

1 November 2023

**ASX ANNOUNCEMENT**

## Lenton Deposit Coal Reserve Update

- **Coal Reserve estimate for Lenton Deposit upgraded by 32% for ROM Coal and 18% for Marketable Coal.**
- **Lenton Deposit Total ROM Coal Reserve estimate now stands at 19 Mt (13 Mt classified as Proved and 5.8 Mt as Probable) at 6% total moisture.**
- **Lenton Deposit Total Marketable Coking Coal Reserve now stands at 6.6 Mt (4.4 Mt Proved and 2.2 Mt Probable) at 10% total moisture.**
- **Lenton Deposit Total Marketable Thermal Coal Reserve now stands at 6.1 Mt (4.1 Mt Proved and 2.0 Mt Probable) at 9.3% total moisture.**
- **Lenton Deposit Life of Mine average stripping ratio of 7.5 (bank cubic metre of waste per tonne of ROM coal) over a planned mine life of 13 years**

**Bowen Coking Coal Ltd** (ASX: **BCB** or **Company**) has upgraded its Coal Reserve estimate for its Lenton coal deposit, part of the Burton Mine Complex near Moranbah, by 32% for run-of-mine (ROM) coal and 18% for Marketable Coal.

The marked increase is based on the 2023 review into the diversion of the Suttor Development Road which passes through the Lenton tenements along with updated input costs and long-term coal price forecasts.

The Lenton coal deposit is part of Lenton Joint Venture ("Lenton JV") in which New Lenton Coal Pty Ltd, a 100% owned subsidiary of Bowen Coking Coal Ltd has a 90% interest. The 19 Mt Reserve was estimated in accordance with the JORC Code (2012) and classified as 13 Mt in the Proved category and 5.8 Mt in the Probable category (Table 1). The full JORC Table 1 is also appended to the release.

The Company is planning mining operations within the Lenton tenement area comprising ML 70337 ("Lenton"), ML 700053 ("North Lenton IML") and ML 700054 ("South Lenton IML") (Figure 1 and Figure 2). Planned coal mining operations will include truck and excavator open cut mining along with auger mining. The proposed Lenton open cut pits (Figure 3) are greenfield operations that will produce both metallurgical and thermal products and are located adjacent to and north-west of the existing Burton Mine Complex.



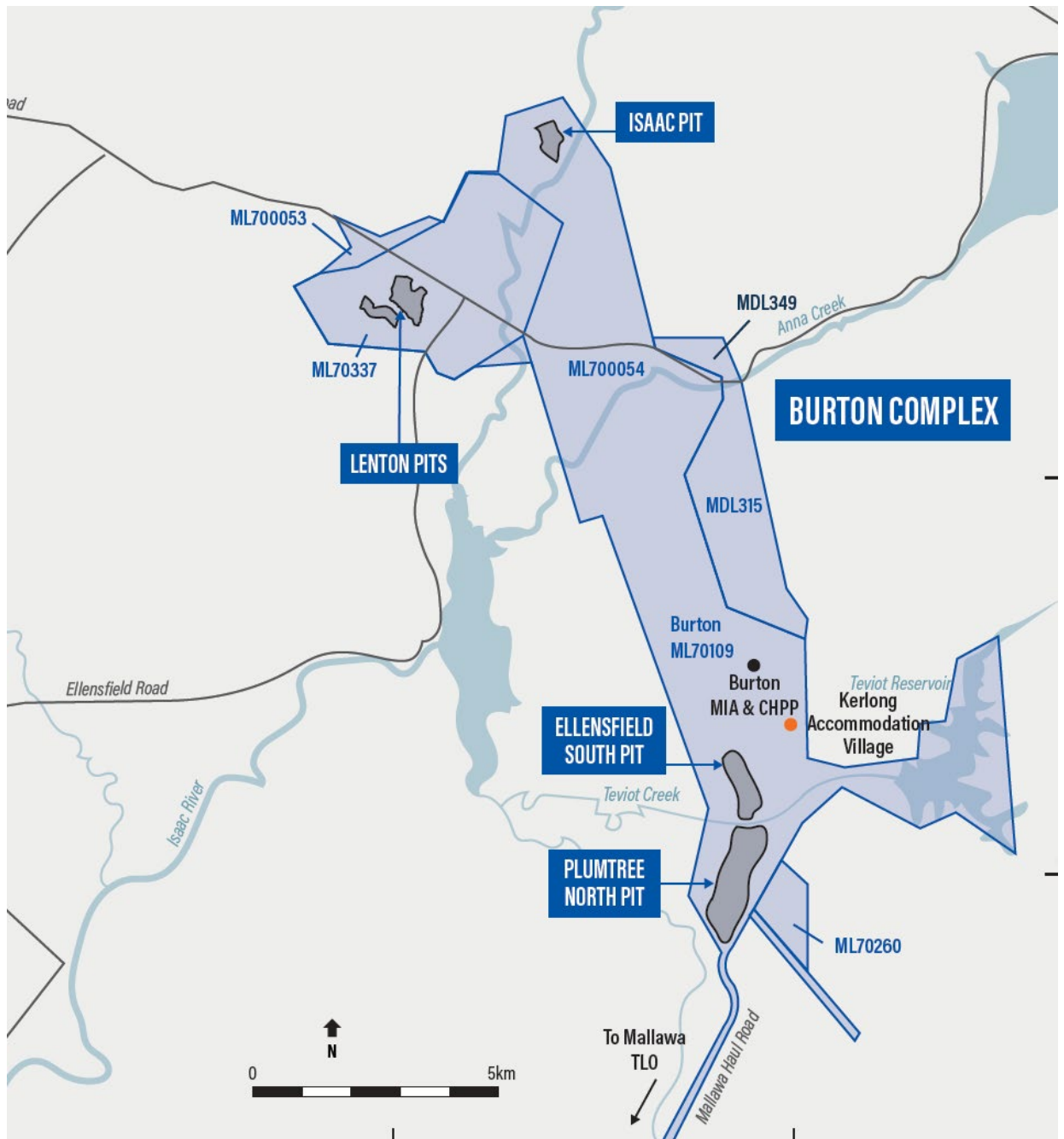
**Table 1.** Total ROM Coal Reserves Estimate, Lenton as at 31<sup>st</sup> October 2023

Mining Method	Lenton ROM Coal Reserves, Mt		
	Proved (Mt)	Probable (Mt)	Total (Mt)
	(at 6% TM)	(at 6% TM)	(at 6% TM)
Total Open Cut Coal Reserves	13	5.7	18
Total Auger Coal Reserves	0.24	0.02	0.26
<b>Total Proved &amp; Probable ROM Coal Reserves, Lenton</b>	<b>13</b>	<b>5.8</b>	<b>19</b>

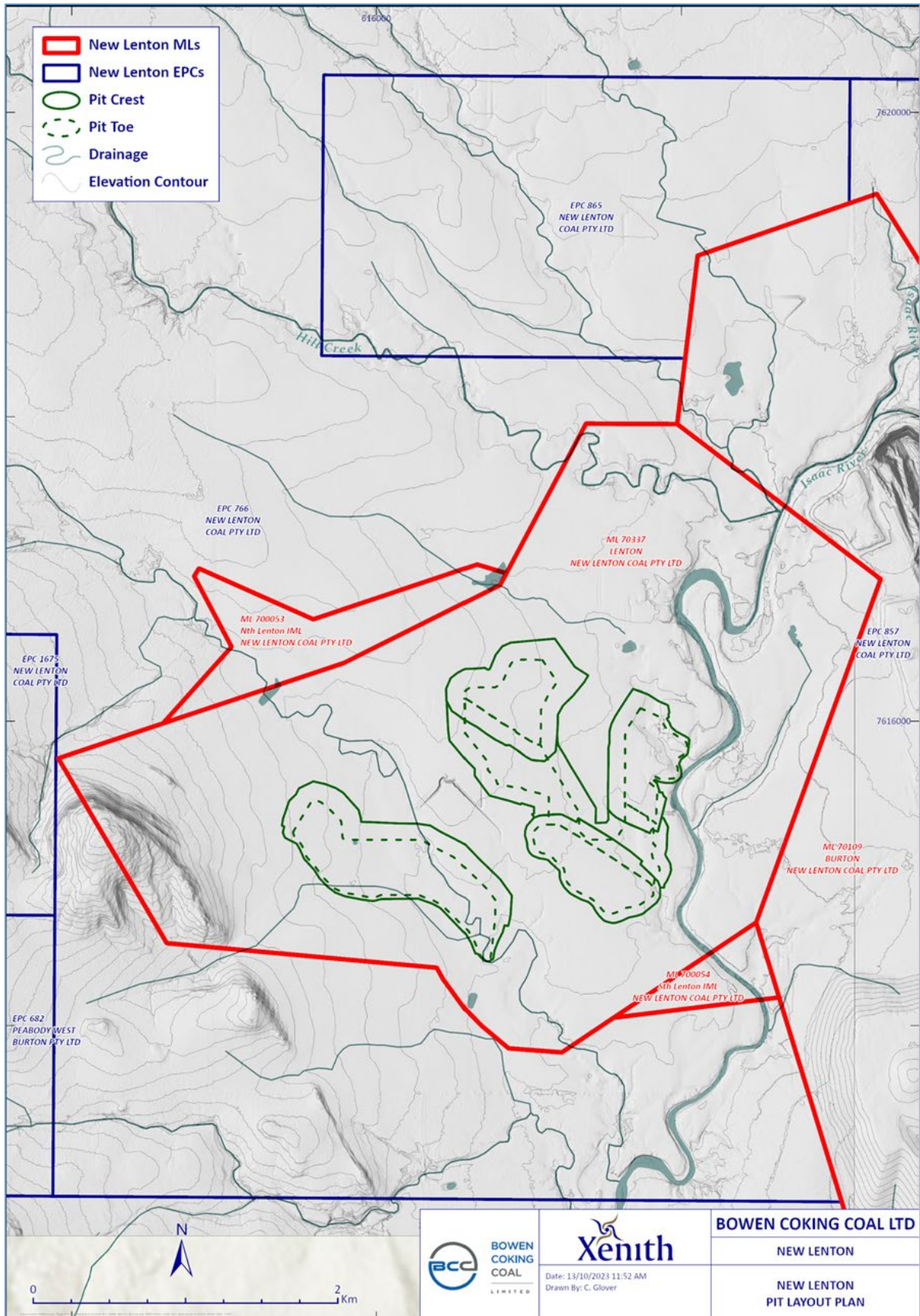
*Note – Some rounding to the nearest significant figure has occurred for overall reported reserve.*



**Figure 1.** Location of Burton Complex which includes the Lenton coal deposit.



**Figure 2.** Burton Complex map showing location of pits including Ellensfield South Pit.



**Figure 3.** Proposed Open Cut Mining Area - Lenton.





The estimated total ROM Coal Reserves along with ROM coal qualities by seam within the Lenton open cut area and auger mining area are presented in Table 2 and Table 3 respectively.

**Table 2.** Total Open Cut ROM Reserve Estimate, Lenton as at 31<sup>st</sup> October 2023

Mining Location	Seam Group	Open cut ROM Coal Reserves (at 6% TM)			Open cut ROM Coal Qualities (at 6% TM)	
		Proved (Mt)	Probable (Mt)	Total (Mt)	Proved, Ash %	Probable, Ash%
Lenton Pits	BR	1.2	0.31	1.5	31%	27%
	BLU	1.2	0.58	1.8	34%	30%
	BLL	0.67	0.37	1.0	31%	29%
	BV2	3.1	1.3	4.4	32%	29%
	VU	1.6	0.56	2.2	30%	29%
	VL1	3.6	2.0	5.6	30%	29%
	VL2	1.3	0.60	1.9	30%	29%
Lenton Pits, Open cut	Grand Total	13	5.7	18	31%	29%

**Table 3.** Total Auger ROM Reserve Estimate, Lenton as at 31<sup>st</sup> October 2023

Mining Location	Seam Group	Augering ROM Coal Reserves (at 6% TM)			Augering ROM Coal Qualities (at 6% TM)	
		Proved (Mt)	Probable (Mt)	Total (Mt)	Proved, Ash (%)	Probable, Ash (%)
Lenton Augering blocks	VL1	0.18	0.02	0.20	15%	17%
	VL2	0.06	0.01	0.06	15%	17%
Lenton Augers	Grand Total	0.24	0.02	0.26	15%	17%

The Marketable coal for the project consists of export specification low ash coking and moderately high ash thermal coals. This has formed the basis of an estimate of Marketable Coal Reserves that has been derived from the ROM Coal Reserve estimate. Therefore, Marketable Coal Reserves are a sub-set of ROM Coal Reserves.

The Marketable Coking Coal Reserve (10% TM) has an overall ash of 8.7% in Lenton. The thermal product (9.3% TM overall) from Lenton has 17% ash and calorific value (CV) of 6,300 kcal/kg (GAR). The total Marketable Coal Reserve for the project is shown in Table 4.



**Table 4.** Total Marketable Coal Reserve, Lenton as at 31<sup>st</sup> October 2023

Coal Type	Lenton Marketable Coal Reserves		
	Proved (Mt)	Probable (Mt)	Total (Mt)
Total Coking Coal Reserves (at 10% TM)	4.4	2.2	6.6
Total Thermal Coal Reserves (at 9.3% TM)	4.1	2.0	6.1
<b>Total Proved &amp; Probable Marketable Coal Reserves, Lenton</b>	<b>8.5</b>	<b>4.2</b>	<b>13</b>

Table 5 and Table 6 summarize the Marketable Coal Reserve tonnages by seam and by product coal type as at 31<sup>st</sup> October 2023.

**Table 5.** Total Marketable Coking Coal Reserve, Lenton as at 31<sup>st</sup> October 2023

Mining Location	Seam Group	Marketable Coking Coal Reserves (at 10% TM)			Marketable Coking Coal Qualities (at 10% TM)	
		Proved (Mt)	Probable (Mt)	Total (Mt)	Proved, Ash %	Probable, Ash%
Lenton Pits & Augers	BR	0.34	0.08	0.42	9.6%	9.5%
	BLU	0.18	0.06	0.24	9.5%	9.5%
	BLL	0.22	0.16	0.38	9.5%	9.5%
	VU	0.02	0.01	0.03	9.7%	9.6%
	VL1	2.7	1.5	4.2	8.5%	8.3%
	VL2	0.93	0.43	1.4	8.7%	8.3%
<b>Lenton Pits &amp; Augers, Coking Coal</b>	<b>Grand Total</b>	<b>4.4</b>	<b>2.2</b>	<b>6.6</b>	<b>8.7%</b>	<b>8.4%</b>



**Table 6.** Total Marketable Thermal Coal Reserve, Lenton as at 31<sup>st</sup> October 2023

Mining Location	Seam Group	Marketable Thermal Coal Reserves (at 9.3% TM)			Marketable Thermal Coal Qualities (at 9.3% TM)			
		Proved (Mt)	Probabl e (Mt)	Total (Mt)	Proved, Ash %	Proved, CV, GAR (kcal/kg)	Probabl e, Ash%	Probabl e, CV, GAR (kcal/kg)
Lenton Pits & Augers	BR	0.22	0.04	0.26	19%	6,200	19%	6,100
	BLU	0.35	0.18	0.52	18%	6,200	17%	6,900
	BLL	0.27	0.10	0.37	19%	6,100	20%	6,000
	BV2	1.4	0.86	2.2	18%	6,100	18%	6,200
	VU	1.1	0.46	1.6	16%	6,300	15%	6,400
	VL1	0.56	0.25	0.81	14%	6,600	15%	6,500
	VL2	0.19	0.07	0.27	14%	6,600	15%	6,500
<b>Lenton Pits &amp; Augers, Thermal Coal</b>	<b>Grand Total</b>	<b>4.1</b>	<b>2.0</b>	<b>6.1</b>	<b>17%</b>	<b>6,300</b>	<b>17%</b>	<b>6,300</b>

Summary of the key information of the Lenton reserve estimate increase, which supplements the information set out in the JORC Resource Report on Lenton Assets of July 2021 referenced in the Company's ASX release dated 4 August 2021<sup>1</sup>.

## Location

The Lenton project is situated approximately 165 km west of Mackay, Queensland and approximately 45 km northeast of the township of Moranbah. This area is one of the world's major coal provinces. The project is covered by Mining Lease ML 70337 ("Lenton") and is a greenfield expansion located north-west of BCC's Burton Mining Complex which produces coking and thermal coal for the export market.

The project is accessible in the north from Nebo via the Suttor Development Road or from the south via the Burton haul road. The Peak Downs Highway links Moranbah to the city of Mackay to the north on the coast, and to the towns of Clermont and Emerald to the south. The Goonyella to Hay Point railway line lies 35 km south of the Mining Lease.

<sup>1</sup> Refer to the Company's ASX release dated 4 August 2021, "Transformational Acquisition of the Burton Mine and Lenton Project". In respect of the cited announcement, the Company, confirms that it is not aware of any new information that materially affects the information included in that market announcement and in respect of estimates of mineral resources and ore reserves, that all material assumptions and technical parameters underpinning the estimates in the announcement continue to apply and have not materially changed.



## **Geology and Geological Interpretation**

The Lenton project area is located on the western flank of the Nebo Synclinorium (whose eastern limb hosts the Burton Mine) and targets the Rangal Coal Measures (RCM). These coal measures were laterally continuous across the Bowen basin and were deposited during the Late Permian. Underlying the RCM are the Fort Cooper Coal Measures (FCCM).

The major coal bearing unit in the Lenton deposit is the RCM, this includes:

- Burton Rider Seam
- Leichhardt Seam
- Vermont Seam

The RCM are characterized by thick seams of bright coal, separated by tuffaceous and/or claystone partings and sandstone and siltstone interburden material. The underlying FCCM has also been intersected during drilling (Girrah Seam).

The economically targeted seams are within the RCM, which typically comprise an average of 50-60 m of alternating coal and interburden material, with a cumulative coal thickness of 7-14 m. Overall the seam dips 15- 40 degrees to the north-northwest with seams cropping to the south and east.

Thick coal seams, rare basalt flows, rare igneous intrusions, major thrust faulting, and occasional normal faulting are characteristic of the Lenton area.

The drill hole density (core and chip) in the Lenton area allows for a good level of confidence in seam splitting, seam thickness, coal quality and location of sub-crop lines.

## **Mining Factors and Assumptions**

Xenith prepared a Coal Resource estimate for the Lenton coal assets in July 2021 which is used as a basis for the current JORC Coal Reserve estimate. These Coal Reserves are a sub-set of the underlying resource estimate; therefore, the Resources are inclusive of the Reserves.

The Coal Reserve estimate presented in this report is based on the outcome of pit optimisation results, applicable mining methods, mining schedule and the financial analysis carried out by Xenith.

The Competent Person for the estimation of Coal Reserves considers that the proposed mine plan and mining schedule is technically and economically viable and achievable. This has been done by reviewing all the modifying factors, estimating Reserve in the pit shell and preparing a production schedule and economic model which confirms a positive cash margin using the cost and revenue factors as described in this report. The following Table 7 outlines the mine design factors to estimate the Reserve Tonnage.





**Table 7.** Mine Design factors

Factor	Chosen Criteria
Minimum mining thickness of coal and maximum parting thickness	0.3m
Overall Highwall and Endwall slope of the Open cuts	40°-45°
Overall Lowwall (Spoil dump) slope	28-30°
Maximum Pit depth for Open cut	100-150m
Minimum Mining width at Pit bottom (Strip width)	50m
Auger mining depth of penetration	Up to 150m
Exclusion of Mining lease and offset from Pit crest	50m

Xenith engaged Blackrock Mining Solutions for Geotechnical design parameter assessment for the Lenton pits. The geotechnical assessment report dated December 2020 has suggested standard design angles and this information has been used for the construction of open cut pits for the Reserves estimate.

The open cut pits proposed in the Lenton mining area are green field and have not been mined previously. The mining factors applied to the resource model for deriving mining quantities were selected based on the use of suitably sized excavators and trucks which were used previously used in this area and being currently used in BME and ES pits (Burton Complex).

The Coal resource geology, economic, lease extent and Suttor Development Road diversion alignment have been used to form the limits of the open cut and auger mining. Coal Augering Services (CAS), an auger mining contractor were consulted to ensure the technical viability and to estimate coal recovery in proposed auger mining blocks.

The economic pit floor for the Lenton pits is the VL2 (Vermont Lower 2) seam in all the open cut mining areas. Auger mining area targets Vermont seam plies VL1 and VL2 in two of the Lenton pits highwalls.

Loss and dilution factors that have been applied in determining ROM coal quantities. The coal recovery in the auger mining blocks has been estimated based on the similar mining conditions and the estimate provided by CAS in the proposed blocks.

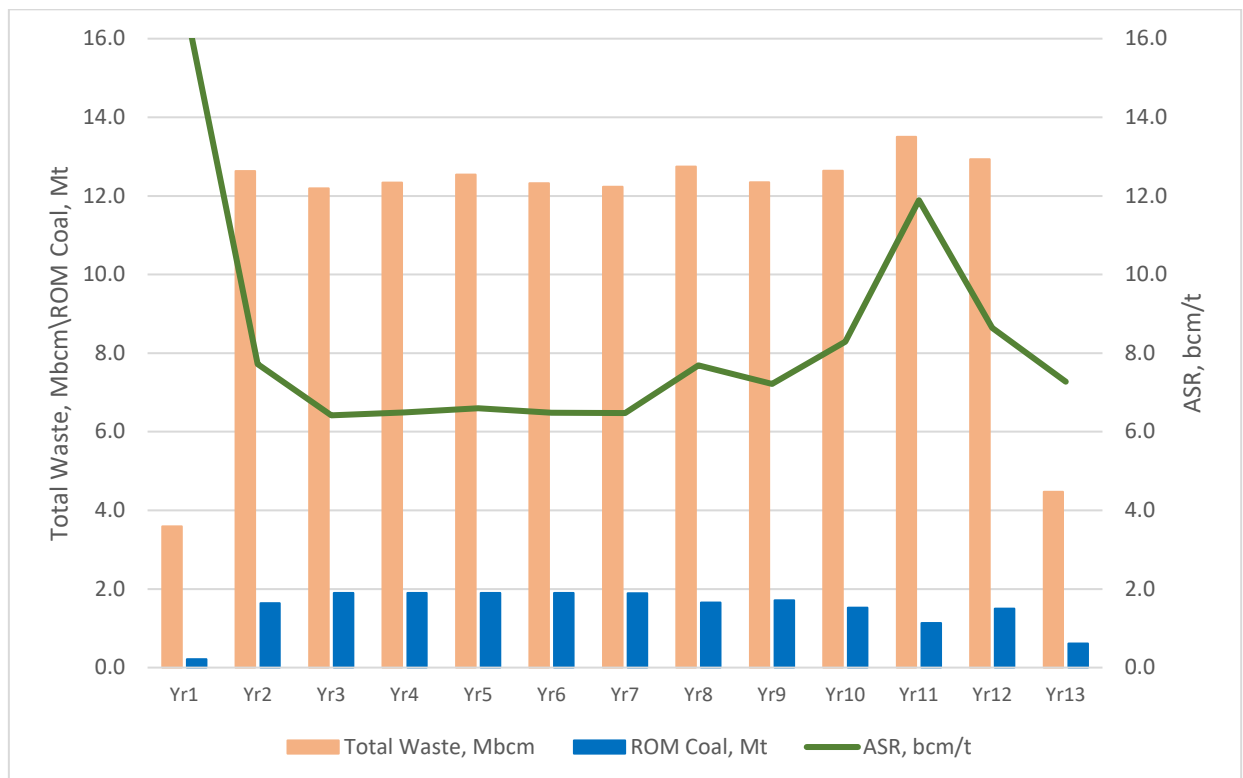
Xenith considers that the proposed mining approach at Lenton will be similar to that in the existing BME and ES pits. As the coal seams in Lenton pits are steeply dipping at 25 to 40 degrees, terrace mining method has been planned to mine coal. Auger mining will be deployed in two of the Lenton pit highwalls, where seam dip allows.

Waste and parting removal, coal mining and reject haulage have all been scheduled within the Micromine “SPRY” software model. Quantities for other activities (e.g. topsoil, drill and blast) have been estimated from the excavation quantities.

The mine schedule assumes terrace-style mining methodology utilizing a combination of excavators and dozers. Auger mining has been planned, following the open cut mining advancing faces once the strike for auger mining becomes available in those pits.



The mine life based on the schedule target in the Lenton project area is about 13 years. The mine schedule from the current mine plan maximizes the total annual product coal. The Lenton mining schedule forecasts annual production of up to 2.0 Mt. Although included in the mining schedule, the small amount (~3% of Total LOM Coal) of Inferred coal has been omitted from the Reserve estimate. The Inferred quantities in the LOM pit shell in Lenton (Pit LNBC\_3) will be mined near the end of mine-life. The Lenton Deposit Life of Mine average stripping ratio is 7.5 (bank cubic metre of waste per ROM tonne of coal).



**Figure 4. LOM Mining Schedule, Lenton**

### Mine Infrastructure and Suttor Road Diversion

The Lenton project has all the required mine infrastructure and train load out facilities for operation of the mine to produce the scheduled product coal. The Burton mine has in the past processed up to 6Mt of ROM coal annually through existing infrastructure producing product coal that has been transported to the Dalrymple Bay Coal Terminal (DBCT) for the export market.

Suttor Development Road passes through the Lenton area and was not considered for diversion in the previous Coal Reserves estimate dated 31<sup>st</sup> July 2021.

With updated input costs and revenue parameters and the decision by BCC to consider diversion of the Suttor Development Road within Lenton ML, Xenith prepared an update of the JORC Coal Reserves estimate as at 31<sup>st</sup> October 2023 within Lenton MLs. Xenith's cost-benefit modelling indicates that a diversion of Suttor Development Road is justifiable. Xenith estimate the total capital cost expected for re-alignment of the Suttor Development Road to be in the range of \$3-\$5M per km for about 7km.



## **Metallurgical Factors and Market Assessment**

The Lenton mining area has comprehensive coal quality data to support ROM and product coal. The metallurgical process is well known for the Burton, Leichhardt and Vermont seams in the Burton Downs mining area and has been used in the past for the marketable products.

The existing coal handling and preparation plant will be using similar washing technology to produce low ash coking and moderately high ash thermal coal. The product coal (coking and thermal coal) from Lenton pits and augers will be sold into appropriate markets.

The Coal Resource model used for this Coal Reserve estimate contained yield and washability data with specified products yields and coal qualities by seam. No allowance has been made for deleterious elements or out of specification products.

## **Cost and Revenue Factors**

Quantities and qualities derived from the geological model and the battered block designs have been transferred into a Spry mine scheduling model. This Spry model performed the calculations needed to estimate insitu, ROM, Product and Reserve data from imported data. Margins have been calculated for all seam-level records, as an aid to determining cut-off margin blocks in all the Lenton pit areas.

Measured and Indicated Coal Resources were used and defined separately with waste allocations in line with the current mine plan. Coal Reserve (Proved Coal Reserve and Probable Coal Reserve) have been estimated considering economics and physical and operational constraints such as existing infrastructure and spoil dump locations.

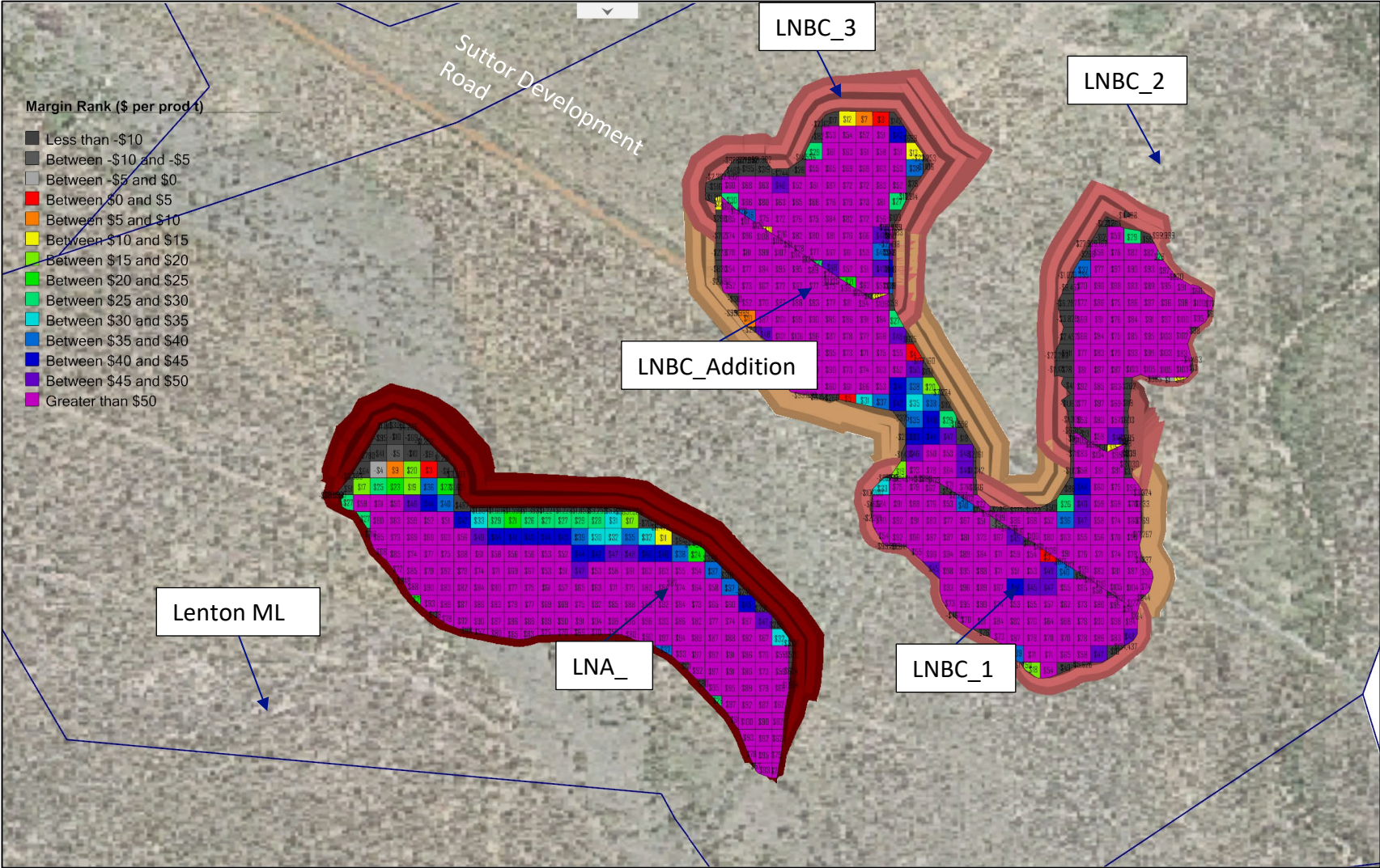
The Reserves for the Lenton pits and auger mining areas have been estimated on the basis that the mining operations will be performed by truck and excavator for open cut mining and utilizing augering in the planned high wall coal within the mining lease area when available. Reserve tonnages and qualities have been converted to the desired moisture bases for reporting.

BCC has provided the Commodity Insight ("CI") report dated June 2023 on coal price forecasts for long term coking and thermal coal price. The long-term coal price for BCC Lenton coking at 9.5% ash as per the CI report has been estimated at USD 146/t. BCC also provided foreign exchange (FX) forecasts (AU\$:US\$) as 0.68. Both the coal price and foreign exchange forecasts consider the Lenton open cut mine life of ~13 years.

Figure 5 shows the margin rank of proposed open cut pits LNA\_1, LNBC\_1, LNBC\_2, LNBC\_3 pit and LNBC\_Addition within the Lenton mining area based on the estimated cost and long-term price forecast assumptions. Margin rank analysis has resulted in delineation of pit shells generating positive margin. There are a few blocks with negative margin in the sub crop region which have been included for mine access, mine waste dumping (in the no coal bearing area) and practical and safe alignment of the final highwall. Margin Ranking for Lenton mining area includes sustaining capital but excludes development capital required.



Figure 5. Lenton Margin Rank of Final pit shells, Lenton







## **Environmental Factors**

Lenton have been granted the required Mining Licenses and has approved Environmental authorities, however Lenton still requires final Federal approval (EPBC), with submission currently underway.

There are various environmental constraints which have been noted through the current approvals process within ML 70337 and these are:

- A referral under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC 2020/8778) for the Lenton Mine was submitted in September 2020. In October 2020, the Commonwealth Government determined that the Project was a “controlled action” and would be assessed by public environment report (PER). Final PER Guidelines were issued by the Commonwealth Government in December 2022. Technical studies are being finalised.
- A transitional Progressive Rehabilitation and Closure Plan (PRCP) under the Queensland Environmental Protection Act 1994 is on track for submission in February 2024.
- Further environmental approval requirements include identifying and legally securing biodiversity offsets prior to commencement and establishing an Infrastructure Agreement between the proponent and Queensland Government about the Suttor Development Road realignment. The area of the Suttor Development Road to be disturbed within ML70337 is 19.3ha and is a part of the approved EA.

Cultural heritage surveys have been conducted on ML 70109 and ML 70337 and a small amount of surveying occurring on EPC 766. The document also notes that CHMP exist between New Lenton Coal Pty Ltd and the Barada Barna people in relation to ML 70109, MDL 315, MDL 349 and EPC 857. The Lenton Burton Joint Venture Overview document also notes that a substantial area of ML 70337 requires cultural heritage survey.

The land underlying ML 70337, ML 700053 and ML 700054 is 100% exclusive land and therefore, Native Title has also been extinguished in these areas. It is understood that when the Burton Mallawa Haul Road was realigned, consent was required from the Native Title group, the Barada Barna people and that this was reflected in an Ancillary Agreement for Mining Lease Variation on 18 Aug 2017.

## **Risk Factors**

Xenith views that the Coal Reserve estimates reported herein are subject to risks including but not limited to the following:

- Securing up the transfer of Environment Authority (EA) conditions where needed and having all the approvals and permits in place before the planned start date of mine operations.
- Suttor Development Road diversion approvals and its new alignment
- Auger mining has been considered up-to 150 m depth into the highwall but the resultant coal recovery, coal qualities and penetration rate depends on the geological uncertainties.
- Coal Reserve estimates resulting from the current mine plans and the mine schedules are based on supplied data from the client including the latest topographical plan and geological data.





- Coal from the project has well established product yields based on washability analysis but may vary depending upon loss and dilution associated with open cut coal mining and augering.
- Product coal (Coking and Thermal) from the project has always been sold to the market in the past, but there will always be some risks associated with the marketing of product coal in the future.
- BCC has engaged BUMA as mine operator for existing BME and ES open cut mine operations but there will always be risks in the availability of standard equipment and labour resources for Lenton open cut operations in the future.

**The Board of the Company has authorised the release of this announcement to the market.**

**For further information please contact:**

Mark Ruston  
Chief Executive Officer  
+61 (07) 3191 8413

Sam Aarons  
Investor Relations  
+61 418 906 621

### **About Bowen Coking Coal**

BCB is a Queensland based coking coal company which operates the Burton and Bluff metallurgical coal mines, with the Isaac River mine in development and a number of advanced exploration assets. BCB fully owns the Bluff PCI and Broadmeadow East mines as well as the Isaac River, Cooroora, Hillalong (85%) and Comet Ridge coking coal projects in the world-renowned Bowen Basin in Queensland, Australia. BCB also holds a 90% interest in the Lenton Joint Venture which owns the Burton Mine and Lenton Project in the northern Bowen Basin, which has been recommissioned and is currently under mine development. BCB has agreed with the JV partner to incorporate the Broadmeadow East mine into the Joint Venture. BCB is also a joint venture partner in the Lilyvale (15% interest) and Mackenzie (5% interest) coking coal projects with Stanmore Resources Limited.

The highly experienced Board and management team aim to grow the value of the company's coking coal projects to benefit shareholders. An aggressive exploration, development and growth focused approach underpins the business strategy.

### **Competent Person Statement:**

The information in this announcement that relates to the Coal Reserve estimate as at 31st October 2023 for Lenton coal assets currently held by Bowen coking Coal ("BCC") within the mining leases ML 70337, MLA 700053 and MLA 700054 for Open Cut and Auger mining, is based on and fairly represents information and supporting documentation prepared by Mr Sunil Kumar.



This Coal Reserve estimate has been prepared in accordance with the requirements of the 2012 edition of the Australasian Code for Reporting of Mineral Resources and Ore Reserve (JORC Code).

Sunil Kumar is an employee of Xenith Consulting Pty Ltd and is employed in a full-time capacity as a Principal Mining Engineer. He has over 30 years of experience in mining in the open cut coal mining industry that is relevant to the style of mineralization and type of deposit described in the report, and the type of activity involved in the estimation of the coal Reserve.

Sunil Kumar is a Member of the Australasian Institute of Mining and Metallurgy and qualifies as a Competent Person under the JORC Code.

Neither Sunil Kumar, nor Xenith Consulting Pty Ltd, has any material interest or entitlement, direct or indirect, in the securities of Bowen Coking Coal Ltd or any associated companies. Fees for the preparation of this report are on a time and materials basis only.

Sunil Kumar consents to the release of the report, in the form and context in which it appears.



Lenton  
Table 1 – Coal Reserve Estimate

OCTOBER 2023

## TABLE OF CONTENTS

## LIST OF FIGURES

## LIST OF TABLES

## LIST OF APPENDICES

Appendix A. JORC TABLE 1 .....	3
--------------------------------	---

### DISCLAIMER

This document and the drawings, information and data recorded in this document has been prepared by Xenith Consulting Pty Ltd with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with you (our Client).

Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This document is solely for the use of the authorised recipient and this document may not be used, copied or reproduced in whole or part for any purpose other than that for which it was supplied by Xenith Consulting Pty Ltd.

Xenith Consulting Pty Ltd makes no representation, undertakes no duty and accepts no responsibility to any third party who may use or rely upon this document or the drawings, information and data recorded in this document.

Any operating or capital cost estimation is current as at the date of estimation only.

The estimation assessed herein may change significantly and unexpectedly over a relatively short period of time (including as a result of general market movements and factors specific to the particular mine, project or deposit).

We do not accept responsibility or liability for losses arising from such subsequent changes in costing.

Without limiting the generality of the above comment, we do not assume responsibility or accept liability where the costing is relied upon after the expiration of 60 days from the date of the estimation or such earlier date if you become aware of any factors that have an effect on the estimation.





## APPENDIX A. JORC TABLE 1

### Section 1 Sampling Techniques and Data

Please refer to JORC Resource Report on Lenton Assets, July 2021

### Section 2 Reporting of Exploration Results

Please refer to JORC Resource Report on Lenton Assets, July 2021

### Section 3 Estimation and Reporting of Mineral Resources

Please refer to JORC Resource Report on Lenton Assets, July 2021

### Section 4 Estimation and Reporting of Ore Reserve

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code Explanation	CP Comments
<b>Mineral Resource estimate for conversion to Ore Reserves</b>	<ul style="list-style-type: none"> <li>• <i>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</i></li> <li>• <i>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Lenton deposit is located approximately 65 km north of Moranbah and 120 km west-southwest of Mackay, Queensland. It is immediately west of Peabody's Burton Mine which produced coking and thermal coal for the export market.</li> <li>• The Lenton Joint Venture (LJV) is a tenancy in common agreement between New Lenton Coal Pty Ltd (NLC), a subsidiary of new Hope Corporation Ltd, and Formosa Plastics Group (FPG), a subsidiary of MPC Lenton Pty Ltd. NLC has a 90% controlling interest with the remaining 10% held by FPG. Bowen Coking Coal (BCC) has acquired LJV coal assets in mid-2020 along with Burton coal assets.</li> <li>• The Lenton Project comprises the mining areas (pits and auger mining area) which are being planned to extract metallurgical and thermal coal within ML 70337, 700053 and 700054.</li> </ul>



Criteria	JORC Code Explanation	CP Comments
		<ul style="list-style-type: none"> <li>JORC Coal Resource estimates for Lenton deposit have been prepared by Xenith and signed off by Troy Turner as the competent person. These have been used as the basis for the conversion from Coal Resources to Coal Reserves for the Lenton coal deposit.</li> <li>Lenton Resource models have included seams from the Burton Rider, Leichhardt and Vermont seam groups from the Rangal coal measures. Total Coal Resource estimates of 140 Mt reported within Lenton are as follows: <ul style="list-style-type: none"> <li>Measured: 60 Mt</li> <li>Indicated: 50 Mt</li> <li>Inferred: 30 Mt</li> </ul> </li> <li>The Coal Resource estimates are inclusive of the Coal Reserve estimate.</li> </ul>
<b>Site Visits</b>	<ul style="list-style-type: none"> <li><i>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</i></li> <li><i>If no site visits have been undertaken indicate why this is the case.</i></li> </ul>	<ul style="list-style-type: none"> <li>The competent person is familiar with the general area proposed for the project (Lenton area), no site visit specifically for the purpose of preparing this Coal Reserve estimate was undertaken, as the competent person doesn't believe it would have added to knowledge of the site.</li> </ul>
<b>Study Status</b>	<ul style="list-style-type: none"> <li><i>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</i></li> <li><i>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and</i></li> </ul>	<ul style="list-style-type: none"> <li>The nearby Burton mining complex was initially developed by Portman Resources in 1996 and operated by Thiess. In 2004, Peabody Energy purchased the Burton Project which Thiess continued to operate on their behalf until its transfer to care and maintenance in 2016. Subsequently, New Lenton Coal Pty Ltd and MPC Lenton Pty Ltd, as part of the New Hope Lenton Burton Joint Venture, acquired</li> </ul>

Criteria	JORC Code Explanation	CP Comments
	<p><i>economically viable, and that material Modifying Factors have been considered.</i></p>	<p>the Burton Project area in late 2017, given its close proximity to their New Lenton Project area. Operations have not resumed since the purchase in late 2017. BCC acquired the Burton and Lenton coal assets in mid-2020.</p> <ul style="list-style-type: none"> <li>• Both thermal and coking coal have been previously produced for export markets at the Burton mine. The Leichhardt and Vermont seams of the Rangal Coal Measures and the top of the Fort Cooper Coal Measures were the primary resource targets. Processed coal from the Burton Project CHPP was trucked 36 km south along the Mallowa haul road to the Train Load Out (TLO) facility located at the southern end of ML 70109. The product was then transported 150 km on the Goonyella Rail line to the export terminal at Dalrymple Bay Coal Terminal (DBCT).</li> <li>• BCC is currently operating two open cuts at Broadmeadow East (BME) and Ellensfield South (ES) of Burton coal assets located about 12km and 20km respectively South-east from proposed Lenton pits. Coal from both the open cuts are being processed at the existing Burton CHPP and the product coal is being transported to TLO by Mallowa haul road for export through Goonyella Rail line.</li> <li>• Open cut mining method at Lenton pits have been planned by terrace mining method as the seams dip steeply at 15-40 degrees. Waste will be drilled and blasted before being removed by bench using large hydraulic excavators and rear dump trucks. The waste mined from Lenton pits will be dumped ex-pit and in-pit as well in the voids behind the active mining operations.</li> </ul>

Criteria	JORC Code Explanation	CP Comments
		<ul style="list-style-type: none"> <li>• Open cut coal mining has been planned to be mined by both smaller and large hydraulic excavators and hauled by rear dump trucks to a ROM stockpile pad before being processed by a coal handling and processing plant.</li> <li>• Product coal will be railed to export coal ship loading facilities at Dalrymple Bay Coal Terminal (DBCT).</li> <li>• Modifying factors used to convert Coal Resources to Coal Reserves have been derived from the knowledge of the past mining activities.</li> <li>• Xenith is of the view that there is sufficient information available with the past mining activities in Burton area and in the existing BME and ES open cut coal mine for suitable mining method and mining cost basis for the financial analysis to be verified and have a high confidence level in the current financial model for Lenton. Also, the reasonableness of costs has been verified from the contractor's rates due to their early engagement in this process.</li> </ul>
<b>Cut-off Parameters</b>	<ul style="list-style-type: none"> <li>• <i>The basis of the cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>• A maximum raw ash content of 50% (adb) has been applied a cut off to the resource estimate. None of the cored/analysed seam samples show an ash content above 50%.</li> <li>• Final pit limits used as guidance for strip design have been defined using pit optimisation software. Margin of the open cut blocks was applied to the mine design, as well as an offset from the proposed mining lease boundaries and watercourses.</li> </ul>

Criteria	JORC Code Explanation	CP Comments
		<ul style="list-style-type: none"> <li>• The mine schedule has been evaluated in a financial analysis tool to examine schedule financial viability. This has been utilised as to validate the economics of the Reserves.</li> <li>• A thickness cut-off of 0.30m has been used for both coal (minimum seam thickness) and waste (maximum parting thickness) during coal seam aggregation for the Coal Reserve estimate.</li> </ul>
<b>Mining Factors or Assumptions</b>	<ul style="list-style-type: none"> <li>• <i>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</i></li> <li>• <i>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</i></li> <li>• <i>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</i></li> <li>• <i>The major assumptions made, and Mineral Resource model used for pit and stope optimisation (if appropriate).</i></li> <li>• <i>The mining dilution factors used.</i></li> <li>• <i>The mining recovery factors used.</i></li> <li>• <i>Any minimum mining widths used.</i></li> <li>• <i>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</i></li> <li>• <i>The infrastructure requirements of the selected mining methods.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The criteria utilised to determine if a Resource can be converted to a Reserve include appropriate Resource classification of Measured or Indicated, pit optimisation to determine target area, mine design to create mining blocks inside the economic pit limit, application of appropriate modifying factors to estimate the Reserve tonnage and scheduled economic evaluation to ensure financial viability.</li> <li>• Modifying factors used to convert Coal Resources to Coal Reserves have been derived from the knowledge on the past mining operations at Burton and the current mining operations at BME and ES open cuts.</li> <li>• Truck and excavator mining method has been employed in the past and in the current open cut mining. The Competent Person considers that this method is appropriate to extract coal of this nature.</li> <li>• Geotechnical design parameter assumptions have been based on standard design angles as suggested in geotechnical assessment report dated Dec 2020 carried out by Blackrock Mining Solutions, engaged by Xenith for</li> </ul>

Criteria	JORC Code Explanation	CP Comments
		<p>the Burton Downs and Lenton pits and this has been used for the conversion of Resources to Reserves.</p> <ul style="list-style-type: none"> <li>• The geotechnical design parameters used were: <ul style="list-style-type: none"> <li>- 70 degree overall angle in highwall (HW) through unweathered material</li> <li>- 45 degree overall angle in HW through weathered material</li> <li>- 37 degree lowwall (LW) (angle of repose)</li> </ul> </li> <li>• A scheduling model was developed on the basis of product coal washing capacity at the Coal handling and Preparation Plant (CHPP) near the Burton mine. There will be additional ROM coal haul of about 7-8 km from the Lenton pits to the CHPP. The product coal from the CHPP will be hauled to the train load out (TLO) located about 36km from the CHPP at the southern end of ML 70109. This has been considered for the mine schedule for the waste and coal mining operations and has been used to convert Resources to Reserves.</li> <li>• Waste dilution was estimated by assuming an average roof and floor dilution of 0.08m (each). Dilution density has been assumed at 2.2 t/m<sup>3</sup>. Dilution ash has been assumed at 85%.</li> <li>• Coal loss has been estimated by assuming an average roof loss of 0.08m and average floor loss of 0.08m.</li> <li>• No minimum mining width has been explicitly defined. Strips have been designed at a width of 50m in</li> </ul>



Criteria	JORC Code Explanation	CP Comments
		<p>conventional down-dip mining areas. Standard coal blocks have been designed at a length of 100m.</p> <ul style="list-style-type: none"> <li>• 30% coal recovery from Lenton auger mining blocks has been assumed based on the advice obtained from an auger mining contractor (Coal Augering Services). It has also been agreed by Bowen Coking Coal to be appropriate.</li> <li>• No Inferred Coal Resource has been included in the reported Coal Reserves. However, there is about 3% (0.6Mt) Inferred Resources included in the LOM mine plan (Total ROM Coal – 19.5Mt) that underpins the JORC Reserve estimate. It lies in LNBC_3 pit and will be mined later in the mine plan.</li> <li>• Project infrastructure requirements were included in project capital estimates.</li> </ul>
<b>Metallurgical Factors or Assumptions</b>	<ul style="list-style-type: none"> <li>• <i>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</i></li> <li>• <i>Whether the metallurgical process is well-tested technology or novel in nature.</i></li> <li>• <i>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</i></li> <li>• <i>Any assumptions or allowances made for deleterious elements.</i></li> <li>• <i>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Lenton mining area has sufficient coal quality data to support ROM and product coal.</li> <li>• The existing coal handling and preparation plant at Burton will be using similar washing technology to produce low ash coking and thermal coal.</li> <li>• This metallurgical process is well known and has been used in the past for the marketable products.</li> <li>• The Coal Resource model used for this Coal Reserve estimate contained yield and washability data with specified product's yield and coal qualities by seam.</li> <li>• No allowance has been made for deleterious elements or out of specification products.</li> </ul>

Criteria	JORC Code Explanation	CP Comments
	<ul style="list-style-type: none"> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	
<b>Environmental</b>	<ul style="list-style-type: none"> <li>The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.</li> </ul>	<ul style="list-style-type: none"> <li>Key environmental approvals are in place for Lenton project area as the nearby Burton open cut was an operating mine.</li> <li>The proposed mining operation is located within ML 70337, MLA 700053 and MLA 700054.</li> <li>The competent person considers that there are reasonable grounds to expect that the proposed mining operations at Lenton will adhere to the current EA (Environment Authority) provisions.</li> </ul>
<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.</li> </ul>	<ul style="list-style-type: none"> <li>Infrastructure already existing on site include site access roads, administration building, bathhouse, maintenance facilities, dams and water management infrastructure, a coal handling and processing plant and associated infrastructure, stockpiles, waste storage facilities and electrical infrastructure.</li> <li>Train loadout (TLO) and rail infrastructure is available to transport the coal through Goonyella Rail line to the export terminal at Dalrymple Bay Coal Terminal (DBCT).</li> <li>It is proposed that the open cut will be contracted so the workforce for the project operations is likely to be sourced from the local area. Accommodation will be provided in the existing camp at Burton.</li> </ul>
<b>Costs</b>	<ul style="list-style-type: none"> <li>The derivation of, or assumptions made, regarding projected capital costs in the study.</li> </ul>	<ul style="list-style-type: none"> <li>Bowen Coking Coal has provided the capital cost estimates for Burton and Lenton coal assets carried out by Fraser-</li> </ul>

Criteria	JORC Code Explanation	CP Comments
	<ul style="list-style-type: none"> <li><i>The methodology used to estimate operating costs.</i></li> <li><i>Allowances made for the content of deleterious elements.</i></li> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co-products.</i></li> <li><i>The source of exchange rates used in the study.</i></li> <li><i>Derivation of transportation charges.</i></li> <li><i>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</i></li> <li><i>The allowances made for royalties payable, both Government and private.</i></li> </ul>	<p>Lever Pty Ltd that states the estimates at -5% +20% accuracy level and it includes the development capital and sustaining capital estimates.</p> <ul style="list-style-type: none"> <li>Xenith is of the opinion that the capital cost estimates requirement for Burton Downs pits and Lenton pits are reasonable and satisfy the requirement to be at Pre-Feasibility level. Lenton pit area has two additional capital cost items in its infrastructure development and EPBC referral totalling \$16M and rest of the items are shared with Burton Downs capital costs.</li> <li>Xenith has estimated the capital costs for Sutor Development Road diversion at the rate of \$3-5M per km. It is expected that the total length of road diversion would be about ~7km. It has been included in the capital costs estimates for Lenton projects.</li> <li>No capital has been incorporated for mining equipment as the project has been modelled as a contract operation and all earth moving and other mining equipment related capital is included in operating costs as a contractor capital charge.</li> <li>Operating costs for the mining study were derived from the existing contract rates at BME and were estimated as reflective of similar contractor operations for the Lenton Coal Reserve estimate.</li> <li>Costs were estimated in Australian dollars.</li> <li>A government royalty determined in accordance with QLD government mining royalty rates has been included in the economic evaluation.</li> </ul>

Criteria	JORC Code Explanation	CP Comments
<b>Revenue Factors</b>	<ul style="list-style-type: none"> <li><i>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</i></li> <li><i>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</i></li> </ul>	<ul style="list-style-type: none"> <li>Price forecasts for coking and thermal coal products (Commodity Insight Report, June 2023) were provided by BCC and has been considered for the long-term price forecast. BCC has also provided price discounts from the benchmark forecasts to reflect expected product quality. As the proposed mine life at Lenton would be about 13 years with the proposed mine schedule, the long-term price forecasts for Lenton Coal are reflective of that period.</li> <li>Lenton Coking Coal – specified at 75% to the forecast benchmark Premium Low Volatile Coking Coal (PLVCC) FOB Qld price.</li> <li>Lenton Thermal – Forecast Newcastle benchmark price at 5500NAR.</li> <li>The detail of this process and of the price forecasts is commercially sensitive and is not disclosed in this table.</li> <li>The exchange rate forecast (AUD:USD) provided by Bowen Coking Coal and used for the Lenton economic evaluation is 0.68.</li> </ul>
<b>Market assessment</b>	<ul style="list-style-type: none"> <li><i>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</i></li> <li><i>A customer and competitor analysis along with the identification of likely market windows for the product.</i></li> <li><i>Price and volume forecasts and the basis for these forecasts.</i></li> <li><i>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</i></li> </ul>	<ul style="list-style-type: none"> <li>The coal products from the Burton Project have well established market in the past. The currently operated BME mine is exporting the product coal, both coking and thermal coal since October 2022. It is expected that Lenton product coal will continue to be sold in the same market in the future as well.</li> <li>Price forecasts are described in the section above labelled “Revenue Factors”.</li> </ul>

Criteria	JORC Code Explanation	CP Comments
<b>Economic</b>	<ul style="list-style-type: none"> <li><i>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</i></li> <li><i>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</i></li> </ul>	<ul style="list-style-type: none"> <li>A financial model has been developed by Xenith and used for financial evaluation of the mine plan that forms the basis of the Coal Reserve estimate.</li> <li>The discount rate used was 8%.</li> <li>Inflation was not included in the financial model, as all values used were quoted as real values.</li> <li>The project NPV and sensitivities are considered commercially sensitive and are not disclosed in this report.</li> </ul>
<b>Social</b>	<ul style="list-style-type: none"> <li><i>The status of agreements with key stakeholders and matters leading to social licence to operate.</i></li> </ul>	<ul style="list-style-type: none"> <li>The stakeholder engagements including Cultural Heritage and Native Title are already in place due to past mining operations and will continue through the planned mining operations at Lenton.</li> <li>The competent person considers that there are reasonable grounds to expect that the current agreements will continue to be in place and that there are no significant issues that should prevent stakeholder agreements as required by the Lenton project plan.</li> </ul>
<b>Other</b>	<ul style="list-style-type: none"> <li><i>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</i></li> <li><i>Any identified material naturally occurring risks.</i></li> <li><i>The status of material legal agreements and marketing arrangements.</i></li> <li><i>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or</i></li> </ul>	<ul style="list-style-type: none"> <li>Mining leases and environmental approvals are already in place received from the Government.</li> <li>The competent person considers that there are reasonable grounds to expect that the current approvals will continue to hold required by the project plan and BCC will acquire further necessary approvals to operate coal mine within Lenton leases.</li> </ul>



Criteria	JORC Code Explanation	CP Comments
	<i>Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</i>	
<b>Classification</b>	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Ore Reserves into varying confidence categories.</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> <li>• <i>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</i></li> </ul>	<ul style="list-style-type: none"> <li>• All Measured Resources inside the mine plan and economic limit have been converted to Proved Coal Reserves and similarly Indicated Resources inside the mine plan and economic limit have been converted to Probable Coal Reserves.</li> <li>• No Coal Resources classified as Inferred have been included in the Coal Reserve estimate.</li> <li>• There is about 0.6 Mt of Inferred Coal Resource (about 3% of the total ROM Coal) in the LOM mine plan in LNBC_3 pit that will be mined later in the mine plan.</li> <li>• The Competent Person considers that the classification of all Coal Reserves into Proved and Probable Coal Reserves reflects the current level of study and certainty in modifying factors.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Ore Reserve estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Xenith has not undertaken any external audits or reviews of the 2020 Lenton Coal Reserves reported by Lenton Joint Venture as there is no mining activities within Lenton MLs yet.</li> <li>• The current JORC Coal Reserves estimate as at 31<sup>st</sup> October 2023 within Lenton MLs is an update on the previous Coal Reserves estimate (dated 31st July 2021) prepared by Xenith due to "material changes" as mentioned below: <ul style="list-style-type: none"> <li>- Suttor Development Road diversion</li> </ul> </li> </ul>

Criteria	JORC Code Explanation	CP Comments
		<ul style="list-style-type: none"> <li>- Input operating costs derived from the existing contract rates at Broadmeadow East (BME), nearby open cut mine being operated by BCC</li> <li>- Changed assumptions on updated long term (LT) coal price forecasts and foreign exchange rates provided by BCC</li> </ul>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li>• Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</li> <li>• The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>• Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</li> <li>• It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>• The study basis for the conversion of Coal Resources to Coal Reserves is at commensurate with the Pre-Feasibility level, as the nearby Burton mine has been mined by open cut methods from 1996 to 2016 and the current open cut mining operations at BME and ES since May 2022. The confidence level in the reported Coal Reserve estimate is commensurate with the level of confidence in Modifying Factors that underpins it.</li> <li>• Coal price and exchange rate forecasting and cost assumptions represent a degree of risk and opportunity for the project.</li> <li>• Uncertainty and risk associated with other specific modifying factors for the conversion of Coal Resource to Coal Reserves are also discussed in other sections of this report above.</li> <li>• The statements above relate to global estimates, as the uncertainty in the modifying factors apply globally as well as locally.</li> </ul>



#### **BRISBANE**

Level 31  
10 Eagle Street  
(GPO Box 993)  
Brisbane QLD 4000  
Australia  
**P** +61 7 3835 3900

#### **HUNTER VALLEY**

Suite 2, Level 1  
129 John Street  
(PO Box 1169)  
Singleton NSW 2330  
Australia  
**P** +61 2 6572 2878

#### **SYDNEY**

Level 2, Suite 201  
189 Kent Street  
Sydney NSW 2000  
Australia  
**P** +61 498 280 435

**[www.xenith.com.au](http://www.xenith.com.au)**