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21 August 2019

ASX Announcement

Bounty Cook Updated Coal Resources and Maiden Coal Reserves Estimates

Highlights:

- Completed geological model review, geotechnical assessment and life of mine planning to support the transition of Cook Colliery to a bord-and-pillar place change operation
- Technical and financial assessments support Cook Colliery bord-and-pillar place change operation
- 210 million tonnes Coal Resource estimated for Cook Colliery and Cook North
- 8.6 million tonnes Coal Reserve estimated for Cook Colliery
- 7.3 million tonnes Marketable Coal Reserves estimated for Cook Colliery

Bounty Mining Limited (**Bounty**) (**ASX:B2Y**) subsidiary Bounty Cook Pty Limited (**Bounty Cook**) is pleased to announce its updated Coal Resource estimate and its maiden Coal Reserve estimate, in accordance with the JORC Code 2012.

The 2019 Coal Resource estimate has identified a total Coal Resource estimate of 210 million tonnes (Mt) for Cook Colliery and the adjoining Cook North project (Table 1, Figure 1). The resource estimate is comprised of:

- 15 Mt of Measured Resource;
- 155 Mt of Indicated Resource; and
- 40 Mt of Inferred Resource.

Table 1 Cook Colliery Coal Resource Estimate June 2019 – Summary of Cook and Cook North [1,2]

Seam	Area	Seam Thickness (m)	Measured Resource (Mt)	Indicated Resource (Mt)	Inferred Resource (Mt)	Total Resource (Mt)
Castor	Cook	2.7	-	10	-	10
Argo	Cook	4.6	15	36	-	50
Pollux	Cook	2.6	-	12	5	17
	Total Cook		15	58	5	75
Castor	Cook North	2.5	-	45	15	60
Argo	Cook North	4.8	-	8	-	8
Pollux	Cook North	2.7	-	44	20	64
	Cook North		-	100	35	135
Total	Cook + Cook North		15	155	40	210

[1] Some rounding to the nearest significant figure has occurred and this may reflect in minor differences in the overall reported resource.

[2] Cook Mine Coal Resource Estimate June 2019 – Competent Person Mr Troy Turner

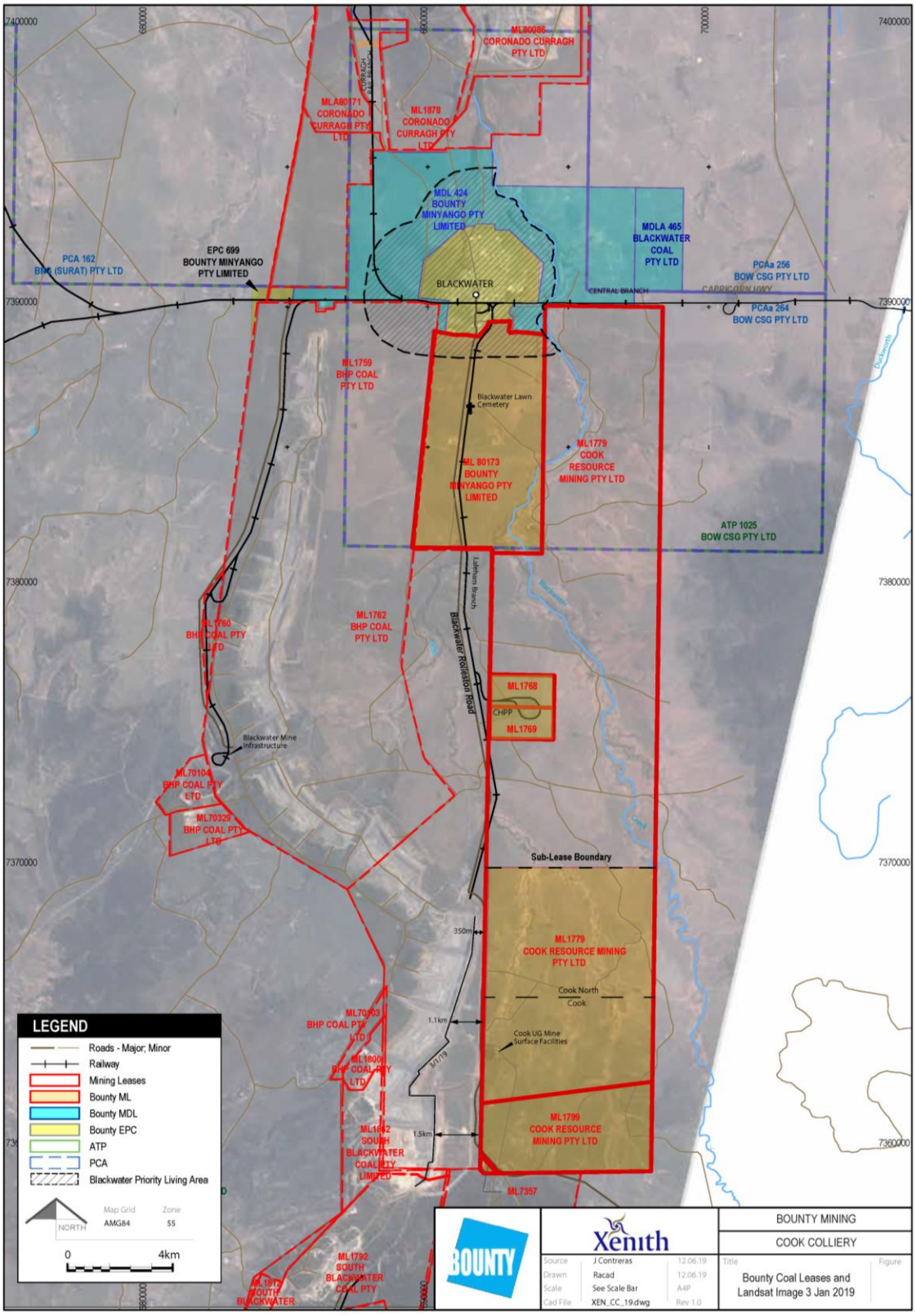

Figure 1 Bounty Cook – Cook Colliery and Cook North Locations

Bounty has subsequently completed reviews, technical assessments and life of mine planning to support the transition of Cook Colliery to a bord-and-pillar place change operation. The technical and financial assessments provided the necessary information to complete a Coal Reserve estimate. The Coal Reserve estimate is the first completed by Bounty Cook and the first for Cook Colliery in accordance with the

Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition).

The Coal Reserves and Marketable Coal Reserves are 8.6 Mt and 7.3 Mt respectively (Table 2). The Coal Reserves and Marketable Coal Reserves are limited to Cook Colliery Argo and Pollux seam operations only (i.e. Cook North does not contribute to the Coal Reserve or Marketable Coal Reserve estimate).

Bounty Chairman Rob Stewart said: "The Cook life of mine planning and financial assessment, and now Bounty Cook's maiden Coal Reserve estimate, support Bounty's place change mining strategy for Cook Colliery."

Table 2 Cook Colliery Coal Reserve Estimate June 2019 Summary [1,2,3]

	Coal Reserves (Mt) [4]			Marketable Coal Reserves (Mt) [5]		
Area	**Proved**	**Probable**	**Total**	**Proved**	**Probable**	**Total**
Cook	-	8.6	8.6	-	7.3	7.3

[1] Some rounding to the nearest significant figure has occurred and this may reflect in minor differences in the overall reported reserve.

[2] Cook Colliery JORC Reserves as at 30th June 2019 – Competent Person Mr Ben Smith

[3] Coal Reserves are a subset of Coal Resources

[4] Coal Reserves are estimated at 6% ROM moisture

[5] Marketable Coal Reserves are estimated at 10% thermal product moisture, 11% coking product moisture

Cook Coal Resources: Comparison against May 2018 Prospectus

The 2019 Coal Resource estimate is compared to the previous Coal Resource estimate (as provided in Bounty Mining Limited's May 2018 Prospectus) in Table 3.

Table 3 Cook Colliery Coal Resource Estimate June 2019 – Comparison with Previous Estimate [1,2,3]

Seam	**Resource Category**	**Resource 2019 (Mt) [2]**	**Resource 2016 (Mt) [3]**	**Difference (Mt)**
Aries	All	-	85.3	-85
Castor	Measured	-	13	-13
	Indicated	55	61.3	-6
	Inferred	15	59.7	-45
Argo	Measured	15	50.2	-35
	Indicated	45	9	+34
	Inferred	-	1.9	-2
Pollux	Measured	-	11.4	-11
	Indicated	55	65	-10
	Inferred	25	57	-32
Orion	All	-	46	-46
Total	All	210	460	-250

[1] Rounding of data may cause some apparent discrepancies in totals

[2] Cook Mine Coal Resource Estimate June 2019 – Competent Person Mr Troy Turner

[3] JORC Resources Report Cook Colliery Sublease ML 1799, ML 7357, ML 1779, ML 1768 and ML 1769 December 2016 – Competent Person Mr Phillip Bryant

The 250 Mt decrease in coal tonnage in the 2019 resource estimate when compared with the previous 2016 estimate is significant and attributable to:

- Removal of the Aries and Orion seams due to their limited thickness 1.0-1.6 m, which represent marginal thickness at depths for underground mining. This exclusion represents a decrease of approximately 130 Mt in coal resource. In the 2019 estimate, the thickness cut-off applied to coal resources is 1.5 m, which is considered appropriate for the selected underground mining method (bord and pillar) and equipment.
- Coal Resources are estimated to a maximum depth of 350 m. This cut-off factor results in a decrease of approximately 110 Mt of the coal resource estimated in 2016 when combining the Castor and Pollux seams in the northeast Cook North and east of the Tannyfoil Fault Zone.
- Removal of the Castor seam resource in the southernmost area of ML 1799 where mining operations are currently considered unviable. Previous mine workings of the Castor seam in this area disturbed the geotechnical seam conditions, making further underground access highly unlikely.

Cook Coal Resources and Reserves Estimates: Information Contained in Reports

Refer Appendix A for section 1 (sampling technique and data), section 2 (reporting of exploration results), and section 3 (estimation and reporting of coal resources) Table 1 information. Refer Appendix B for section 4 (estimation and reporting of coal reserves) Table 1 information. Table 4 contains a summary of the information material to understanding the reported Coal Resources and Coal Reserves estimates.

Table 4 Summary of Cook Colliery Coal Resources and Reserves Estimates Material Information [1,2]

Item	Criteria	Commentary
1	Study status	• Cook Colliery has been an operating mine since the 1970's. Various studies have been conducted over many years on specific topics to at least Pre-Feasibility level of detail. • The Cook Resource Mining tenure consists of five Mining Leases (ML). Coal Resources have been estimated in the areas denominated "Cook" and "Cook North" which cover ML7357, ML1799 and the southern portion of ML1779 to the sub-lease boundary at the northing line 7,370,000 mN.
2	Geology and Geological Interpretation	• The structural framework of the deposit can be defined as a faulted monoclinal limb gently dipping to the south and southeast. Three types of faults have been interpreted: reverse faults, normal faults, and oblique faults. • The boundary between Cook and Cook North is marked by the Kennedy Fault Zone within ML1779. • The Rangal Coal Measures contain five main seams (in stratigraphic order from shallowest to deepest): Aries, Castor, Pollux (Argo), Orion and Pisces seams. The main target for underground mining is the Argo seam (4.7 m thick), which is currently being mined. • The exploration dataset for the deposit includes Airborne Lidar topography, drill hole geological logs, downhole geophysical logs, 2D and 3D seismic data, samples test results of coal quality, gas content, geotechnical data, geological features encountered during mining operations, as well as technical reports and interpretations of results completed by specialised independent consultants. • The drilling dataset includes historic holes (1970-2004) and recent holes (2005-2016). • The entire dataset of recent drill holes was validated during 2018 by Xenith, whilst a representative

Item	Criteria	Commentary
		number of historic boreholes were selected for review. • The borehole density (cored and open holes) in the Resource area allows a good level of confidence on the nature of seam thickness, seam splitting, coal quality and location of faults. • 2D and 3D seismic surveys add further confidence to the nature of seam depths and the occurrence of faulting. While the completed 3D program was focussed on Cook North (outside the area of this Reserve estimate), the knowledge gained proves useful insight and confirmation of conditions experienced at Cook. • The geological model used to estimate coal volumes and resources was built by Xenith in 2018 using the GEOVIA Minex software 6.4.2 with a mesh size 25 x 25 m. The dataset includes drill hole data and faults interpreted from drill holes, seismic data and mining operations. • Coal quality modelling is based on sample test results of 240 core samples from 86 boreholes. All seam structure and coal quality model grids were reviewed and validated by comparing grids and contours against borehole data values. Borehole data statistics were compared against model grid statistics and visual checks on coloured grids were also used to investigate trends and anomalies.
3	Sampling and Sub-sampling Techniques	• Coal samples were taken according to seam boundaries observed in the core. Sample lengths were compared against seam thickness in wireline geophysical logs to estimate core recovery. • The raw coal samples were taken on ply basis, placed separately into plastic bags with unique sample ID numbers. • Only seams sections with samples with more than 90% recovery have been used in this resource estimate.
4	Drilling Techniques	• Historic drilling: Majority of holes were open percussion holes, and cored holes HQ diameter (61mm) triple tube. • Recent drilling: Open holes were drilled by rotary percussion at 99mm and 120mm diameter. Partial cored holes drilled at HQ diameter (61mm) triple tube.
5	Sample Analysis Methods	• Raw coal samples were tested for Relative Density, Proximate Analysis (raw ash, inherent moisture, volatile matter, and fixed carbon content), Total Sulphur content, Specific Energy and Crucible Swelling Index (CSN). • Based on raw coal results, samples were composited on seam basis and subject to Float/Sink test and Coking Coal properties tests: proximate analysis, total sulphur, phosphorus, CSN, ash analysis, Giesler Fluidity and Dilatation. Certain samples were also tested for ultimate analysis, trace elements, forms of sulphur, maceral analysis, vitrinite reflectance, CSR (Coke Strength after Reaction) and CRI (Coke Reactivity Index). • Coal samples were analysed in CCI Laboratory (later Bureau Veritas) in Gladstone, QLD. This lab. complies with Australian Standards for all coal quality tests and is certified by the National Association of Testing Authorities, Australia (NATA).
6	Resources Estimation Methodology	• QA/QC of the structural model. The model was built using 1,246 Points of Observation (PoO). • Select the valid PoO for Coal Quality. A total of 42 Cored holes were classified as PoO for Coal Quality (in Cook and Cook North); 26 PoO are located in the Coal Reserves area (Cook). • Boreholes classified as PoO for a particular seam contain the following data: lithological log and downhole geophysical logs (with a minimum suite of caliper, density and gamma) for structure PoO, in addition to laboratory test reports with data of relative density (RD), proximate raw coal quality, and a seam core recovery of minimum 90% for coal quality PoO.

Item	Criteria	Commentary
		• In addition to the PoO, infill drill hole data (cored and open holes), seismic data and geological knowledge gained from mining operations were used to support confidence in geological interpretation, seam structure and coal quality continuity. • Coal resource tonnage was estimated using seam coal volumes and coal density data. • Coal Resources have been estimated for the Argo Seam. The Pollux seam and remnant areas of the Castor seam are also considered resources.
7	Criteria used in the Resource Estimate and Resource Classification	• Integration of geological knowledge, data analysis, drill hole spacing, domaining, geological model and supporting geological data to define the resource area and level of confidence in seam structure and coal quality continuity between PoO. • The resource polygons are constrained by the following parameters: Tenure boundary, minimum coal seam thickness 1.5 m, maximum depth 350 m, extrapolation distance of a maximum 1,500 m from last PoO. The average raw ash varies from 10 % to 13 % with maximum values of 40 % in localised areas, thus there was no need to apply raw ash cut-off to the coal resource. • Coal Resources have been classified in the Measured category in areas where distance between PoO does not exceed 600 m and drill hole spacing does not exceed 300 m. The level of confidence in seam structure is also supported by 2D seismic data. • Resources in the Indicated category cover the areas where distance between PoO does not exceed 1,000 m and drilling spacing is between 300-600 m. • Resources in the Inferred category cover the area where drill hole spacing exceed 1,000 m and up to a maximum extrapolation distance of 1,500 m from the last PoO.
8	Parties participating in the Resource and Reserve Estimate	• The following parties have provided input into the various components of the Life of Mine Plan: • Xenith provided input to the preparation of the Life of Mine Plan, in conjunction with site personnel. • Xenith had provided the resource estimation work resulting in the Resource Estimate for Cook (June 2019). • Xenith were engaged as an independent consultant by Bounty to review technical and operational information and prepare a Reserve Estimate. • Xenith engaged MResources as an independent consultant to provide technical expertise. MResources provided product coal analysis and an assessment of expected yield and the effects of dilution on yield. • Bounty site personnel provided Xenith data to build production plans and economic models. • The mine engaged the services of MineAdvice Pty Ltd to conduct various geotechnical assessments and planning activities. The scope was focussed on the progression from in-place mining to place-change mining methods of operating. Specifically, the MineAdvice report assessed the technical and safety aspects from a geotechnical perspective and assessed the proposed Life of Mine layout against these parameters. • RPM Global Ltd were engaged to provide mine scheduling assistance with their Underground Scheduler package. • Other consultants and relevant experts were engaged by the mine and Bounty prior to the preparation of the Reserve Estimate and development of the Life of Mine Plan. Many of these are conducted as part of the normal operation of an underground coal mine. • On-site personnel in various disciplines were also actively engaged in developing the Life of Mine Plan. These included specialists from safety, production, engineering, mine planning, surveying, operations and ventilation.

Item	Criteria	Commentary
		• During site visits, a range of operational and technical personnel were involved. At these site visits were representatives of Xenith and Bounty. Consultants who had contributed to other study areas are already familiar with the operation and had visited the mine recently. • Underground areas inspected during June 2019 included the access drift, outbye main headings, stone driveage associated with mains headings, pit bottom, inbye panel conditions and general underground conditions in 205 panel. The area where mains panel 500 is planned to commence was also visited and reviewed. Sections where floor coal has been stripped were observed.
9	Mineral Resource Estimate used for estimation of Coal Reserves	• The Resource Estimate was completed in June 2019, and was prepared by the Competent Person in accordance with the JORC Code 2012 Edition and the "Australian Guidelines for the Estimation and Classification of Coal Resources" (2014).
10	Reserves Estimation Methodology	• The Coal Reserves are included within, and not additional to, the Coal Resources. • The estimated Coal Reserves and Marketable Coal Reserves are based upon the Life of Mine (LOM) Plan which is technically achievable and economically viable. Material modifying factors have been considered in the conversion of Resources to Reserves. • Coal Reserves have been estimated in the Argo seam and its upper split (Pollux Seam). • To account for the implementation of a mining method that is new to site, and the relative paucity of washability data, particularly in the Southern Domain, all Resources that are eligible to be converted to Reserves, have been converted to Probable Reserves. • The mine layout was imported into RPM Global's Underground Coal Scheduler (UGCS) software. • Geological grids were imported, as was the proposed mine plan. • The software, along with assumptions and values outlined in this summary, were used to generate the Reserve Estimate. • The software was then used to produce a mine production schedule, and in turn generating production output reports for economic evaluation.
• 11	Metallurgical factors or assumptions used in the Reserve Estimate	• Two products are produced from the mine- o Semi-hard primary coal product o Thermal secondary product • Further drilling is required to provide additional data, particularly in the Southern Domain of the mining lease area. A paucity of coal washability data exists in the Southern Domain. As such, the expected coking product yield values were reduced by 5% in the Southern Domain. • Yield values in the Life of Mine Plan have been determined through analysis by MResources (2019). Such assessment was reinforced by a review of actual train and shipments results. • All product yields account for losses and out-of-seam dilution. • The technology is well tested, being routinely applied to coal processing, and having operated at Cook Colliery for many years. • Yield for each product is estimated on the basis of laboratory tests of exploration samples, and modelling. A range of coal qualities have been modelled including volatile matter, sulphur, phosphorus, CSN, CSR, fluidity and specific energy. • In the Northern Domain, Coking Product Yield is estimated at 68 %, Thermal Product Yield is estimated at 17 % with a total yield of 85 %. • In the Southern Domain, Coking Product Yield is estimated at 63 %, Thermal Product Yield is estimated at 22 % with a total yield of 85 %. • None of the trace elements analysed are considered to be present to the extent that they

Item	Criteria	Commentary
		have a material impact upon the marketability of the coal. • The CHPP is an operational plant. Plant performance is measured and reconciled against forecast. • The modelled qualities are appropriate to assigning forecast products to likely markets.
12	Environmental	• The Cook mine is in a brownfield, currently operating mine site for the purposes of continued mine development. • Environmental studies are undertaken on an ongoing basis in line with regulatory and approvals conditions requirements. • Statutory approvals and permitting will need to be undertaken on an as-needs basis, with routine compliance and auditory works conducted. • Bounty currently sub-lease the southern portion of the Cook Tenement area, the northern limit defined by the northing line 7,370,000 mN, from Glencore. These sub-lease areas are ML1779 and ML1799. • At the time of preparation of the Life of Mine Plan, the finals stages of transferring that sub-lease arrangement were being processed.
13	Infrastructure	• The Cook mine is located 30km south of the Township of Blackwater, 220km west of Rockhampton and 100km to the east of Emerald. • The project is serviced by Emerald Airport (sealed) to the West, and Rockhampton Airport to the East. • Infrastructure on the current lease is concentrated on two main sites – the main mine Infrastructure Area (MIA) and the Coal Handling and Preparation Plant (CHPP). • The MIA includes: – Mine administration buildings and offices – Bathhouse – Lamp cabin – Operations rooms – Control room, first aid room and other ancillary rooms and offices – Workshops – Stores – Laydown areas – Machine loading and unloading areas – Mines Rescue Substation – Raw coal handling plant – Raw coal stockpile and truck loading area – Mine portal entry – Drift conveyor – Drift dolly car for personnel, supplies and equipment transport • Proximate to the main MIA is the main upcast fan site and prior drop holes location for services. • Located approximately 14km to the north is the Cook CHPP. • The CHPP includes: – Raw coal unloading area, stockpile facility and associated conveyors – Coal Preparation building – Product stockpiles and associated conveyors – Coarse reject management conveyors and disposal areas – Tailings dams and associated water management dams and pipe networks – Train Load Out (TLO) facility and associated rail track and equipment • Between the MIA and CHPP is a sealed private haul road for the haulage of ROM Coal. • Accommodation is provided in Blackwater either at one of several accommodation camps, or in private residences and motels. • Water is provided to site from a buried pipeline from the Bedford Weir, to the immediate West of Blackwater township. • Mains electrical power is provided to site by overhead areal conductors and towers.

Item	Criteria	Commentary
14	Capital and Operating costs	• Life of Mine plan operating costs were calibrated by Xenith to the two-year budget plan that Bounty recently completed. • The Bounty financial team then completed the Life of Mine costs which were reviewed by the Competent person as part of the Economic Viability test for the JORC Reserves. • Capital and operating cost estimates have been derived from actual operating and planned 10-year capital expenditure costs at the mine. • Operating costs modelled at greater than ±25% level of accuracy. • Processing costs have been estimated based on actual operating costs at the Cook Coal Handling and Preparation Plant (CHPP). • Exchange rates are an assumed USD:AUD of 0.70. • Foreign exchange can fluctuate over time and may costs can be impacted by movements in exchange rates. • Haulage costs from the ROM to the CHPP have been accounted for within the confines of the Life of Mine Plan. • Labour costs are estimated from actual operating costs at the mine, and from recent working examples of mines employing a similar operating methodology.
15	Revenue factors	• Benchmark coal prices are based on the Wood Mackenzie July 2019 forecast, and reflect their perception of expected supply and demand balance. • Pricing is based on the PLVCC Coal (QLD) Benchmark pricing and the Newcastle 6000 kcal/kg NAR for Thermal product. • Pricing has then been factored relative to these benchmarks to account for the relative quality of Cook Coking and Thermal products.
16	Market assessment of coal price	• The coal market is influenced by a wide range of factors influencing supply and demand. The Cook product is established in the market place. • No significant change in product quality and marketability is anticipated. Sensitivity to potential changes has been tested. • Tonnage forecast is based on the LOM schedule.
17	Economic evaluation	• Testing of the economic viability of the reserves is based upon actual operating costs, forecast production, forecast capital expenditure and coal pricing. The details of some of the inputs are commercially sensitive and are not disclosed. • NPV has been tested against variations in significant drivers – the reserves remain economically viable under all scenarios. • On this basis, the tonnes scheduled in the mine plan from year 1 to year 6 are financially viable and can be declared as a JORC reserve. Tonnes scheduled in year 7 to year 9 are marginal and have not been declared a JORC reserve at this time.
18	Social	• Cook is an established mining operation and is committed to sustaining a positive contribution to the local and regional communities through employment opportunities and supply purchases. • Taxation and royalty payments contribute to the state and national economies. • Cook maintain positive relationships with local landowners, community members, and traditional owners.
19	Other	• The project area is located immediately adjacent to the BMA Blackwater Open Cut Coal Mine. • Cook is approximately 90 km to the North-West of the mine is Ensham Colliery, also a Bord and Pillar continuous miner operation and is owned by Idemitsu Resources. • Beyond the normal mining, processing, and business risk, no additional material risks have been identified. Sensitivity to variation in market placement has been tested, and the reserves remain economically viable.

Item	Criteria	Commentary
		• All necessary titles and agreements are in place. • There are no grounds to expect that the necessary titles and agreements will not be renewed as required.
20	Classification of Ore Reserves	• Mining blocks within the Measured Resource have been converted to Probable Reserves. • Mining blocks within the Indicated Resource have been converted to Probable Reserves. • The Competent Person is satisfied that the Coal Reserves reflect the outcome of technical and economic evaluation of the deposit. • The Coal Reserves consist of Probable Reserves. • The estimated Coal Reserves are: – Proved: 0 Mt – Probable: 8.6 Mt – Total: 8.6 Mt • The estimated Marketable Coal Reserves are: – Proved: 0 Mt – Probable: 7.3 Mt – Total: 7.3 Mt
21	Ore Reserve Audits or reviews	• No formalised audit has been conducted of the Reserve Estimate. • In preparation of the Reserve Estimate, reviews were conducted by mine site and Bounty personnel with no material deficiencies noted. • The reserves model has been compared to the LOM model with good agreement. • Independently, a reserve calculation was conducted within a spreadsheet model and associated production schedule developed, with acceptable agreement.
22	Discussion of relative accuracy/confidence	• The Cook mine is an operating coal mine of approximately 50 years duration. Significant operating history and experience has been gained during this time. • As the mine is currently operating, many of the parameters included in the Life of Mine Plan are based on actual performance metrics, and as such would be reasonably determined that their preparation is consistent with expected outcomes. • The proposed Life of Mine Plan includes the transition away from 'in-place' continuous miner development production to 'place-change' continuous miner methods. A comprehensive plan for the staged modification of equipment and implementation of the proposed mining method has been developed. This includes a risk assessment covering the expected technical and operational differences from current to planned mining methods. • Product coal recoveries have been based on test work data and reviews of actual shipments, along with a discount applied for out-of-seam dilution and the relative paucity of washability data in the Southern Domain. • Costs have been estimated by actual mine performance and are supported by experience at similar operations. • External consultants have been engaged over many years to provide technical, operational and engineering advice to the mine. • Further external consults were engaged in the development and review of the proposed Life of Mine Plan. • Cost estimate accuracy for the Life of Mine Plan is considered to be in the order of ±25% and is commensurate with the level of estimate accuracy expected of a Pre-Feasibility Study. • The reserves have been estimated using tools and processes that have been widely tested in the Australian coal mining industry.

[1] Cook Mine Coal Resource Estimate June 2019 – Competent Person Mr Troy Turner

[2] Cook Colliery JORC Reserves as at 30th June 2019 – Competent Person Mr Ben Smith

Further information:

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Information in this report that relates to Coal Resources and Coal Reserves is based on and accurately reflects reports prepared by the Competent Person named beside the respective information. Mr Troy Turner is a member of the Australasian Institute of Mining and Metallurgy and is a full-time employee of Xenith Consulting Pty Ltd. Mr Ben Smith is an independent mining professional, and an associate of Xenith Consulting Pty Ltd.

Named Competent Persons consent to the inclusion of material in the form and context in which it appears. All Competent Persons named are Members of the Australasian Institute of Mining and Metallurgy and have the relevant experience in relation to the mineralisation being reported on by them to qualify as Competent Persons as defined in the Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition).

APPENDIX A

JORC Code 2012 Edition – Table 1 – Sections 1, 2 and 3 – Cook Colliery Coal Resources Estimate

The following tables provide a summary of important assessment and reporting criteria used at Cook Colliery for the reporting of Coal Resources in accordance with Sections 1, 2 and 3 of the Table 1 checklist in The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition).

Table A.1 – Table 1 – Section 1 – Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling Techniques	• Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling. • Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report. • In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.	• Approximately 1,600 boreholes have been drilled over the Cook mining leases (ML 1799, ML 7357, ML 1779, ML 1768 and ML 1769). Approximately 1,400 holes have been drilled over the current mining operations in the southern part of Cook. • Primary target of mining has historically been 2.0 m - 2.5 m thick Castor seam and 3.0 m – 5.0 m thick Argo seam. **Historic exploration** • There have been many phases of exploration undertaken at CC with a majority of holes drilled being structural (chip) holes. Coal quality data from the original 1970's and 1980's drilling has been misplaced over time however there is electronic data with coal quality available. • On 19th December 2017 two employees from Xenith Consulting conducted an audit of historical exploration data held in a storage container at CC against supplied electronic data. Coal seam intercepts were matched to raw lithology logs and reviewed against geophysical wireline hard copy. The Xenith team was satisfied with the accuracy and completeness of the historical hardcopy data and the digital version of that data. **Recent exploration** • 2005 –Xstrata Coal –19 holes drilled in sub-lease ML 1779 –Coal Quality analysis for Aries, Castor, Pollux and Orion seams –Partly cored holes drilled at 61mm diameter (HQ) –Holes geophysically logged –Reliable data • 2007/2008 –39 partly cored boreholes (61mm HQ) –Coal quality samples taken for Aries, Castor (Argo), Pollux and Orion seams. –Total of 7,692m of drilling conducted with 6,232m of open (chip) drilling and 1,460m of 61mm HQ coring. –Two open chip boreholes were drilled for electrical cabling purposes.

Criteria	JORC Code Explanation	Commentary
		– All holes except the two open boreholes were geophysically logged and thus provide reliable data. – All drilling and geological activities were conducted using industry best practices. Geologists undertook training conducted by the author of the associated 2016 CC resource report and involved training in core recovery, geological logging of chips and core, sampling procedures, core photography, geophysical log interpretation and correction. – Procedures were conducted in accordance with industry best practice to ensure the high quality of reliable data required for JORC Code estimations. – Coal seams were logged immediately in the field inside the core barrel splits to minimize disturbance to the core. Accurate core recovery was recorded and a geological log with sample intervals was taken. Core photography at 50cm depths was taken. The core was wrapped in plastic to preserve the moisture of the coal. Core was placed in steel core trays and placed in a freezer to preserve moisture and coking properties. – Wireline logging included natural gamma, density, resistivity, caliper, verticality and sonic logs. – Once the geological logs were reconciled against geophysics the coal core was sampled into plies and sealed in plastic bags and given a unique sample ID number. – Samples were delivered to CCI Coal Laboratory in Gladstone Queensland for proximate analysis, sulphur content, specific energy, relative density, crucible swelling index (CSI) and Washability. – Chip intervals were recorded at the rig in 1m intervals and collected into chip containers. – 2007/2008 drilling campaign was conducted by Depco Drilling using a UDR 650 and UDR 1200 multipurpose drill rigs. Cores were recovered using HQ triple tube core barrels (61mm). • 2009 – 3 open chip holes (CKDDHS034, CKDDHS035 & CKDDHS036) were drilled in western area of current South Mains development roadways – Purpose was fault delineation. – CKDDHS034 and CKDDHS036 were geophysically logged. – Good quality data.

Criteria	JORC Code Explanation	Commentary
		– 676m total drilled. • 2010 – Two partly cored holes completed (CKDDHS038 & CKDDHS039). – Holes drilled for coal quality (coke properties) and gas content analyses. – Core diameter 61mm HQ. – Holes were geophysically logged. – Considered reliable data. • 2015/2016 – 12 partially cored holes drilled as a follow up to 3D seismic survey (16km²) over northern portion of the project. – Holes drilled for coal quality (coke properties) and geotechnical properties of the target seams. – Holes were geophysically logged. – Reliable data
Drilling Techniques	• Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).	**Historic drilling** • Majority of holes were open percussion holes. • Core holes HQ diameter triple tube (61mm). **Recent drilling** • Partial core holes drilled at a diameter of 61mm (HQ triple tube). • Open chip holes drilled by rotary percussion at 99-120mm diameter. Where holes were geophysically logged with verticality, the downhole survey data was checked to understand the hole deviation and detect any major discrepancy from actual seam depths or seam thickness that may have a significant impact on the resource estimate. No borehole was extremely deviated.
Drill Sample Recovery	• Method of recording and assessing core and chip sample recoveries and results assessed. • Measures taken to maximise sample recovery and ensure representative nature of the samples. • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	• Core sample recovery utilized HQ triple tube – 61mm core diameters. • Core was carefully cut and pulled by experienced coal drillers. Coal core was logged on site by experienced geologists and was measured and logged in drilling splits to minimize handling errors. • Core recovery was carefully recorded at the rig. • Coal core was wrapped in plastic to maintain moisture content and stored in a refrigerated container. • Once geological logs were reconciled against geophysics coal plies were sampled and the coal samples placed into plastic bags with unique sample ID numbers. • Coal samples were subsequently sent to CCI Laboratory (later Bureau Veritas) in Gladstone, QLD.

Criteria	JORC Code Explanation	Commentary
Logging	• Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies. • Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography. • The total length and percentage of the relevant intersections logged.	• Geological logging was carried out in the field by trained and qualified geologists. • Exploration field procedures since the 2005 have followed industry best practices. • All cores were geologically logged; geological/geotechnical features identified were reported. • All chipped holes were geologically logged. • All holes were geophysically logged with a minimum density, caliper and gamma. Some holes were also logged with verticality, resistivity, sonic and ATV. • All core since 2007 was photographed at 0.5m intervals once logging was complete. Most of the holes drilled between 1989 and 2005 were also photographed, but part of this information has been lost over time. There is no evidence of photographs of historic cored holes drilled before 1989. • Coal core samples collected after 2005 were placed inside plastic wrap and inside steel core boxes and placed in cold storage to preserve total moisture. There is no actual information of sample storage practices in samples collected before 2005.
Sub-Sampling Techniques and Sample Preparation	• If core, whether cut or sawn and whether quarter, half or all core taken. • If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. • For all sample types, the nature, quality and appropriateness of the sample preparation technique. • Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. • Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance results for field duplicate/second-half sampling. • Whether sample sizes are appropriate to the grain size of the material being sampled.	• The lab CCI Holdings Limited (Bureau Veritas) complies with Australian Standards for sample preparation and sub sampling. • Coal samples were taken according to geophysical logs and sampled into plies. • Based on the information available from boreholes drilled since 2005, sample lengths were recorded, recovery factors were checked using the wireline logs and considered reliable for resource reporting. • No evidence from data sources as to existence of sample duplicates. • Coal quality sampling procedures have established that core recovery of 90% or more is required. Only samples with more than 90% recovery have been used as Pool in this resource estimate.
Quality of Assay Data and Laboratory Tests	• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. • For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. • Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks)	• The coal quality laboratory CCI Holdings Limited (Bureau Veritas) complies with Australian Standards for all coal quality tests and is certified by the National Association of Testing Authorities, Australia (NATA). • Geophysical tools were calibrated by the logging companies engaged in the project during operations. • The companies providing bore hole logging on the Cook Mine area are as follows: – 1998: Geoscience Associates Australia – 2005: RG Geologging Australia – 2007: Auslog Services

Criteria	JORC Code Explanation	Commentary
	and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	– 2007-2010: Logging Down Under – 2015-2016: Logging Down Under
Verification of Sampling and Assaying	• The verification of significant intersections by either independent or alternative company personnel. • The use of twinned holes. • Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. • Discuss any adjustment to assay data.	• Bureau Veritas Laboratory in Gladstone complies with the Australian Standards for coal quality testing, and as such conduct the verifications for coal quality analysis outlined in the standards. • No adjustments have been made to the historic lab analysis sheets provided by the client.
Location of Data Points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. • Specification of the grid system used. • Quality and adequacy of topographic control.	• Boreholes surveyed to sub-meter accuracy beacon corrected DGPS. • Geographic projection in use is Australian Map Grid 1984 zone 55 (AMG84 z55) • Airborne LiDAR data and aerial imagery were acquired over Cook on Thursday 20th April 2017. AAM Group provided the following LiDAR products: – 0.1m thinned ground in ASCII XYZ format – All ground points in ASCII XYZ format – 0.25m contour files in DXF format • The data is provided in MGA zone 55 GDA94, and subsequently converted to AGD84 for use in Cook modelling and mine planning. The LiDAR data was acquired to achieve an accuracy of 0.1 m in height (RMS) for points on clear ground. • The topographic surface used in the model was created in GEOVIA Minex software using the Lidar topography data. • Survey borehole collars with < 1 m mismatch with Lidar topography were used in the geological model and resource estimate.
Data Spacing and Distribution	• Data spacing for reporting of Exploration Results. • Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied. • Whether sample compositing has been applied.	• 2016 Cook Colliery Resource Statement is based on the following observations: – Measured Coal Resources based on boreholes spaced at maximum of 600 m and which have reliable data for seam thickness and coal quality. – Indicated Coal Resources based on boreholes spaced at 1,000 m and which have reliable data for seam thickness and coal quality. – Inferred Coal Resources based on boreholes spaced at 1,500 m and which have reliable data for seam thickness and coal quality. • The definition of reliable data normally refers to borehole data that has downhole geophysics to confirm seam thickness as well as coal quality data from the analysis of the bore core. • There is no evidence that geostatistical studies have been undertaken to establish

Criteria	JORC Code Explanation	Commentary
		optimum borehole spacings throughout the Cook Mine.
Orientation of Data in Relation to Geological Structure	• Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type. • If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	• All holes have been considered vertical (dip -90) in the geological model. • Where holes were geophysically logged with verticality, the downhole survey data was checked to understand the hole deviation and detect any major discrepancy from actual seam depths or seam thickness that may have a significant impact on the resource estimate. No borehole was extremely deviated. • The orientation and spacing of the drilling pattern are variable across the Cook Mine area, which largely depend on the geological structures and priority mining areas. Drilling spacing and coverage are deemed to be suitable to detect geological structures and coal seam continuity within the resource area.
Sample Security	• The measures taken to ensure sample security.	• Sample security and transport was carried out by the various Cook Mine owners. • Post-2005 chain of custody was provided by Caledon Coal (previous Cook Mine owner). All samples were held in cold storage prior to leaving site and at laboratory prior to analysis.
Audits or Reviews	• The results of any audits or reviews of sampling techniques and data.	• Cook Mine and its various owners (and/or) contractors have been responsible for implementing the sampling techniques and data collection throughout the history of the Cook Mine.

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

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td>Mineral Tenement and Land Tenure Status</td><td>• Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.
• The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</td><td>• The Cook Mine area is located approximately 30 km south of the township of Blackwater located in Central Queensland, approximately 200 km west of Rockhampton and 300 km by high capacity rail from the export port of Gladstone.
• Cook Mine is bounded to the west by the BMA Blackwater mining leases, and to the east by the Backdown Tableland National Park. The north boundary is defined by the adjoining Glencore - Cook Resources Mining Pty Ltd (CRM) ML tenement (southern portion of ML 1779 up to latitude 7370000N) whereas to the south the Cook Mine area is bounded by the ML 1799 limit.
• Cook Resource Mining Ltd currently hold further tenements that Exploration Permits to the east and north (EPC1797 and EPC997) and the Minyango Project ML 80173 to the northwest of the resource area.
• The road access to Cook site is provided by a network of formed secondary and local roads, with the Blackwater-Rolleston Road aligned north-south at the western side of the mining lease. Within the Cook Mine area, road access is provided by a limited network of farm tracks.
<table>
<tr><th>Tenure Type</th><th>Tenure No.</th><th>Lodge Date</th><th>Granted Date</th><th>Date Expires</th><th>Area (ha)</th><th>Holder</th></tr>
<tr><td>ML</td><td>7357</td><td>21/11/90</td><td>6/06/91</td><td>30/04/2021</td><td>5.8</td><td>Cook Resource Mining Pty Ltd</td></tr>
<tr><td>ML</td><td>1779</td><td>12/12/73</td><td>5/04/79</td><td>30/04/2021</td><td>4,850*</td><td>Cook Resource Mining Pty Ltd</td></tr>
<tr><td>ML</td><td>1799</td><td>14/04/75</td><td>5/04/79</td><td>30/04/2021</td><td>1,730</td><td>Cook Resource Mining Pty Ltd</td></tr>
<tr><td>ML</td><td>1768</td><td>07/03/69</td><td>25/09/75</td><td>30/09/2028</td><td>259</td><td>Cook Resource Mining Pty Ltd</td></tr>
<tr><td>ML</td><td>1769</td><td>07/03/69</td><td>25/09/75</td><td>30/09/2028</td><td>258</td><td>Cook Resource Mining Pty Ltd</td></tr>
</table>
</td></tr>
<tr><td>Exploration Done by Other Parties</td><td>• Acknowledgment and appraisal of exploration by other parties.</td><td>Historic exploration
• There have been many phases of exploration undertaken at Cook with most holes drilled being structural (chip) holes. Coal quality data from the original 1970’s and 1980’s drilling has been misplaced over time however there is electronic data with coal quality available.
• On 19th December 2017 two employees from Xenith Consulting conducted an audit of historical exploration data held in a storage container at CC against supplied electronic data. Coal seam intercepts were matched to raw lithology logs and reviewed against geophysical wireline hard copy. The Xenith team was satisfied with the accuracy</td></tr>
</table>

Criteria	JORC Code Explanation	Commentary
		and completeness of the historical hardcopy data and the digital version of that data. **Recent exploration** • 2005 –Xstrata Coal –19 holes drilled in sub-lease ML 1779 –Reliable data • 2007/2008 –35 partly cored boreholes (61mm HQ) –Coal quality samples taken for Aries, Castor (Argo), Pollux and Orion seams. –Total of 7,692m of drilling conducted with 6,232m of open (chip) drilling and 1,460m of 61mm HQ coring. –Two open chip boreholes were drilled for electrical cabling purposes. –All holes except the two open boreholes were geophysically logged and thus provide reliable data. –All drilling and geological activities were conducted using industry best practices. Geologists undertook training conducted by the author of the associated 2016 CC resource report and involved training in core recovery, geological logging of chips and core, sampling procedures, core photography, geophysical log interpretation and correction. –Procedures were conducted in accordance with industry best practice to ensure the high quality of reliable data required for JORC Code estimations. –Coal seams were logged immediately in the field inside the core barrel splits to minimize disturbance to the core. Accurate core recovery was recorded and a geological log with sample intervals was taken. Core photography at 50cm depths was taken. The core was wrapped in plastic to preserve the moisture of the coal. Core was placed in steel core trays and placed in a freezer to preserve moisture and coking properties. –Wireline logging included natural gamma, density, resistivity, caliper, verticality and sonic logs. –Once the geological logs were reconciled against geophysics the coal core was sampled into plies and sealed in plastic bags and given a unique sample ID number. –Samples were delivered to CCI Coal Laboratory in Gladstone Queensland for proximate analysis, sulphur content, specific energy, relative density, crucible swelling index (CSI) and Washability. –Chip intervals were recorded at the rig in 1m intervals and collected into chip containers. –2007/2008 drilling campaign was conducted by Depco Drilling using a UDR 650 and UDR 1200 multipurpose drill rigs. Cores were recovered using HQ triple tube core barrels (61mm). • 2009 –3 open chip holes (CKDDHS034, CKDDHS035 & CKDDHS036) were drilled in western area of current South Mains development roadways –Purpose was fault delineation. –CKDDHS034 and CKDDHS036 were geophysically logged. –Good quality data. –676m total drilled.

Criteria	JORC Code Explanation	Commentary
		• 2010 −Two partly cored holes completed (CKDDHS038 & CKDDHS039). −Holes drilled for coal quality (coke properties) and gas content analyses. −Core diameter 61mm HQ. −Holes were geophysically logged. −Considered reliable data. • 2015/2016 −12 partially cored holes drilled as a follow up to 3D seismic survey (16km²) over northern portion of the Cook Mine. −Holes drilled for coal quality (coke properties) and geotechnical properties of the target seams. −Holes were geophysically logged.
Geology	• Deposit type, geological setting and style of mineralisation.	**Regional Geology** • Cook Mine is in the southern part of the Bowen Basin, and lies on the eastern limb of the Comet Anticline. The strata dips gently, usually <5 degrees to the east, striking slightly east of north. • The upper part of the stratigraphy consists of the Rewan Fm., which is predominantly a grey/green claystone varying in thickness from 80 m to 200 m. The coal bearing Rangal Coal Measures unconformably underlie the Rewan Formation. The upper section of the Rangal Coal Measures consists of four seams interbedded with lithic sandstone, siltstone and carbonaceous claystone strata. **Deposit Geology** • The depths of the Aries seam (top coal) vary from 110-130 m in the western area to 220-230 m in the eastern area. The thickness of the Aries seam is generally between 1-1.5 m. The Aries Lower Seam (ARL) is not continuous and shows an average thickness of 0.6 m. Where present, it occurs from 1 m to 4 m below the Aries Seam (AR). • The Castor seam is between 10 m and 20 m below the Aries Seam. The Castor average thickness is 2.5-3 m but can locally decrease to 0.5 m or increase to 4 m due to faulting. • Approximately 15 m below the Castor seam is the Argo Rider (AGR). This coaly mudstone band, which generally occurs at the top of the Argo seam, is not continuous and shows an average thickness of 0.5 m. • The Argo seam is the main target of the current mining operations. Argo occurs in the western area where the Pollux and Orion seams coalesce. The Argo average thickness is 4.5 m although it locally decreases to 0.5 m or increases up to 10 m due to faulting. The depth of Argo varies from 150-170 m in the western area to 270-290 m depth in the seam split zone. • Eastward of the Argo split zone, the Pollux and Orion seams occur at depths between 140-220 m and 180-300 m respectively. In Cook North, the Pollux seam is up to 400 m deep. The minimum interburden thickness for seam splitting is 0.3 m, which increases up to 18 m toward the eastern area. The Pollux seam shows an average thickness of 2.7 m and is also considered a mine target in the area between the Argo split line and the Tannyfoil Fault Zone. The Orion Seam shows an average thickness of 1.3 m, which (similar to the Aries and Pisces seams) represent a marginal thickness at large depth for underground mining. • In Cook North the Castor and Pollux seams coalesce to form the Gemini seam (GE). The GE seam shows an average thickness of 5 m and depths

Criteria	JORC Code Explanation	Commentary
		from 130-140 m in the northwest to 430 m in the northeast. The seam splitting and coalescing in this area is still not well understood mainly because few boreholes exist and the spacing is largely variable between 300 m and 1,200 m. The forthcoming infill drilling program includes a total of 20 open holes in this area. • The Pisces seam occurs at depths between 170 m to 320 m with a thickness of 1.8 m. The seam includes a stone band which certain area increases to more than 0.3 m thick where the seam splits in two plies (Pisces 1 and Pisces 2), each with an average thickness of 1 m and 0.85 m respectively. • Overburden and interburden sediments generally comprise lithic claystone siltstone, sandstone and carbonaceous shale.
Drill Hole Information	• A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: – easting and northing of the drill hole collar – elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar – dip and azimuth of the hole – down hole length and interception depth – hole length. • If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should	• A list of the drill holes used to build the structural model and to define the coal quality of the resource can be found in Appendix B. • Coordinates and elevation of all boreholes used in the geological model have been checked. Borehole that showed a difference in collar elevation larger than 2 m when compared with the Lidar topography surface 2017 were excluded from the model and resource estimate. • All drill holes have been modelled from vertical. Downhole borehole survey has been recorded for holes post-2007. The hole deviation data (dip, azimuth) available was checked; it was noted that the difference between drilled and vertical (calculated) depths is not large and it has been considered that the impact of hole deviation on seam thickness and coal volumes is negligible. Furthermore, model seam grids have proven to be accurate and true representation of the seam thickness as encountered in the current mining operations.

Criteria	JORC Code Explanation	Commentary
	clearly explain why this is the case.	
Data Aggregation Methods	• In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated. • Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. • The assumptions used for any reporting of metal equivalent values should be clearly stated.	• It is reported that in all seams where multiple coal quality samples were taken, the raw core samples were individually analysed and later composite on seam basis. • Coal quality samples were weighted on thickness (length) and relative density and composited on a per seam basis.
Relationship Between Mineralisation Widths and Intercept Lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	• All holes were drilled vertical. • All coal seams were modelled with no thickness cut-off. • A minimum thickness of 1.5 m has been applied for resource estimation, which is considered the minimum mineable seam thickness.

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	• If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	
Diagrams	• Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	• All appropriate diagrams are contained within the main body of the report and provided to Bounty.
Balanced Reporting	• Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.	• All available exploration data for Cook have been collated and reported. • Seam thickness and coal quality is fairly consistent in the Resource areas. Variations are generally related to faulting, which are easy to detect and/or predict based on the current exploration data.
Other Substantive Exploration Data	• Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results;	• All exploration data was gathered, analysed, and appropriately utilised in the resource estimation. • Reprocessing and interpretation of historic 2D seismic lines and a 3D seismic survey were conducted in 2015 and 2016 to improve the confidence on seam continuity along with detailing structure and faulting interpretation. • Geotechnical logging, sampling and testing from the overburden, interburden, seam roof/floor and coal (such as defect logging, field point load testing and laboratory testing) has been undertaken. Gas content assessment in different locations from surface boreholes and in-seam drilling.

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	bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	
Further Work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• During the geological modelling 2018 and preparation of the 2019 Cook Resource Estimate Report, a few areas were identified that could potentially aid the development of the Cook Mine. Suggested further work could include: • Drilling in the mine access drift area to increase the level of confidence in the Argo coal resource. A small drilling program of 3 open holes and 1 cored hole was executed at the time the resource estimation was in progress, which confirmed the continuity of the Argo Seam in this area, classified within the Indicated resource category. • Complete fault delineation drilling to confirm fault locations, types and displacements in the priority mining areas, and also to calibrate faults interpreted from 3D seismic data in Cook North. • Core drilling and sampling for coal quality assessment with in the southern area to elevate the confidence status of more of the resource.

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

Criteria	JORC Code Explanation	Commentary
Database Integrity	• Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. • Data validation procedures used.	• **Historic Data** – An onsite audit of data conducted on the 19th December 2017 by Xenith Consulting geologists confirmed that historic (pre-2005) drilling hardcopy logs and geophysics are held in a container at Cook Colliery. The electronic seam picks reviewed (approximately 70) matched hardcopy data and were corrected to geophysics. To this end Xenith consultants are satisfied that historic data is reliable. • **Recent Data (post 2005)** – Recent data exists in electronic format in the form of individual borehole files, LAS (and .pdf). Much of the data has been compiled into single excel files. Lithology data appears to have been previously reconciled to geophysics and seam picks reflect this accurately. • The topographic surface for the current geological model was sourced from the Airborne Lidar data and aerial imagery acquired in April 2017. • A review of the borehole collars vs Lidar topography at same location indicated most of the holes in the database are within 1m of topography. • Coal Quality data has been checked against lab reports where they exist and cross referenced with lithology and seam logs where possible. • Coal quality results were checked in Excel and Minex for identification of trends and anomalous results (sample outliers).
Site Visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The Xenith Competent Person and the modelling geologist visited Cook Mine site in January 2019 and May 2019. Technical discussions about geological data, modelling, mine planning, mining operations and tenements status demonstrated the good practices and highest industry standards in the Cook Mine. • The Competent Person's familiarity with the Cook Colliery Project Area and stratigraphy is thorough and sufficient. Review of the previous exploration data indicates that the geology is typical of the area.
Geological Interpretation	• Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.	• The drill hole density (core and chip) in the Cook Mine area allows good level of confidence in the nature of seam

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	• Nature of the data used and of any assumptions made. • The effect, if any, of alternative interpretations on Mineral Resource estimation. • The use of geology in guiding and controlling Mineral Resource estimation. • The factors affecting continuity both of grade and geology.	splitting, seam thickness, coal quality and general location of faults. • 2D and 3D seismic surveys have added further confidence to the nature of seam depths and the occurrence of faulting within the resource area.
Dimensions	• The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	• The coal seams within the Rangal Coal Measures which occur in Cook are (in stratigraphic order from top to base) Aries, Castor, Pollux (Argo), Orion, and Pisces. The lowest seam, the Pisces, is rarely intersected in boreholes in Cook. • In the Rangal Coal Measures, the coal seams commonly split and coalesce to form other seams, particularly towards the north and east directions from the south-western corner of ML 1799 where the Argo Seam splits into the Pollux and Orion Seams. In the northern area of ML 1799 towards the northern boundary of the sublease (7370000N, AMG84), the Castor and Pollux seams coalesce to form the Gemini Seam. • The coal seams vary generally from 1 m to 5 m. The Argo and Pollux seams are the primary mining targets with average thicknesses of 4.5 m and 2.5 m respectively. The remnants of the Castor seam (2.5 m thick) are also considered part of the coal resource for underground mining in this report. Average raw ash in these three seams is approximately 11-12%, total sulphur 0.36-0.37% which slightly increases to 0.38 % in the Castor seam, average CSN 4-5 but up to 8 in Argo and Pollux seams, and phosphorous 0.05-0.07% with the highest average value of 0.15% in the Argo seam. The average Specific Energy varies between 31-32 MJ/kg. • The Aries and Orion seams show average thicknesses of 1.0-1.5 m and thus have not been considered part of this coal resource estimate. • In the Cook North west area, the Rangal Coal Measures are sufficiently shallow to be extracted by open cut mining as is the case in the BMA Blackwater mining leases adjacent to ML 1779, ML 7357 and ML 1799.
Estimation and Modelling Techniques	• The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum	• The geological model used to estimate coal volumes and resources of the Cook Mine was built by Xenith in May 2018 using GEOVIA Minex software version 6.4.2. The model mesh size is 25 x 25 m.

Criteria	JORC Code Explanation	Commentary
	distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. • The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. • The assumptions made regarding recovery of by-products. • Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation). • In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. • Any assumptions behind modelling of selective mining units. • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	**Structural Modelling** • The model dataset consists of Lidar topography surface, drilling and sampling (seam roof/floor intercepts, coal quality), faults interpreted from seismic data and faults mapped during mining operations. The geological model was subsequently used to estimate Resources. • The seam modelling process in Minex involves a number of steps including borehole database validations, seam interpolation, structure modelling incorporating faults, and coal quality modelling that are stringently followed when any modelling/re-modelling is undertaken. • The seam interpolation process in Minex is a technique used to supplement the original borehole data with a complete stratigraphic sequence in each borehole. The added interpolated data is derived using a proven kriging algorithm to estimate the interburden thickness and seam thickness for each seam above and below the seams intersected in each borehole, using actual data values from surrounding boreholes for control. These interpolated values are tagged with an "I" in the database to differentiate them from the original borehole data. • The seam splitting was carried out to model the individual seams separately using all intercepts in the entire modelling area, and then using a SQL expression the grids were merged where the individual seams coalesce (interburden thickness < 0.3 m) to form the compound seam. • The faults were incorporated in the model as using the "Vertical Fault or 2D Fault Method" and faults strings with throw. • Due to the vertical fault method, the fault pattern was created individually for the Castor and Argo Seams. • To avoid misinterpretation in the continuity of coal seam thickness analysis, the anomalies of coal thickness associated with seam faulting were not included in the process of geological modelling. • Only the roof or floor coal intervals were included in the borehole database such that the coal thicknesses within these boreholes have been derived by the seam interpolation process in Minex.

Criteria	JORC Code Explanation	Commentary
		• The models used in the evaluation and resource estimation are generated using the Minex "Strata Build" method. This algorithm has been tried and proven on coal deposits around the world and is appropriate for modelling the folding and faulted surfaces of coal seams using irregularly spaced borehole data. In summary, the Strata Build methods consist of first creating a reference horizon from the borehole seam data; for the Cook model, two building horizons were created: Castor floor (CASF) Pollux Roof (POSR). Then, the "Multi-Seam Multi-Variable gridding" operation was used to build the Interburden (IB) and Thickness (ST) grids of all seams, followed by the "Seam Model Operations" to build the Roof (SR) and Floor (SF) of all seams. • The borehole validation and modelling procedure are summarised in Chapters 9 and 10 of this Resource Report, and fully described in Appendix C. **Coal Quality Modelling** • The seam quality grids were generated using the Multi-Seam Multi-Variable Gridding. • Compositing of the data was done on a seam level. This was based on the product data received from the laboratories at the seam level. Grids were created by seam for the following qualities reported on air-dried basis: – Relative Density (g/cc) – Raw ash (%) – Raw inherent moisture (%) – Raw volatile matter (%) – Raw fixed carbon (%) – Total sulphur (%) – Specific Energy (MJ/kg) – Crucible Swell Number (CSN; raw coal) – Phosphorous (%). • Coal quality grids were created based on sample test results from 240 cored samples from 86 boreholes. • All coal quality and seam structure grids were reviewed and validated by comparing grids and contours against borehole data postings. Borehole data statistics were compared against grid statistics and visual checks on coloured grids were also used to investigate anomalies. • Base of weathering was modelled but it does not intersect the seams. **Resource Estimation**

Criteria	JORC Code Explanation	Commentary
		• The resource estimation was based on the borehole data (PoO) which contain both geophysical logging results and coal quality results. The coal quantities were determined from the geological model built in Minex, and resource were estimated based on seam volume and density. • Only the Argo seam (main target), Pollux and Castor seam (remnants) have been considered coal resource. • When calculating the estimates, all resource categories were separated and weighted to give totals in each category. The Castor, Argo and Pollux seams had Relative Density (RD) modelled using the values attained from laboratory results of drillhole samples. • The RD of the samples was analysed on an air-dried basis. The modelled RD values were used in the estimation of tonnages; the tonnages for those seams with a thickness of less than 1.5 m were not estimated.
Moisture	• Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	• Coal quality is reported on an air-dried basis (Adb) • The relative density grids and resultant tonnage estimates, compiled as part of the 2019 resource, were based on analysis RD (adb) as derived from the sampled core intervals. A density default of 1.33 g/cc was used in areas with no density information. • The application of a Preston – Sanders method calculated in-situ density value was discussed but not applied for this resource estimate. The collection of valid moisture data was deemed inconsistent across the Cook Mine area and as such did not allow for the accurate calculation of in-situ RD. Various ACARP 10041 formulas were reviewed in order to utilise the available moisture holding capacity (MHC) data, but these were heavily reliant on default values in the Cook area. Using the MHC data available in Cook North, calculated results indicate that variance between in-situ RD and air-dried RD is negligible.
Cut-Off Parameters	• The basis of the adopted cut-off grade(s) or quality parameters applied.	• A maximum raw ash percentage has been applied, where a maximum raw ash of 50%, air-dried basis, has been applied to the resource estimate. • Minimum seam thickness was set at 1.0m
Mining Factors or Assumptions	• Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable,	• Minimum seam thickness was set at 1.0m

Criteria	JORC Code Explanation	Commentary
	external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	• Cook Colliery is a currently operating as a Bord and Pillar mine.
Metallurgical Factors or Assumptions	• The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	• It is the CP's opinion that at this stage of the project that there are no limiting metallurgical factors. • Cook Colliery has been an operating underground mine since the 1970's. • The Coal Resource at the Cook Colliery is amenable to both Open Cut and Underground extraction methods, the latter applicable to deeper parts of the project. • Composite analysis of raw coal quality data indicates the Aries, Castor, (Argo), Pollux and Orion seams present as a medium volatile bituminous coal characterized by: low to moderate ash, low sulphur, low to moderate Crucible Swell Number (CSN) and high energy. • Wash plant simulations have revealed the coal from Cook Colliery can generate coking coal products with low ash (<9%) and low pollutants such as sulphur (<0.5%).
Environmental Factors or Assumptions	• Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	• It is the CP's opinion that at this stage of the project that there are no limiting environmental factors.
Bulk Density	• Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.	• Inherent (air dried) moisture values have been derived from sampled core intervals. • In situ Moisture was assumed was averaged based on individual seam

Criteria	JORC Code Explanation	Commentary
	• The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit. • Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	'inherent moisture' (%ad) for the resource estimation. • The coal tonnage estimations are based on the Relative Density (RD) model for each coal seam on an air-dried basis. A default density of 1.33g/cc was used in areas where there was no density data available.
Classification	• The basis for the classification of the Mineral Resources into varying confidence categories. • Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). • Whether the result appropriately reflects the Competent Person's view of the deposit.	• Three resource categories have been identified within the Cook Mine area, depending on the level of confidence in the seam structure and continuity plus the level of variability in the coal quality data. • Drill holes, mined out areas, and seismic sections provide the basis for structural/thickness continuity. • Points of Observation have been used to establish coal quality continuity. • The level of drilling information and presence of an operating mine also assist with the classification of resource categories. • 2019 Resource tonnages for the seams within the Cook Mine Area are detailed in Table 1.
Audits or Reviews	• The results of any audits or reviews of Mineral Resource estimates.	• No external audits have been performed on the Mineral Resource estimate, but internal QAQC protocols have been followed.
Discussion of Relative Accuracy/ Confidence	• Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate. • The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. • These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	• The CP has assigned three level(s) of confidence to the coal resource estimate, depending on the drill hole spacing, geological framework, and exploration dataset as described in the Chapter 11. • Factors that could affect accuracy include unknown structures between completed drill holes, seam washouts in roof or inseam stone bands developing. No evidence exists at this point in time for these, apart from what has currently been geologically modelled or exists within the borehole database. • The borehole database has been subject of statistical analysis for identification of anomalous test results and analysis of trends particular of each coal seam or certain geological domain. Modelling interrogation was carried out on seam basis for structure and quality parameters. • The coal resource covers the western part of the mining leases where exploration and mining has occurred due to the favourable seam characteristics at relatively shallow

Criteria	JORC Code Explanation	Commentary
		depths. The eastern part of the mining leases, where no coal resource has been reported, is geologically complex, seams are very deep (> 350 m) and exploration data is very limited.

APPENDIX B

JORC Code 2012 Edition – Table 1 – Section 4 – Cook Colliery Coal Reserves Estimate

The following table provides a summary of important assessment and reporting criteria used at Cook Colliery for the reporting of Coal Reserves in accordance with Section 4 of the Table 1 checklist in The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition).

Table B.1 – Table 1 – Section 4 – Estimation and Reporting of Coal Reserves

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

Criteria	JORC Code Explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. • Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.	• The Cook Colliery Mineral Resource was estimated by Xenith Pty Ltd as of 21 June 2019. • The coal resources in the Argo Seam are: – Measured: 15 Mt – Indicated: 45 Mt – Inferred: 0 Mt – Total: 60 Mt • The coal resources in the Pollux Seam are: – Measured: 0 Mt – Indicated: 55 Mt – Inferred: 25 Mt – Total: 80 Mt • A 3D resource model was developed using both grid and block modelling techniques to model topography, structure and quality. • A mine design has been applied to the in situ resource model to create a reserves estimation model which reflects working sections, mining methods and associated assumptions. • Coal Reserves are included within the Coal Resources, and are estimated as of 30th June 2019.
Site visits	• Comment on any site visits undertaken by the Competent Person and the outcome of those visits. • If no site visits have been undertaken indicate why this is the case.	• The Resources Competent Person and Reserves Competent Person twice visited Cook Colliery during June and July 2019. • Underground areas inspected during June 2019 included the access drift, outbye main headings, stone driveage associated with mains headings, pit bottom, inbye panel conditions and general underground conditions in 205 panel. The area where mains panel 500 is planned to commence was also visited and reviewed. Sections where floor coal has been stripped were observed. • Surface areas inspected included the mine infrastructure area, store, emergency response building, training rooms and lamp cabin. • Mining conditions appeared good, and equipment satisfactory.

Criteria	JORC Code Explanation	Commentary
		• During the 2019 visit the Reserves Competent Person discussed developments to the Long Term mine plan and updated production modelling assumptions with Bounty Technical personnel.
Study status	• The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. • 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 economically viable, and that material Modifying Factors have been considered.	• Cook Colliery is an operating mine, originally developed as a bord and pillar operation in the 1970's before the introduction of longwall mining. As an operating mine, various studies have been conduicted over many years on specific topics to at least Pre-Feasibility level. The workforce is experienced in working the Argo Seam and the mine in general. • The estimated coal reserves and marketable coal reserves are based upon the Life of Mine (LOM) Plan which is technically achievable and economically viable. Material modifying factors have been considered in the conversion of Resources to Reserves.
Cut-off parameters	• The basis of the cut-off grade(s) or quality parameters applied.	• The mine plan is most predominantly influenced by the presence of geological structure. No quality cut-off has been applied to the mine plan. Due to the relatively thick coal seam, no thickness cut-off has been applied to the reserves. A practical 1.5 m thickness cut-off was used when estimating the coal resources. • For business planning and JORC reporting, a mine design and schedule have been used to generate cash flow schedules that reflect the mining sequence, equipment and workforce requirements, operating costs, capital costs and projected revenue. • A discounted cashflow analysis has been used to demonstrate economic viability with the reserves being cashflow positive.
Mining factors or assumptions	• 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). • 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. • The assumptions made regarding geotechnical parameters (e.g. pit	• A detailed mine plan has been developed and used to estimate reserve qualities and quantities from the resource model. • In situ coal tonnages are based on 4.0% moisture and a coal density of 1.33m^3/t). ROM tonnages are based on 6.0% moisture. Marketable tonnages are based on moisture of 11.0% (Coking product) and 10.0% (Thermal). • Cook Colliery is an underground mine that currently only exploits the Argo Seam. Conventional retreating

Criteria	JORC Code Explanation	Commentary
	slopes, stope sizes, etc.), grade control and pre-production drilling. • The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). • The mining dilution factors used. • The mining recovery factors used. • Any minimum mining widths used. • The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. • The infrastructure requirements of the selected mining methods.	longwall mining was previously used to mine some of the reserve, with in-seam development by continuous miners used to develop longwall panels. • After the longwall was inundated with water in 2017, a change to continuous mining only extraction has been adopted. • Personnel and equipment access to the underground operation is provided by one main transport drift, with a conveyor also installed in this drift. A second egress is effected by the downcast shaft and associated personnel winder. • The mine plan has been developed in conjunction with pillar designs based upon the recommendations of detailed geotechnical studies, updated for performance of actual pillars. All main headings, gateroads, and barrier pillars have been designed to provide the required level of stability at appropriate factors of safety. Reviews of geotechnical designs have been completed. • Continuous miner panels have been laid out to maximise resource recovery within the constraints of geological structure. • Mining dilution estimates are based upon practical experience and in discussion with management at the mine. Roof dilution of 50mm has been applied to all metres, along with floor dilution of 100mm from all metres. • A coal loss factor of 3% has been applied to account for cleanup, the minor variation in roof profile in the 'A' and 'B' cuts on Primary Development and slack coal left behind in continuous miner panels. • Continuous miner panels vary in length and orientation. They have been developed by the mine to maximise resource recovery and productivity, avoiding wherever possible faults and structure. • An immaterial amount of Inferred Resources and unclassified resources are included in the LOM Plan. The viability of the LOM Plan would not be compromised by excluding this coal, and it is excluded from the Reserves. • Established site infrastructure includes the mine offices, warehouse, workshop, power supply, ROM

Criteria	JORC Code Explanation	Commentary
		stockyard conveyors, ROM stockpile, coal handling and preparation plant (CHPP), reject disposal sites, product stockpiles, rail loop and train loader, and sewage/water treatment plants.
Metallurgical factors or assumptions	• The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. • Whether the metallurgical process is well-tested technology or novel in nature. • The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. • Any assumptions or allowances made for deleterious elements. • 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. • For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?	• The Cook Colliery CHPP consists of ancillary surface conveyors and ROM coal stockpile, provate haula road for ROM coal, coal preparation plant, product stockpiles, a train loader and reject disposal sites. • The CHPP modules produce two products – a primary semi hard coking product and a thermal product. • The technology is well tested, being routinely applied to coal processing, and having operated at Cook Colliery for many years. • Yield for each product is estimated on the basis of laboratory tests of exploration samples, and modelling. A range of coal qualities have been modelled including volatile matter, sulphur, phosphorus, CSN, CSR, fluidity and specific energy. • In the Northern Domain, Coking Product Yield is estimated at 68 %, Thermal Product Yield is estimated at 17 % with a total yield of 85 %. • In the Southern Domain, Coking Product Yield is estimated at 63 %, Thermal Product Yield is estimated at 22 % with a total yield of 85 %. • None of the trace elements analysed are considered to be present to the extent that they have a material impact upon the marketability of the coal. • The CHPP is an operational plant. Plant performance is measured and reconciled against forecast. • The modelled qualities are appropriate to assigning forecast products to likely markets.
Environmental	• 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.	• The required environmental licences and authorities are in place for the Cook Colliery mining operation. • The main environmental impacts of mining at Cook Colliery is reject disposal. No new areas of subsidence will be created through the implementation of a first workings only method of mining. Prior subsidence areas are monitored and treated to minimise erosion. Reject material is disposed of in surface

Criteria	JORC Code Explanation	Commentary
		disposal facilities which will be rehabilitated prior to ultimate closure of the mine.
Infrastructure	• 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.	• Cook is an operating coal mine, with the necessary infrastructure in place. Sustaining and replacement capital expenditure is allowed for in the LOM Plan to support ongoing mining operations.
Costs	• The derivation of, or assumptions made, regarding projected capital costs in the study. • The methodology used to estimate operating costs. • Allowances made for the content of deleterious elements. • The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products. • The source of exchange rates used in the study. • Derivation of transportation charges. • The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. • The allowances made for royalties payable, both Government and private.	• Specific major capital requirements are identified as part of the LOM planning process. This includes individual items required to sustain the Life of Mine. • Operating costs are based on actual site costs, and have been compared for reasonableness with a database of other similar operations. • None of the trace elements analysed are considered to be present to the extent that they have a material impact upon the marketability of the coal. • Benchmark coal prices are based upon consensus pricing forecasts for Cook products, reflecting their perception of expected supply and demand balance. • Exchange rates are an assumed USD:AUD of 0.70. • Transportation charges are based upon existing rail contracts. • Treatment charges are based on actual site costs. No penalties have been modelled, however an adjustment to benchmark pricing has been made, reflecting Cook Colliery positioning in the market. • Forecast royalties are based upon current Queensland state government royalty rates, and any private royalties payable..
Revenue factors	• 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. • The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.	• Benchmark coal prices are based on Wood Mackenzie view of possible pricing movements, as at July 2019, and reflect their perception of expected supply and demand balance. • Pricing is based on the Hard Coking Coal (QLD) Benchmark pricing and the Newcastle 6000 kcal/kg NAR for Thermal product. • Pricing has been factored relative to these benchmarks to account for the relative quality of Cook Coking and Thermal products.

Criteria	JORC Code Explanation	Commentary
Market assessment	• The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. • A customer and competitor analysis along with the identification of likely market windows for the product. • Price and volume forecasts and the basis for these forecasts. • For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.	• The coal market is influenced by a wide range of factors influencing supply and demand. The Cook product is established in the market place. • No significant change in product quality and marketability is anticipated. Sensitivity to potential changes has been tested. • Volume forecast is based on the LOM schedule. • Pricing is based on the Hard Coking Coal (QLD) Benchmark pricing and the Newcastle 6000 kcal/kg NAR for Thermal product. • Pricing has been factored relative to these benchmarks to account for the relative quality of Cook Coking and Thermal products.
Economic	• 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. • NPV ranges and sensitivity to variations in the significant assumptions and inputs.	• Testing of the economic viability of the reserves is based upon actual operating costs, forecast production, forecast capital expenditure, and Platts coal pricing. The details of some of the inputs are commercially sensitive and are not disclosed. • NPV has been tested against variations in significant drivers – the reserves remain economically viable under all scenarios.
Social	• The status of agreements with key stakeholders and matters leading to social licence to operate.	• Cook is an established mining operation, and is committed to sustaining a positive contribution to the local and regional communities through employment opportunities and supply purchases. Taxation and royalty payments contribute to the state and national economies. • Cook maintain positive relationships with local landowners, community members, and traditional owners.
Other	• To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: • Any identified material naturally occurring risks. • The status of material legal agreements and marketing arrangements. • 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	• Beyond the normal mining, processing, and business risk, no additional material risks have been identified. Sensitivity to variation in market placement has been tested, and the reserves remain economically viable. • All necessary titles and agreements are in place. • There are no grounds to expect that the necessary titles and agreements will not be renewed as required.

Criteria	JORC Code Explanation	Commentary
	the Pre-Feasibility or 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.	
Classification	• The basis for the classification of the Ore Reserves into varying confidence categories. • Whether the result appropriately reflects the Competent Person's view of the deposit. • The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).	• Mining blocks within the Measured Resource have been converted to Probable Reserves. • Mining blocks within the Indicated Resource have been converted to Probable Reserves. • Mining blocks within Inferred and unclassified Resource have not been converted into Reserves. • The Competent Person is satisfied that the Coal Reserves reflect the outcome of technical and economic evaluation of the deposit. • The Coal Reserves consist of Probable Reserves. No Proved Coal Reserves have been derived from Measured Resources. • The estimated Coal Reserves are: – Proved: 0 Mt – Probable: 8.6 Mt – Total: 8.6 Mt • The estimated Marketable Coal Reserves are: – Proved: 0 Mt – Probable: 7.3 Mt – Total: 7.3 Mt
Audits or reviews	• The results of any audits or reviews of Ore Reserve estimates.	• The current LOM model has been reviewed independently by Xenith during this 2019 JORC estimate. The reserves model has been compared to the LOM model with good agreement. • Independently, a reserve calculaiton was conducted and associated production schedule developed, with good agreement.
Discussion of relative accuracy/ confidence	• 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.	• The confidence classifications for the coal resources were determined by Xenith. They appear appropriate, and have been adopted for reserves classification. • The reserves have been estimated using tools and processes that have been widely tested in the Australian coal mining industry.

Criteria	JORC Code Explanation	Commentary
	• 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. • 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. • 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.	