table 7. Financial Performance Summary

Financial Performance Summary	Unit	LOM
Initial LOM	(years)	16
Total LOM Revenue	($ M, real)	2,781
Total LOM EBITDA	($ M, real)	654
NPV @ 8% - before tax	($ M, real)	340
IRR - before tax	(%, real)	70%
Project Capital Expenditure	($ M, real)	84
Payback Period - before tax	(years)	<2
Average Sales Price (LOM)	Product ($/t) $US/dmtu	227 4.60
EX rate AUD:USD	$	0.67
CI Cash Costs (CIF)	($/t, real) $US/dmtu	149 3.02
AISC (CIF)	($/t, real) $US/dmtu	166 3.38

Table 8. Capital Cost Estimate

Item	Description	Cost ($M)
Process Plant		
	Crushing	5.9
	Processing	34.4
	Tailings systems	2.3
	Services	0.6
	Plant bulk earthworks	2.1
	Process infrastructure	0.5
	Total Process Plant	**45.7**
Infrastructure		
	Tails Storage Facility	2.3
	Water supply	1.8
	Roads	1.3
	Accommodation Camp	5.5
	Light vehicles & mobile equipment	1.2
	Other	1.6
	Total Infrastructure	**13.6**
Indirect costs		
	Owners and other costs	5.9
	EPCM	7.1
	Contingency	11.9
	Total Indirect cost	**24.9**
	TOTAL CAPEX	**84.1**

Table 9. LOM C1 Operating Cost /t (CIF)

CA Operating Cost C1	$/t LOM	$/t Mn CONC	$US/DMTU
Mine to ROM Haulage	5.21	20.45	0.42
Milling Costs	5.82	22.87	0.46
Grade Control and rehandle	1.5	5.89	0.12
G & A	1.51	5.93	0.12
Product haulage	17.46	68.61	1.39
Port and shipping charges	6.36	25	0.51
Total C1 Operating cost	37.9	148.8	3.02

Table 10. LOM AISC Operating Cost /t (CIF)

AISC	$/t LOM	$/t Mn CONC	US/DMTU
C1 Operating cost	37.9	148.8	3.02
Sustaining Cost	0.8	2.9	0.06
Royalty (State & Traditional Owners)	3.7	14.7	0.3
Total AISC	42.4	166.4	3.38

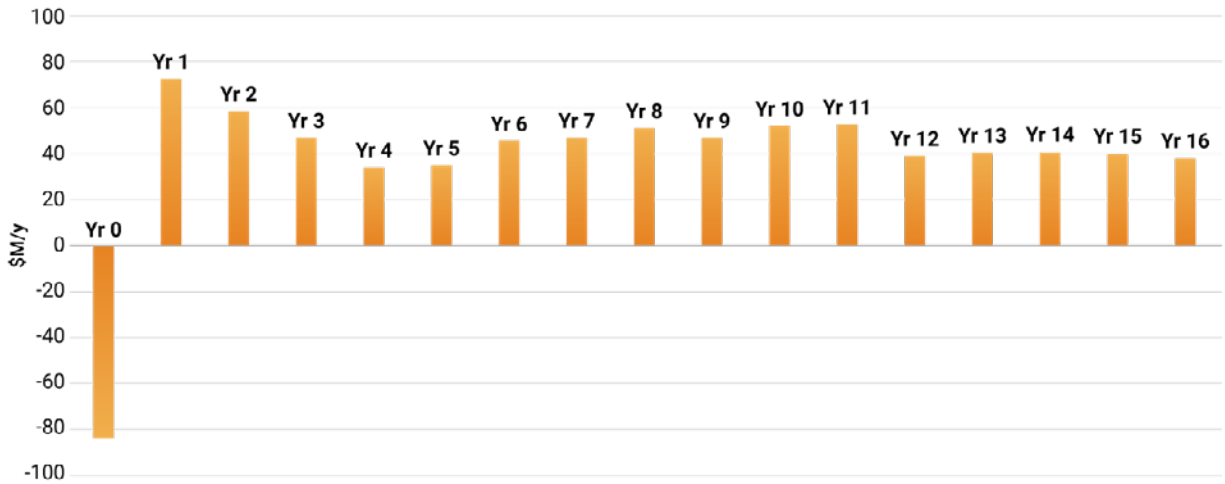


Figure 15. LOM Operating Cashflow

Higher cashflows are anticipated in years 1 – 3 due to very low strip ratios from the KR1 starter pit that also coincides with higher ore feed grades in the upper portion of the deposit. Similarly, from year 6 access to KR2 mineralisation also means developing shallower mineralisation with a low strip ratio.

Project Sensitivities

The sensitivity analysis indicates that the Project is most sensitive to exchange rate and price assumptions, followed by operating expenditure assumption but is not sensitive to capital expenditure assumptions which are summarised in **Figure 16** and **Figure 17**. The NPV sensitivity to exchange rate and manganese concentrate price based on discounting to the 44% Mn benchmark dmtu price is displayed in **Table 11**.

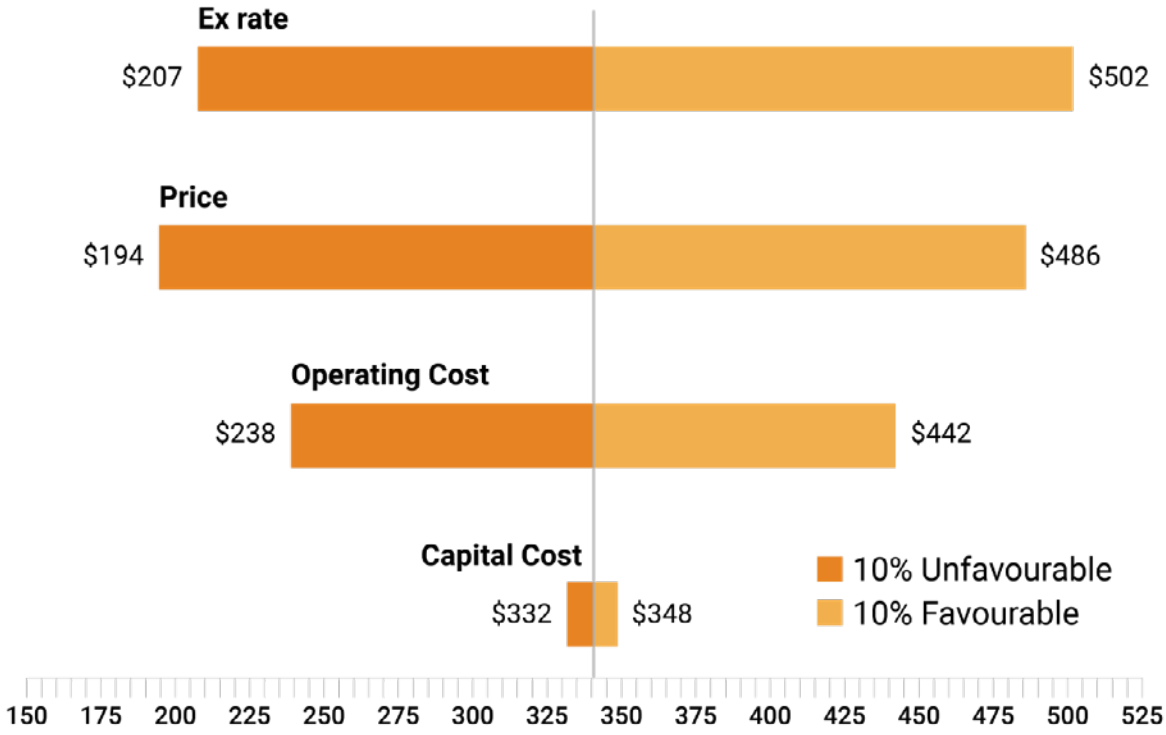


Figure 16. Sensitivity analysis using a 10% threshold (NPV, before tax, real)

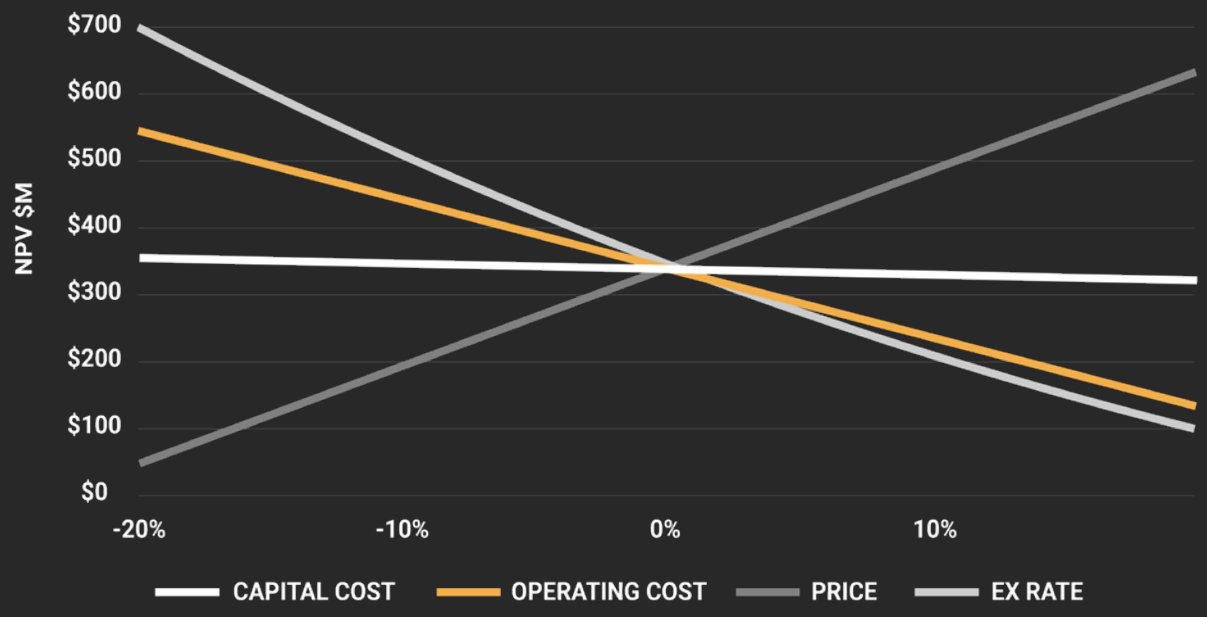


Figure 17. Sensitivity analysis (NPV, 8% before tax)

Table 11. NPV sensitivity to price and exchange rate discounted to the 33% Mn price assumption.

Exchange Rate AUD:USD	Mn Price (US$ DMTU) (CIF)				
	44% Mn				
	4.36	4.87	5.6	6.09	6.78
	33% Mn disc				
	3.6	4	4.6	5	5.6
0.74	-83	34	**207**	321	496
0.71	-44	78	**257**	376	557
0.67	**21**	**150**	**340**	**466**	**657**
0.63	94	231	**433**	567	771
0.59	177	323	**539**	682	900

Current 44% Mn Benchmark Price over US$8.00/dmtu

Project Funding

Based on the outcomes of this Scoping Study, approximately $84m of pre-production funding is estimated to be required. Based on the size of the capital requirement, it is anticipated that the funding will be sourced through a combination of traditional equity and debt instruments from existing shareholders, new equity investment and debt providers from Australia and overseas.

Funding may come from strategic offtake partners that seek manganese concentrate for alloying or other pre-cursor cathode battery chemical producers seeking long term

sources of raw materials. There is also significant interest in project funding for infrastructure and mining projects that can add value to local economies and bring an overall benefit to regions and their stakeholders. The North Australian Infrastructure Fund (NAIF) is well known as a project enabler in northern regional Western Australia with a preference for long mine life assets such as those in the Balfour Manganese Field.

Black Canyon has formed the view that there is a reasonable basis to believe that requisite funding for development of the Project will be available when required, having considered factors including the following:

- The Company's Board and management team has extensive experience in the development, financing and production in the resources industry.
- The relatively modest Capital requirement and the quality of the mineral resources used as the basis of the Scoping Study which will be updated and reclassified as the Company progress to more detailed feasibility studies to further de-risk the project.
- The simplicity of the flowsheet to produce a saleable product with strong fundamental and continued demand for manganese utilised in the steel industry but also as a critical mineral in the development of low-cost higher energy batteries.
- Strong financial flows in the early years with rapid payback of debt should support a reasonable level of debt financing if required. The ability to secure binding offtake agreements with loans secured against future production typically are well viewed by project financiers.

Based on the project financials, government funding initiatives and raisings completed for similar scale projects focussed on producing manganese concentrate provides further evidence that the Project has a reasonable basis to assume funding will be available as and when required.

Project Enhancements

The following opportunities have been identified for further investigation:

- Inclusion of additional Mineral Resources as the Company undertakes Mineral Resource infill and expansion drill programs that could potentially extend life or expand annual production rates.
- Examine increased throughput and accessing additional mineral resources that Back Canyon has discovered in the region. This could include the integration of other Black Canyon assets within a 20 to 30km radius of the KR1 and KR2 operations. Trucking costs from satellite deposits would be minimised using dedicated haul roads constructed for the purpose. Considering the Production Targets estimated from the KR1 and KR2 deposits represent only 15% of the Global Mineral Resources defined across the Balfour Manganese Field future studies are not resource constrained.
- Consider hybrid solar/battery/diesel - power option based on a long-term PPA to reduce power operating costs.

- Review logistics opportunities. The Company has only considered contract haulage for this Scoping Study, but future feasibility studies may consider transitioning to owner operator or a combination of fleet ownership and contract management to reduce OPEX costs.
- Subject to further geotechnical characterisation during feasibility of the deposits examine the suitability of the shale hosted mineralisation to be excavated with surface miners. The soft laminated nature of the mineralisation maybe highly conducive to lower cost strip mining using surface miners.
- Geotechnical investigation to optimise pit designs, plant and TSF sites and to identify suitable materials for construction to reduce costs.
- Hydrology investigation to confirm water supply options and site water balance.
- Geo-metallurgical investigation of the whole resource, both low and high grade, to determine the optimum grade/product size for mining and processing.
- Further metallurgical optimisation of the flowsheet to look a further increasing recovery and or manganese grade with the application of additional density-based separation techniques.

Development Timeline

A conservative 30-month high-level Project schedule has been developed as shown in **Figure 18**. This shows the Project timeline of 18 months from funding approval to completion of commissioning and assumes all funding is in place and all permitting, and approvals are completed.

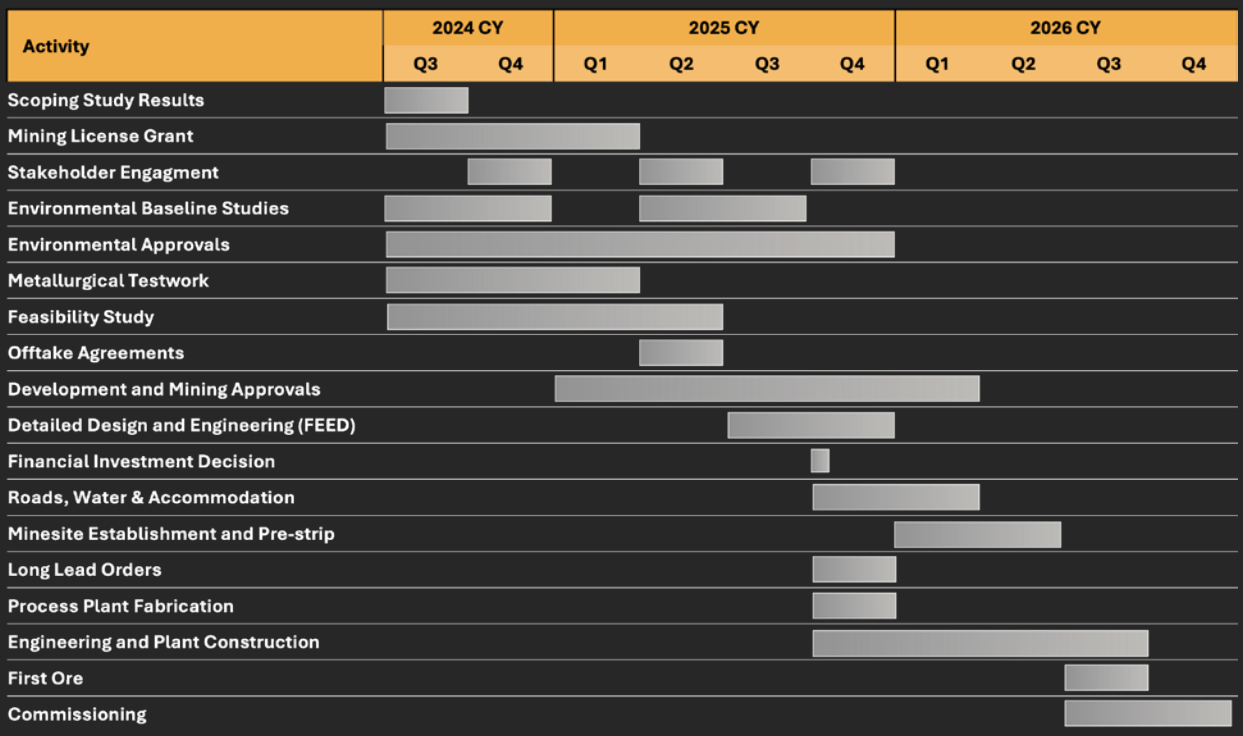


Figure 18. Project implementation schedule

Key Consultants and Contributors

Content	Contributor
Study Management	BatteryLimits Pty Ltd
Geology and Resources	Black Canyon Ltd
Mining and Geotechnical	OTC Mine Planning / 4DGeotchnics Pty Ltd/ReGroup Pty Ltd
Geo-metallurgical sample selection	Black Canyon Ltd
Processing	BatteryLimits Pty Ltd
Engineering	BatteryLimits Pty Ltd
Power, Water, Infrastructure	BatteryLimits Pty Ltd/Black Canyon Ltd
Logistics	ReGroup Pty Ltd / BatteryLimits Pty Ltd / Black Canyon Ltd
Project Implementation Schedule and Plan	BatteryLimits Pty Ltd
Capital Cost Estimates	BatteryLimits Pty Ltd
Operating Cost Estimates	BatteryLimits Pty Ltd / OTC Mine Planning / Black Canyon Ltd
Marketing	Black Canyon Ltd
Financial Assessment	BatteryLimits Pty Ltd/ OTC Mine Planning
Permitting and Environment	Black Canyon Ltd / Preston Consulting Pty Ltd

-END-

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

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Reference List:

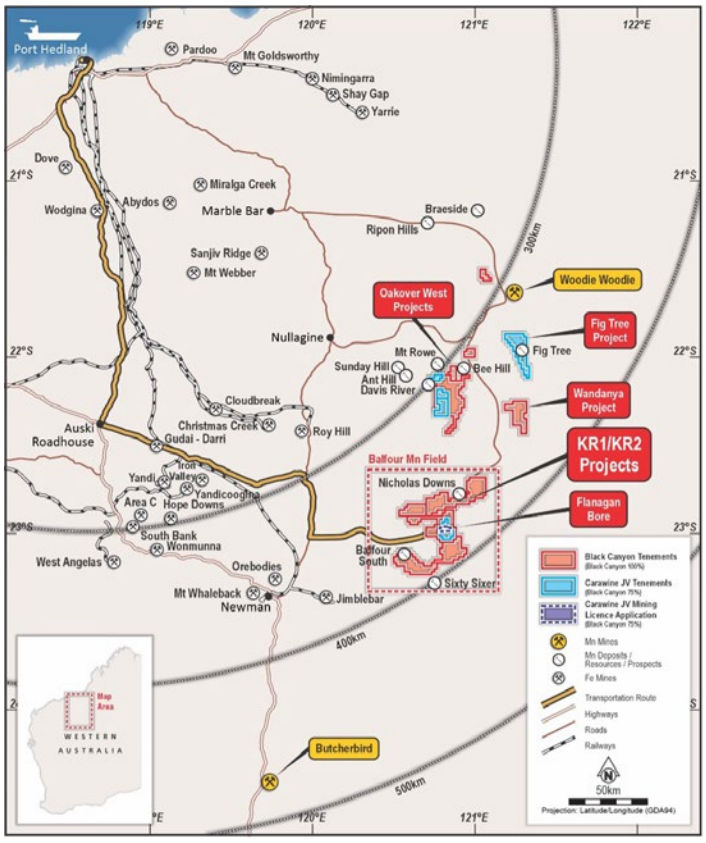
1. 26 March 2024 – Further Testwork Delivers Higher-Grade Manganese Concentrate
2. 17 April 2023 Metallurgical Testwork Successfully Delivers Consistent Concentrate Grades Above 30% Mn
3. 14 June 2023 Black Canyon completes strategic tenement acquisition within the Balfour Manganese Field
4. 12 December 2023 Global Balfour Manganese Mineral Resource Estimates Exceed 300 Mt
5. 27 November 2023 KR1 and KR2 Mineral Resource Estimate Exceeds 100 Mt
6. 26 March 2024 Further Testwork Delivers Higher-Grade Manganese Concentrate
7. 1 May 2024 Dense Media Separation Delivers 32% Manganese Concentrate

About Black Canyon

Black Canyon has consolidated a significant land holding totalling 2,100km² 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, 12 December 2023, 26 March 2024 and 1 May 2024 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.

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