

Recommendation: **BUY**

May 2018

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### Company Information

ASX Code	BCI
Share Price (28 May 2018)	\$0.15
Ord Shares (incl rights)	395.0m
<b>Market Cap -un diluted</b>	<b>\$59.2m</b>
Performance rights	19.8m
<b>Market Cap -- diluted</b>	<b>\$62.2m</b>
Est. Cash (31 Mar 2018)	\$17.5m
Total Debt	\$0.0m
<b>Enterprise Value</b>	<b>\$44.7m</b>

### Directors

Chairman (Non-Exec)	Brian O'Donnell
Managing Director	Alwyn Vorster
Director (Non-Exec)	Michael Blakiston
Director (Non-Exec)	Jennifer Bloom
Director (Non-Exec)	Martin Bryant
Director (Non-Exec)	Andy Haslam

### Significant Shareholders

Wroxby Pty Ltd	27.7%
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### Company Details

Address	Level 1, 15 Rheola Street West Perth WA 6005
Phone	+61 (0) 8 6311 3400
Web	<a href="https://www.bciminerals.com.au/">https://www.bciminerals.com.au/</a>

Source: Company

### Price Chart



Source: Commsec

### Key Points

- **BCI Minerals has substantial assets in iron ore, salt and sulphate of potash (SOP) along with early stage exploration projects – all supported by cash flow from its Iron Valley royalty stream.**
- **Improving economics on the Buckland Iron Ore Project with higher production rates (15 – 20 Mtpa) and the potential to source higher grade ore from the Kumina tenements could transform this project. Earlier this year Sinosteel signed a non-binding MOU to review its potential participation in the project.**
- **Kumina itself is a potential game changer. Exploration on these tenements is identifying high grade iron ore deposits (Kumina E and J deposits) with maiden resource estimates to be announced in June 2018. Recent drill intersections from Kumina J include:**
  - **46m at 61.9% Fe from surface (KRC0134)**
  - **42m at 62.2% Fe from 2m (KRC0136)**
- **Kumina can support the Buckland project economics but may be strategically positioned and valuable to any of the neighbouring iron ore producers.**
- **The Mardie Salt Project has been expanded to include Sulphate of Potash (SOP) production with the pre-feasibility study scheduled for completion in June 2018. As the project is only at Scoping Study Stage it is being heavily discounted by the market. However, the release of a positive Pre-feasibility Study is likely to directly reduce this discount as evident in SOP Company comparisons. A later rerating is likely to occur with the introduction of a salt and/or SOP industry participant to assist the project moving forward.**
- **Meanwhile the Iron Valley Royalty Stream continues to provide important working capital. Project Operator, Mineral Resources Limited, is continually seeking productivity and cost improvements and is well advanced in testing a new Bulk Ore Shuttle System (BOSS) for transporting ore. This offers significant cost savings (capital and opex) and could lead to a doubling of production at the mine and doubling the royalty paid to BCI.**
- **BCI has an enterprise value of only \$45m after backing out its \$17.5m cash on hand. However, our sum of the parts valuation is a healthy 24 cents and provides significant upside to the current 15 cent share price. Catalysts to drive this share price towards our valuation are likely to be the quantification of the maiden resource tonnage identified at Kumina and the advancement of Mardie with a positive pre-feasibility study. In particular, Breakaway Research has adopted a conservative valuation approach to Kumina and it is likely that if the Company reports a 50 Mt – 100 Mt high grade resource, then the valuation will be substantially higher than 24 cents.**



*BCI Minerals has a diverse portfolio of projects but is focused on moving the Buckland Iron Ore Project and Mardie Salt Projects forward. Both projects offer significant value to investors but to-date the catalysts have not been evident. Higher production rates and the introduction of Kumina high grade ore are likely to substantially improve the economics of the Buckland project. However, it is market confidence that Kumina can deliver this higher-grade ore with the announcement of resource estimates in June 2018 which is likely to be the catalyst for a rerating of the Buckland project. Elsewhere, expanding the Mardie Salt Project to include Sulphate of Potash ("SOP") moves this project into the SOP sector which provides greater value transparency and the catalyst will be the pre-feasibility results announced in June 2018. Later, third party investment in this project providing tangible 'see-through' value will encourage the market to continue to rerate the project.*

*Our valuation for BCI is 24 cents per share and comprises the following components.*

<b>Valuation</b>		<b>Value (A\$m)</b>	<b>Value per share (A\$/share)</b>
NPV <sub>10%</sub> - Iron Valley Royalty Stream	A\$m	58.9	0.15
Kumina iron tenements - acquisition price	A\$m	9.0	0.02
Buckland - nominal US\$0.31 per reserve tonne	A\$m	32.0	0.08
Mardie Salt Only - based SOP Peer Comparison	A\$m	15.2	0.04
Carnegie SOP, other royalties and exploration	A\$m	3.5	0.01
Existing cash on hand (estimated at 30 June 2018)	A\$m	10.3	0.03
Corporate	A\$m	-35.6	-0.09
<b>Total valuation</b>	<b>A\$m</b>	<b>93.3</b>	<b>0.24</b>

*The valuation provides a +60% upside to the current share price and it is the Buckland/Kumina and Mardie catalysts which can drive this rerating. Indeed, we expect Kumina could add an additional 5 cents per share if a +60Mt high grade resource is reported in June given the importance of this project. Furthermore, a positive Mardie PFS result could attract a higher valuation based on SOP peers.*

*These catalysts are expected to occur over the next few months, hence Breakaway Research's recommendation is a **BUY** for BCI Minerals.*

## **Company Overview**

*Originally BC Iron, it was the first junior to secure third-party rail access....*

The Company listed on the ASX in December 2006 as BC Iron Limited, an iron ore company focused on developing the Nullagine Project in the Pilbara region of Western Australia. It established the Nullagine Joint Venture with Fortescue Metals Group Limited in 2009 and achieved a milestone of becoming the first junior mining company to utilise both third party rail and port infrastructure owned by a major company in the Pilbara in early 2011. Nullagine successfully operated for 5 years and resulted in approximately \$100m in dividends being paid to shareholders.

In August 2014, the Company announced a recommended off-market takeover offer for Iron Ore Holdings Limited. The transaction included the acquisition of both the Iron Valley and Buckland iron ore projects as well as some earlier stage projects and royalty agreements. Iron Valley commenced exports in October 2014 under the operatorship of Mineral Resources Limited and continues to generate royalty-type cash flow to underpin the Company's activities.

In mid-2016, BC Iron refined its strategy to focus on growth and asset diversification. This was also reflected in the name change to BCI Minerals Limited ("BCI") in November 2017 and the project portfolio now includes iron ore, salt, potash, gold, lithium and base metals.



## Key projects to focus on

*In 2016 the Company was renamed BCI Minerals and is now focused on salt and SOP as well as iron ore ...*

Breakaway Research believes that there are two projects which stand out as providing significant upside to value recognition in the share price and these are the Buckland Iron Ore Project and the Mardie Salt and Sulphate of Potash ("SOP") Project. Both projects could utilise a potential Cape Preston East port development but this port development may not be necessary.

The Iron Valley royalty stream is also important in providing cash flow and financial forecasts for the Company has been presented in Appendix 1. This mine is managed by Mineral Resources (ASX Code: MIN) and this company is considering introducing a new Bulk Ore Shuttle System BOSS ore transport system. While this is described later in this report, its introduction could potentially double production from the Iron Valley mine and with a consequence that the royalty stream may also double to BCI Minerals.

*Buckland Iron Ore Project and the Mardie Salt Project will be the main value drivers ....*

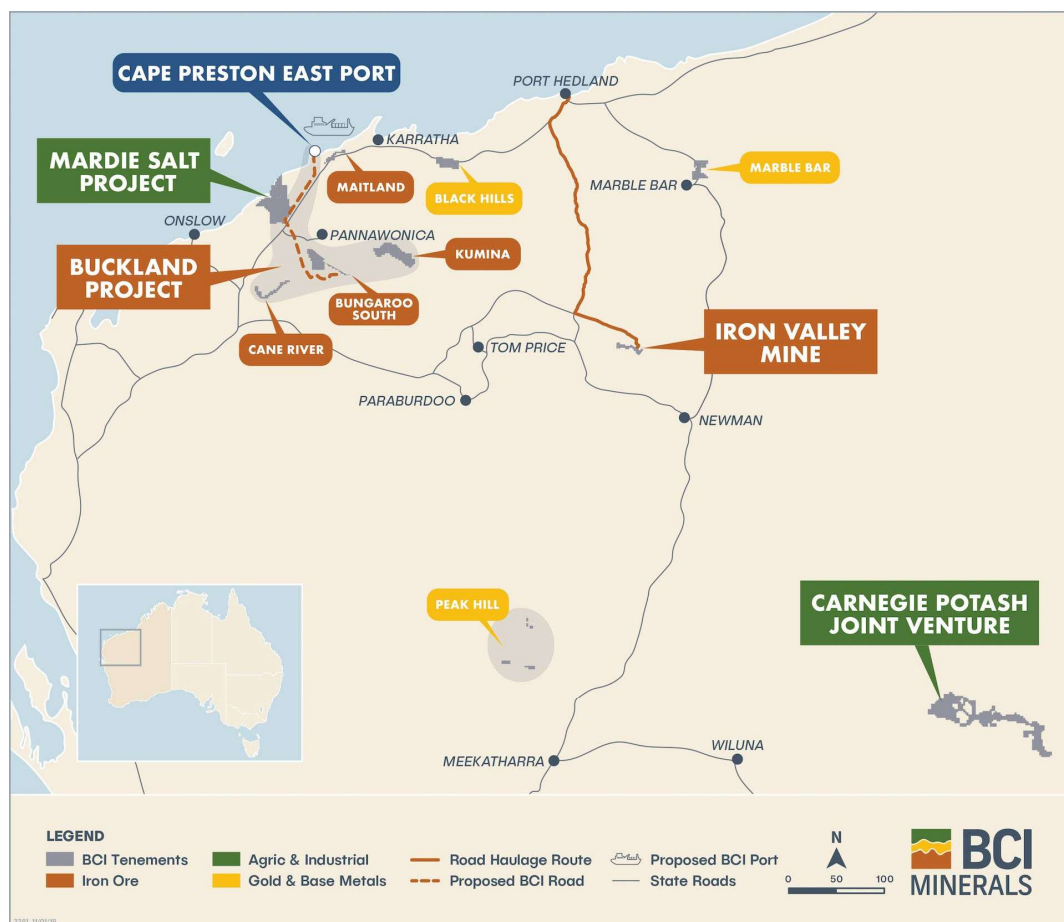


Figure 1. BCI Mineral's project locations (Source: Company).

*Investment rationale is about management's ability to do clever deals on these significant assets...*

Breakaway Research believes that an investment in BCI Minerals is justified around project value realisation and it is not about the modest cash flow from iron ore royalty stream.

Positive factors which can contribute to this realisation include the enviable track record of management led by MD Alwyn Vorster and the current share price discount to the sum of parts valuation outlined below.



Valuation		Value (A\$m)	Value per share (A\$/share)
NPV <sub>10%</sub> - Iron Valley Royalty Stream	A\$m	58.9	0.15
Kumina iron tenements - acquisition price	A\$m	9.0	0.02
Buckland - nominal US\$0.31 per reserve tonne	A\$m	32.0	0.08
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Corporate	A\$m	-35.6	-0.09
<b>Total valuation</b>	<b>A\$m</b>	<b>93.3</b>	<b>0.24</b>

Figure 2. Sum of the parts valuation for BCI Minerals.

Breakaway Research's valuations are based on a range of methodologies including NPV for the Iron Valley Royalty Stream, acquisition costs for the Kumina iron ore tenements, an in-situ iron ore valuation multiple for Buckland (excluding Kumina) and a SOP comparison for the Mardie Salt and SOP project.

Kumina is treated separately from Buckland as Kumina may deliver greater value through an alternative transaction with a third party rather than being integrated with the Buckland Project given the premium that that higher-grade iron ore is now attracting. At least under a scenario described above, the total value recovery from a Kumina sale would have to be at a premium to the combined Buckland – Kumina synergies.

### **Buckland Iron Ore – A New Look**

Buckland is a 100% owned strategic mine-to-port iron ore development project located in the West Pilbara region. The project comprises proposed mines at Bungaroo South, Kumina and other deposits, and a proposed port at Cape Preston East. Like the Iron Valley Operation run by Mineral Resources, it will involve large and efficient haul trucks to deliver the ore to the proposed port.

Figure 3 provides an overview of the various tenements, haul roads and port location.

Buckland currently has a total Mineral Resource of 283.3 Mt at 56.5% Fe and an Ore Reserve of 134.3 Mt at 57.6% Fe. The current market discounts for lower grade iron ore products combined with the current iron price is leading to lower than expected revenue for an 8 Mtpa production case outlined in the feasibility study completed in 2014. Nevertheless, all primary approvals are in place for the Bungaroo South mine and haul road and demonstrates the project advancement.

In the current market, there are factors which are being addressed to significantly boost the project economics. These are:

1. Increasing the annual production rate to 15 to 20 Mtpa.
2. Improving the ore quality for export.

The Bungaroo South mine site has limitations on its ability exceed an 8 Mtpa production rate. However the acquisition of the Kumina tenements could potentially provide 7 – 12 Mtpa additional production at a higher average Fe grade (see Figure 3).

*Buckland is a multi-mine to port development....*

*It has extensive resources and reserves....*

*Higher annual production and higher-grade ore will improve the project economics...*

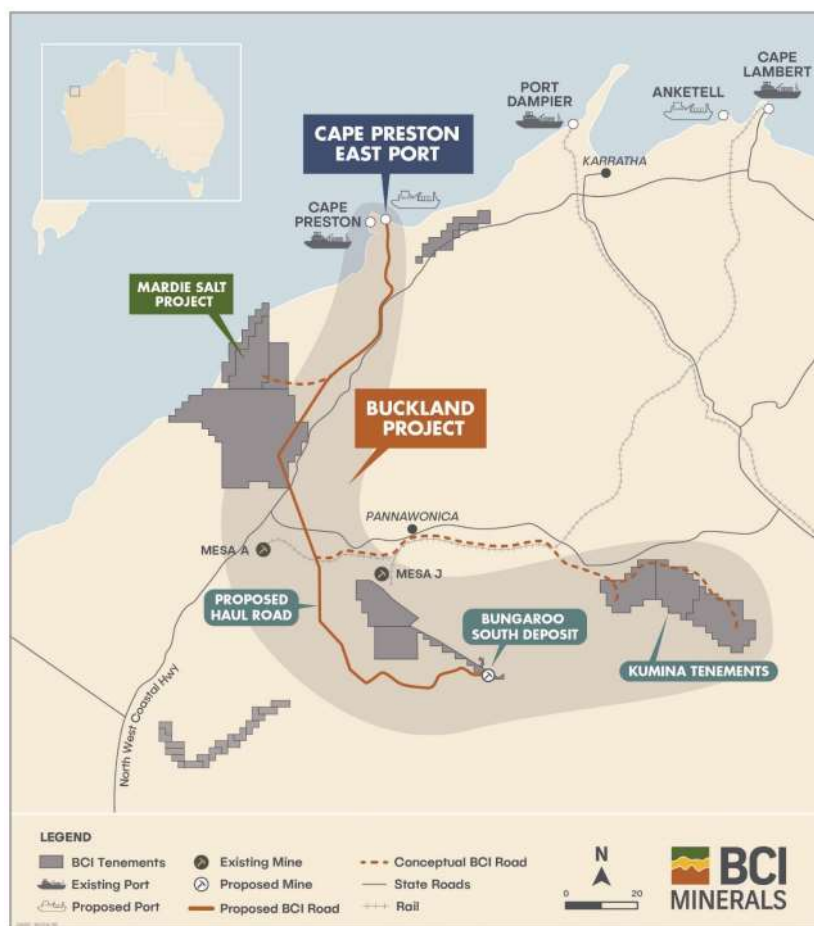


Figure 3. Buckland Project Overview (Source: Company).

### Kumina Acquisition – A game changer

*The acquisition of the Kumina tenements has been a game changer ...*

In September 2017 BCI announced it was acquiring two separate tenement packages from Mineralogy Pty Ltd (Mr Clive Palmer's company). One was the Cane River tenements in the west and the second was the Kumina tenements as marked (see Figure 3 above).

The terms for the acquisition were:

- \$2M in cash upon execution of the agreements; \$7M in cash upon completion of the acquisition of both tenement packages;
- An iron ore royalty of 2.0% of FOB revenue on the first 100 Mt of iron ore mined, increasing to 3.5% of FOB revenue on any iron ore in excess of 100 Mt mined;
- A 3.5% royalty on the value of any other minerals sold from the tenements

*The Kumina tenements comprise three granted exploration licences covering 480km<sup>2</sup>.....*

The Kumina tenements comprise three granted exploration licences covering an area of approximately 480 km<sup>2</sup> (See Figure 4) which had not previously been subjected to modern iron ore exploration.



*BCI has been steadily ramping up exploration on Kumina .....*

*Rock chips were generally higher than 62% Fe.....*

*There are bedded iron deposits ...*

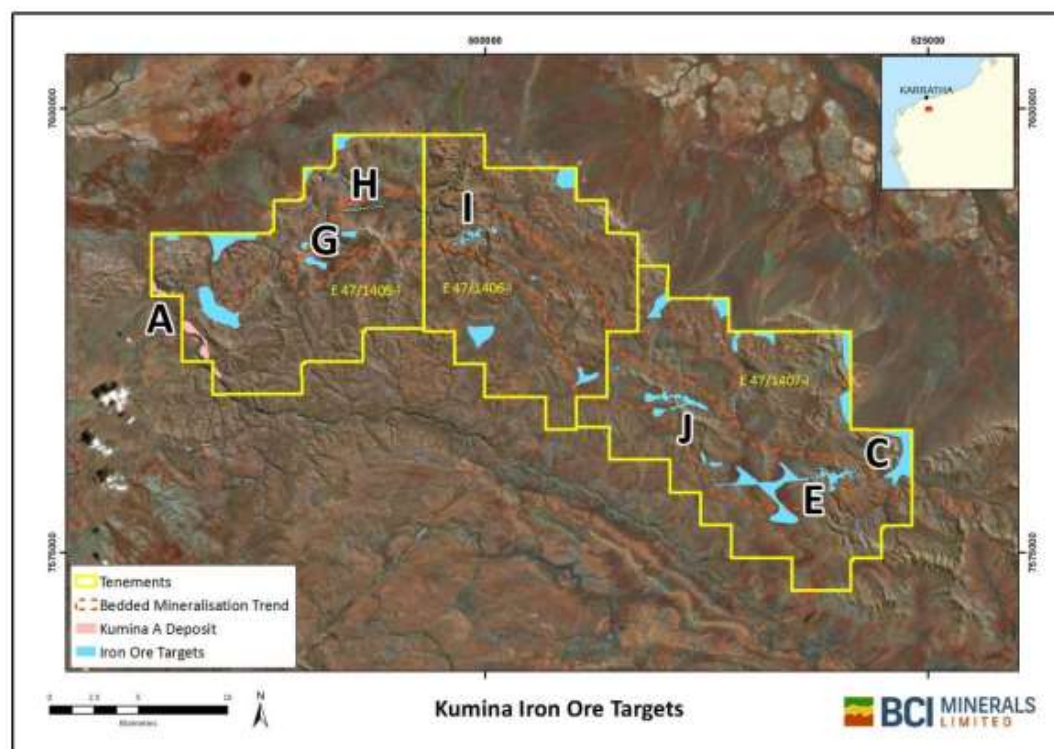


Figure 4. The Kumina tenements with prospects (Source: Company).

Since the acquisition of the project late last year, BCI has ramped up exploration activities leading to a succession of positive announcements over the last few months – particularly as drilling has progressively testing targets moving west to east across the tenements and it will appear to culminate in the reporting of a high grade maiden resource in June 2018.

Initial work at Kumina focused on drilling the A target (Channel Iron Deposit) given its continuity with the adjacent Australian Premium Iron (“API”) Joint Venture’s Kumina Creek deposits. API is owned by Aquila Steel and AMCI and its Kumina Creek deposits form part of its Stage 2 development (See Figure 5).



*Initial work focused on the Channel Iron Deposits in Target A ...*

*Target A represents the continuation of API's Kumina Creek Project in the adjacent tenement ...*

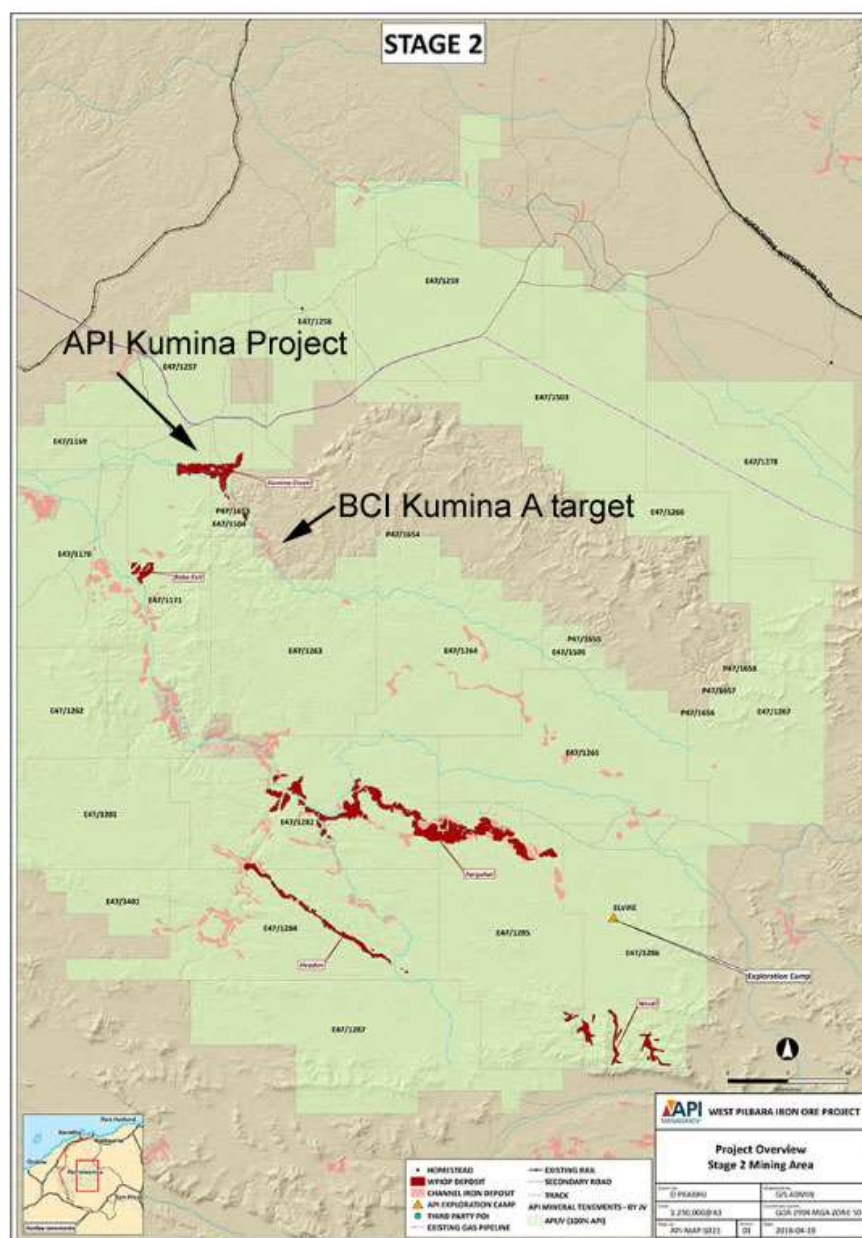


Figure 5. Location of API adjacent Kumina Creek Channel Iron Deposit to BCI's Target A prospect (Source: API).

Target A was the first focus of BCI after acquiring the tenements and subsequent drilling demonstrated typically 30 metre widths of channel iron deposit grading 57% to 60% Fe – potentially being 'more of the same' with the existing Buckland resource base although with lower phosphorous impurities.

*BCI has commenced a 300-drill hole programme on the higher-grade prospects...*

On 9th March 2018, BCI announced it was commencing a 300 RC hole programme to test the bedded iron deposit targets E and J as well as channel iron deposit targets B and C (see Figure 5).

The E and J targets are particularly exciting as BCI has identified high grade outcropping bedded iron mineralisation with rock chips generally recording grades above 62% Fe with the best results up to 67% Fe.



Figure 5. Target E bedded iron prospect (Source: Company).

On 9<sup>th</sup> May BCI released an update on drilling at the Kumina tenements and reported that the initial assay results from Kumina E had confirmed the discovery of a high-grade iron ore deposit.

Best results include:

- 40m at 62.0% Fe from surface in hole KRC0100
- 34m at 60.3% Fe from surface in hole KRC0068
- 32m at 59.9% Fe from surface incl. 10m at 62.1% Fe from surface in hole KRC0069
- 30m at 59.9% Fe from surface incl. 6m at 63.3% Fe from surface in hole KRC0106
- 22m at 61.9% Fe from surface incl. 10m at 64.4% Fe from 10m in hole KRC0120
- 20m at 64.4% Fe from surface incl. 6m at 66.1% Fe from 4m in hole KRC0087
- 18m at 62.4% Fe from surface incl. 12m at 64.2% Fe from 4m in hole KRC0088

*Kumina E deposit has been returning high grade iron ore intersections...*

The Company reports that the Kumina E deposit comprises mapped surface Bedded Iron Deposit (“BID”) and Detrital Iron Deposit (“DID”) mineralisation hosted in the Joffre Member of the Brockman Iron Formation in two distinct areas at the eastern and western ends of the target zone. Mineralisation is interpreted to potentially extend undercover between the eastern and western areas.

The intersections above are the better results from drilling in the eastern area of the Kumina E deposit and a plan view of this drilling is presented in Figure 6.

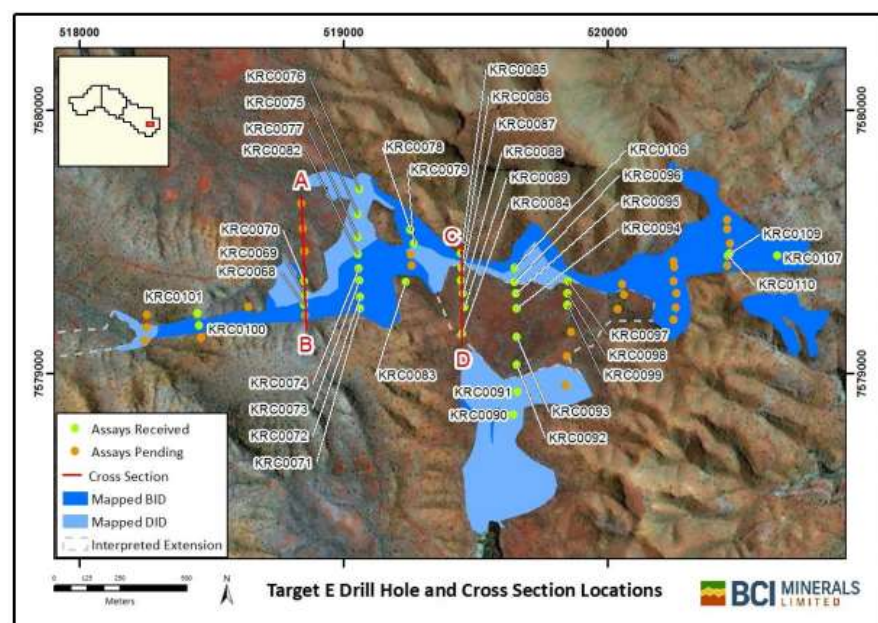


Figure 6. Drillhole locations in the eastern part of the Kumina E deposit (Source: Company)



A cross-section through the C – D section is presented below and outlines a relatively simple DID deposit (Figure 7).

*In cross-section, Kumina E is a relatively simple orebody....*

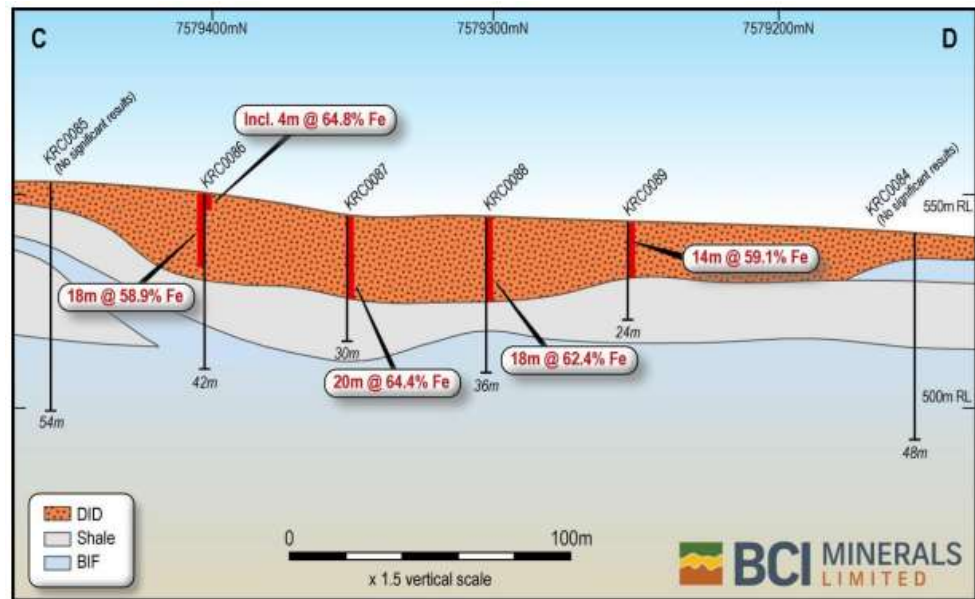


Figure 7. Cross-section through the Kumina E deposit (Source: Company)

*Recent announcements on the Kumina J deposit has reported similar high grade intersections....*

*The Company will announce a resource statement in June 2018 for Kumina A, E & J deposits....*

More recently, the Company has reported drilling results from the Kumina J deposit and which show similar stunning results as with the Kumina E deposit outlined above. Results reported on the 24<sup>th</sup> May 2018 include:

- 46m at 61.9% Fe from surface (incl. 12m at 63.5% Fe from 4m) and 44m at 59.8% Fe from 50m in hole KRC0134
- 42m at 62.2% Fe from 2m, 28m at 59.6% Fe from 50m and 14m at 58.7% Fe from 82m in hole KRC0136
- 48m at 60.6% Fe from surface (incl. 20m at 62.5% Fe from 4m) and 14m at 58.3% Fe from 52m in hole KRC0181
- 32m at 61.6% Fe from surface and 38m at 58.6% Fe from 40m in hole KRC0133

Both the Kumina E and J deposits are now shaping up to potentially represent substantial high-grade iron ore resources. BCI advises that it will provide maiden resource estimates in June 2018 for the higher grade Kumina E and J prospects along with the Kumina A deposits.

### **Cape Preston East Port Proposal**

The Buckland Iron Ore project requires the development of a port facility at Cape Preston East, and which potentially could also be used by the Mardie Salt and SOP project discussed later. (see Figure 8).

*Development of the Cape Preston East port is required for the Buckland Iron Ore Project ...*

BCI would become lease holder of this A\$300m project and which has competitive forecast operating costs of A\$8/t. Environmental and heritage approvals have been secured and BCI is finalising Construction Applications with the Pilbara Ports Authority.

Key export capacity is targeted at 15 – 20 Mtpa of 'Buckland Blend' iron ore and 3 Mtpa of Mardie salt. Third party users would also have access to utilise the export facilities.



*It would be a multi-commodity and multi-use port facility ....*



Figure 8. Cape Preston East proposed multi-commodity port facility (Source: Company).

### Value Realisation with the Buckland Iron Ore Project

*Value realisation requires joint venture partners with deep pockets ...*

*It has signed a non-binding MOU with Sinosteel ...*

*Capex estimated at A\$600m and opex at less than A\$30/t FOB....*

BCI has fully acknowledged it will require partners with deep pockets to finance the development of the Buckland Iron Ore Project and the Cape Preston East Port Facility.

In January 2018 it signed a non-binding MOU with Sinosteel Group which provided a framework for cooperation towards potential binding agreements in relation to marketing and offtake, engineering services and funding within a joint venture structure. Converting this non-binding MOU to a binding agreement is a priority of the Company in 2018 as is engaging with other potential partners.

Reworking of the project by BCI has reduced the capital to around A\$600m (excluding Port costs) for the mines and haul road and with C1 operating costs at less than A\$30/t FOB and which means that it is becoming a competitive project.

In addition, the scale of the project is large and Breakaway Research believes that the BCI team has the experience and skills to negotiate an attractive joint venture which will deliver material value to BCI shareholders.

Recapping, Buckland resources and reserves are presented in Figure 9.

	Buckland Resources	Buckland Reserves
Million tonnes	283.3	134.3
Fe grade	56.50%	57.60%
Contained iron	160.1	77.4

Figure 9. Buckland Resources and Reserves (Source: Company)

In terms of valuation, Breakaway Research has drawn data from CSA Global's Independent Technical Assessment and Valuation dated 16th January 2016 where it had estimated the price paid per tonne of Fe metal for in situ resources and reserves for series of iron ore transactions and then adjusted these prices for changes in the iron ore price at the time of the transaction to provide a common base to reflect market conditions at the time of their report.

We note that at the time of this assessment the iron price was at a low point (<US\$45/t) and provides conservative valuation multiples given that the current iron ore price is well above US\$60/t (62% Fe spot cfr Tianjin).

Figure 10 outlines values for Buckland based on the CSA Global multiples and suggests an average value of A\$66.2m based on Buckland's resources and an average value of A\$32m based on



*We have valued Buckland (excluding Kumina) at A\$32m on a reserve multiple....*

*We have valued Kumina only on an acquisition cost basis....*

Buckland's reserves. In our valuation we have conservatively assumed the lower of these values using reserves and which is A\$32.0m.

	US\$ per contained Fe tonne	Contained Fe in Resources	Buckland Value based on Resources (A\$m)	Contained Fe in Reserves	Buckland Value Based on Reserves (A\$m)
Low range	0.06	160.1	12.8	77.4	6.2
High range	0.56	160.1	119.5	77.4	57.8
Average	0.31		66.2		32.0

Figure 10. Valuations based CSA Global multiples and Buckland's Resources and Reserves. We have used an average valuation of A\$32m for our BCI analysis.

Earlier this year Merrill Lynch compiled the following chart (Figure 11) which estimates the incentive price for greenfield and brownfield iron ore projects to achieve a 15% IRR and which is based on AME data.

*Buckland economics are improving relative to other projects....*

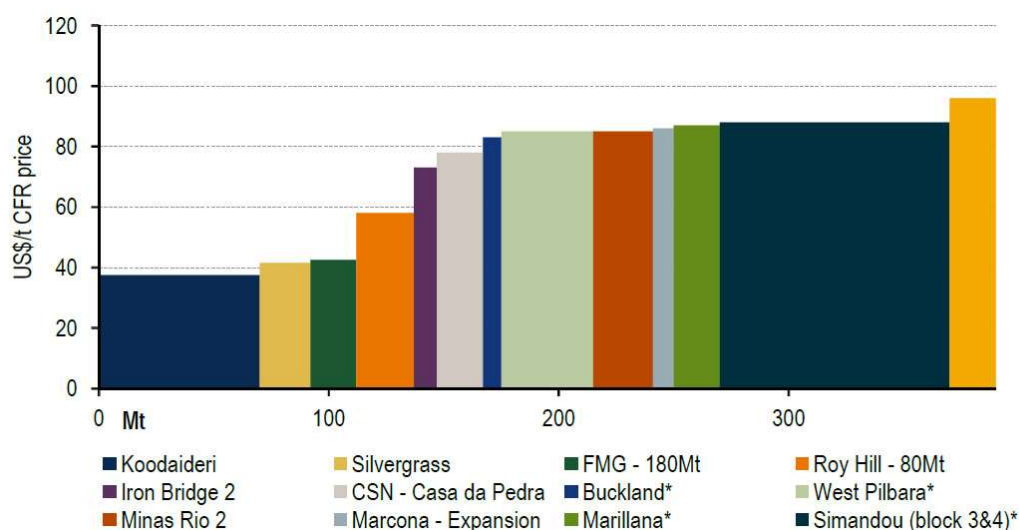


Figure 11. Estimated iron ore price required for greenfield and brownfield iron ore projects to achieve a 15% IRR (Source: ML 9 Jan 18).

The projects requiring a lower iron ore price than Buckland are owned by Rio Tinto, Fortescue and Brazilian CSN.

With higher 15 – 20 Mtpa production rates, Buckland will experience improved economies of scale and as outlined earlier, will decrease unit FOB costs. In addition, the introduction of higher grade ore from Kumina means that the average iron ore FOB selling price also boosting project returns. The net result is that Buckland will require a lower iron ore price to achieve a 15% IRR and will move left on Figure 11, therefore increasing the chances of project development.

### **Mardie Salt & Sulphate of Potash ("SOP") Project – "Part of the Package"**

The Mardie Salt & SOP Project is approximately 50 km south-west of BCI's proposed Cape Preston East Port. There are a number of major solar salt producing operations in the broader region.

In 2017 BCI completed a positive Scoping Study on the project with the following key findings:

Production of 3.0-3.5 Mtpa of high purity industrial-grade sodium chloride salt from seawater via a solar evaporation, crystallisation and raw salt purification;

- Operating life of a minimum 20 years.
- Export of salt via BCI's proposed Cape Preston East Port;



*A positive scoping study has been completed on the Mardie Salt project ...*

- Estimated capital costs of A\$225-255m
- Estimated operating costs of A\$19-21/t FOB; and
- Pre-tax NPV10 of A\$290-380m, pre-tax IRR of 25-27% and EBITDA of A\$80-100m per annum.

With the positive outcome of the Scoping Study, BCI instigated a Pre-feasibility Study which also incorporates 50 - 75 ktpa Sulphate of Potash ("SOP") production.

The results of the Pre-feasibility Study are schedule for release in June 2018.

BCI has provided the market with diagrams to improve the market's understanding of the project and Breakaway Research has selected and number of these diagrams to assist investors.

*A pre-feasibility study will be completed in June 2018 ...*

Figure 12 shows the location of the Mardie Salt Project along with other competitor salt producers. This reaffirms that the project's location is ideal for salt production.

*It is in a salt producing region.....*



Figure 12. The location of the Mardie Salt Project relative to other salt projects. (Source: Company).



It is a relatively simple flow sheet ....

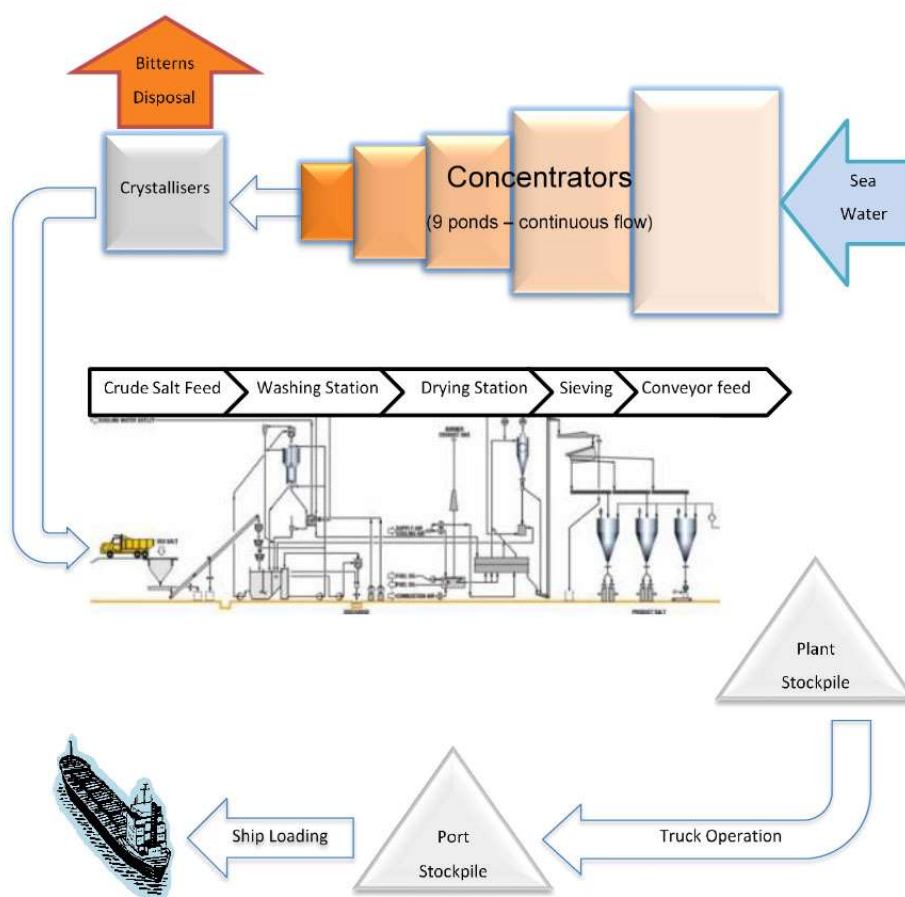


Figure 13. The simplified processing route for extracting and cleaning salt from seawater as proposed for the Mardie Salt Project. (Source: Company).

### Salt Demand Forecasts and Recent Salt Prices

Roskill forecasts dramatically rising salt consumption, particularly in Asia and associated with increasing chloralkali production in Asia (see Figure 14).

Asian salt demand is expected to increase by +60 Mtpa from 2016 to 2026....

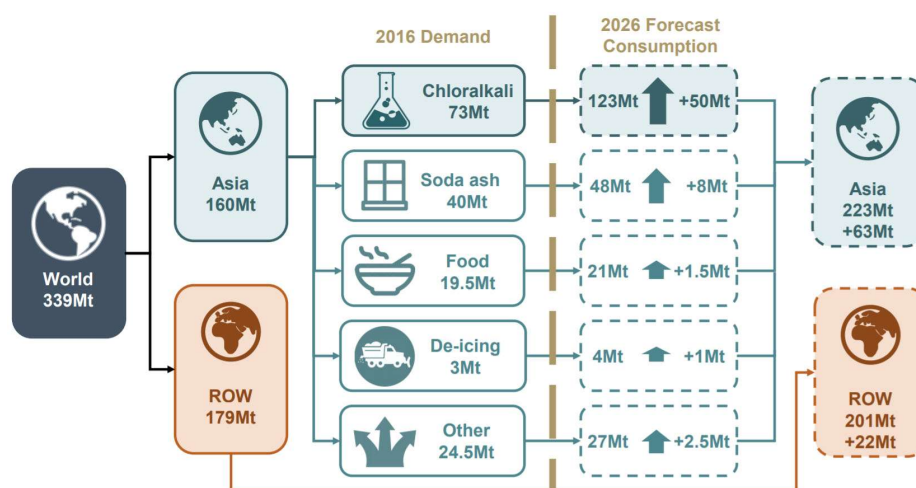


Figure 14. World salt demand is expected to increase by 85Mt by 2026 with chloralkali production dominating this demand increase. (Source: Roskill).

Meanwhile salt prices have recently trended lower but are expected to stabilise before moving higher over the medium term.



Salt prices have trended lower but expected to stabilise ....

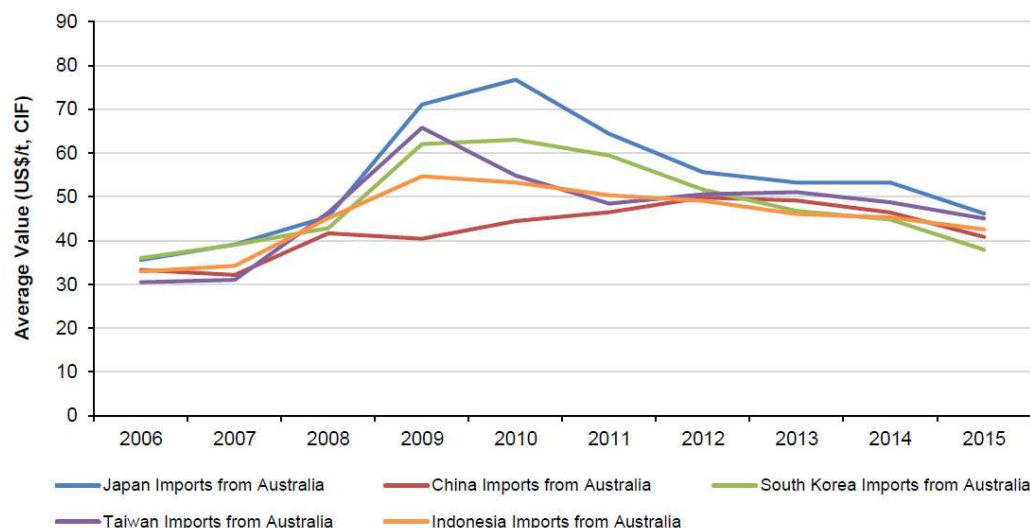


Figure 14. World salt prices have recently trended lower but are now expected to stabilise before trending higher in the medium term. (Source: Roskill).

### Value Realisation with the Mardie Salt & SOP Project

A credible partner will ratify the project value...

BCI's strategy for the Mardie Salt and SOP project is to secure a partner following the announcement of the results of the Pre-Feasibility Study which are likely to demonstrate a robust salt and SOP project. This partner is likely to bring both financial resources and industry experience to the project.

The bullish outlook for the salt market is also likely to underpin the project as while salt (and also SOP) forecast supply and demand fundamentals indicate increasing price trends, it is potential project partners and not market investors who will have knowledge of these forecast trends.

Nevertheless, the announcement of a positive pre-feasibility study in June 2018 will be another catalyst for the market to factor an increasing proportion of the NPV<sub>10%</sub> \$290m project into the share price.

In terms of a valuation, we have compared other ASX listed companies with SOP projects and project study parameters released by these companies to the market. The most salient ratio appears to be the market capitalisation of each company relative to the Pre-tax NPV of its project as outlined in Figure 16 and which averages 11% across the group but is also higher for projects with completed prefeasibility studies in comparison to completed scoping studies.

Company	Status	Market Cap (A\$m)	Ratio Market Cap to NPV	Project NPV (Pre-tax, A\$m)	Study Capex (A\$m)	SOP Throughput (ktpa)
SOP Only Peers						
Agrimin	PFS (May 18)	135	14%	974	545	426
Kalium	PFS (Oct 17)	68	18%	388	150	150
Reward	PFS (May 18)	27	6%	460	407	407
Aus Potash	Scoping (Mar 17)	24	5%	500	300	300
Salt Lake Potash	Scoping (Aug 16)	95	N/A	Not reported	400	400
BCI - Mardie	Scoping (Jul 17) Salt only	15	4.0%	380	255	3.5 Mtpa Salt

Figure 16. A relative value of the Mardie salt and SOP project based on SOP peer comparison.

The Mardie Salt project is only at scoping study stage and therefore we have conservatively used a 4% ratio of the market capitalisation of the SOP company to the SOP project pre-tax NPV ratio to



apply to the Mardie project. This indicates a value of A\$15m for the Mardie salt and SOP project using data in the scoping study reported in 2017. However, a positive pre-feasibility study is likely to drive a rerating as this ratio increases towards the average ratio associated with pre-feasibility studies in Figure 16.

As one of the options, BCI has commented that it may look at an IPO for this project. We are unsure as to whether this is right approach given the esoteric nature of salt production and often lack of transparency of project returns. However, in combination with the participation of an industry player who provides cash for the feasibility study will go a long way to demonstrating the real value of this project to the market.

### **Iron Valley – Royalty Cash Flow**

With previous iron ore transactions BCI has secured a number of royalties and the most important being the royalty from its Iron Valley mine.

Mineral Resources (ASX Code: MIN) operates the Iron Valley mine with BCI receiving an attractive royalty but retaining ownership of the tenements and remains responsible for paying third party royalties.

The location of the Iron Valley Operations is presented on Figure 1. The. It is a simple operation producing an average 50% lump versus fines direct shipping ore (“DSO”) which is hauled 330 km by road trains to the Utah Point port near Port Hedland. The project has a potential mine life of 15 years at the current 8 Mtpa production rate.

*The tenements are held by BCI but the mine is operated by Mineral Resources.....*



Figure 17. Iron Valley Operations (Source: Company)

*A royalty is payable to BCI based on FOB sales....*

The royalty calculation is complex as BCI Minerals receives a royalty based on FOB sales at Utah Point but the total royalty has to cover third party royalties such as the State Government, Native Title and Private Royalties with a net margin retained by BCI.

In FY17; BCI reported attributable revenue of A\$63.5m and after payment of third party royalties, reported an EBITDA of A\$18.3m based on shipments of 8.0 Mt.

Mineral Resources expects production and sales at Iron Valley to continue at recent volumes but also expects the discounting of low quality ores to continue in foreseeable future. Its strategy has been to increase the proportion of lump sales relative to fine sales to maximise revenue in the short term but this will be unsustainable over the longer term.

*Production is expected to continue at similar volumes....*

However, an innovation that could have a significant impact on production rates and FOB operating margins is the potential introduction of a new ore transport system called BOSS.



## Bulk Ore Shuttle System (BOSS)

Mineral Resources strategy to create a sustainable iron ore business has been to drive down costs and which includes ore transport or truck haulage costs.



*Bulk Ore Shuttle System (BOSS) has low capex and opex compared to trucking.....*

*It is a fully automated system.*

*Implications for BCI are two-fold:*

*First is a potential doubling of production and hence BCI's royalty revenue...*

*The second is the application of BOSS to Buckland and elsewhere...*

Figure 18. The Bulk Ore Shuttle System (BOSS) (Source: Mineral Resources)

The system operates with fully automated shuttles, each with a 120-tonne payload and are driverless. They operate on a suspended narrow gauge lightweight rail system and utilise hybrid powered electric motors combining batteries with reciprocating gensets.

Mineral Resources plans to install 330 km of this track from the Iron Valley mine and a fully automated port receival stockyard. The capacity of a new BOSS network is 30 to 50 Mtpa and it could be available as a multi-user infrastructure.

Importantly the system has a relatively low capital requirement and all-in FOB costs are estimated at less than US\$20/tonne and which could lead to BOSS and associated port infrastructure users to move to low cost quartile positions.

Mineral Resources is well advanced with the project with the construction of a demonstration track expected to be completed by the end of CY 2018. If this is successful it plans to commence construction in 1H CY 2019 with construction having a relatively short 18-month timeframe.

The implications for BCI are twofold:

- Implementation of BOSS will enable the expansion of Iron Valley to a 15 Mtpa production rate which would have a direct flow-on effect to BCI with the doubling of its royalties it is currently receiving (assuming similar iron ore price and exchange rate)
- BCI and future partners may apply BOSS to the Buckland Iron Ore project and dramatically improve the economics of this project by decreasing the ore transportation costs now allocated to long-haul trucking.



## **BCI – Our Financial Forecasts**

Breakaway Research has modelled BCI's royalty cash flow based on our forecast iron ore prices and a flat AUD/USD exchange rate and these are presented at the end of the report including the iron ore price and exchange rate assumptions.

The Company's policy on expensing a significant proportion of its capital spend leads to a relatively subdued earnings profile.

## **Other Projects**

BCI has other projects which contribute value to the Company but are lower profile. These are summarised below.

### **Carnegie Potash Project**

*Carnegie Potash Project is a joint venture with Kalium Lakes Limited...*

This potash exploration project is located approximately 220 km north-east of Wiluna and comprises one granted exploration licence and two exploration licence applications covering a total area of approximately 1,700 km<sup>2</sup>. The project is prospective for hosting a large sub-surface brine deposit which could be developed into a solar evaporation and processing operation that produces sulphate of potash ("SOP").

BCI has entered into a joint venture entered with Kalium Lakes Limited ("Kalium") over the Carnegie Project. Under the terms of the Agreement, the parties will form an unincorporated joint venture and BCI has the right to earn up to a 50% interest in a sequentially staged programme by sole-funding up to \$10.5 M.

Kalium is developing its own Beyondie potash project and BCI believes that the intellectual property Kalium has been acquiring through its feasibility work on this project will assist in fast tracking work on the Carnegie Project.

On-site exploration activities commenced at the Carnegie Project in November 2017 and a scoping study is being fast-tracked and with completion later in 2018. The project has a 950 km trucking distance to port and the market will focus on progress with Kalium's development of its Beyondie project before it is likely to allocate significant value to BCI for its interest in Carnegie.

### **Other Exploration Projects**

BCI is actively exploring several exploration properties which prospective for commodities ranging from gold, base metals to lithium as well as iron ore. These are in the Pilbara and Murchison regions of Western Australia.

*The Marble Bar gold project is surrounded by competitor prospects....*

The most important project in our view is the Marble Bar Gold Project and which is near Novo Resources' Talga Talga prospect and covers Archean greenstone on the margin of the Mt Edgar Granite (see Figure 19). The Company notes that the sheared greenstone on the margin of the granite is host to numerous historical gold mines, deposits and prospects including Warrawoona (Calidus Resources), Comet (Haoma Mining), Bamboo Creek (Haoma Mining) and Razorback (privately-held) as well as Talga Talga.

BCI's gold exploration focus is on the northern part of the project area between the Talga Talga and Razorback prospects, where two gold trends with a total strike length of 15km have been identified, and more than 350 gold nuggets and rocks with visible gold have been discovered on BCI tenements by a prospector during 2016 and 2017.

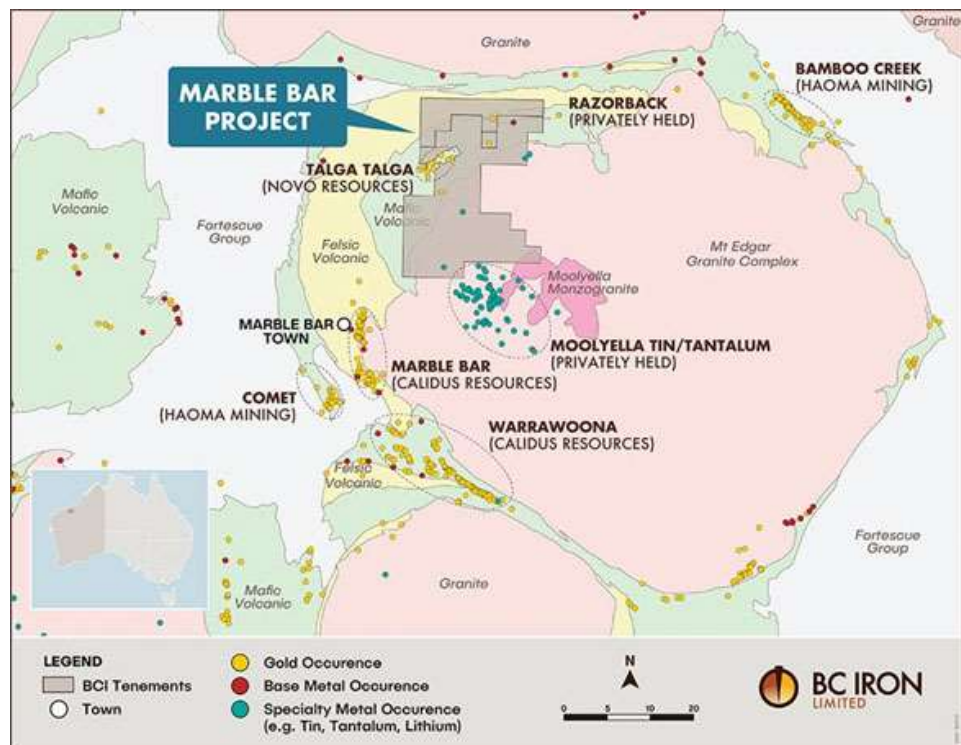


Figure 19. Location of the BCI's Marble Bar project and other gold projects in the area. (Source: Company).

The southern part of the Marble Bar Project is located immediately north of the historic Moolyella tin/tantalum mining area and a Company review of previous exploration indicates that the area is also prospective for lithium with several pegmatites identified with lepidolite and spodumene. These pegmatites trend north to south and may extend onto BCI's tenements.

Previous exploration by BCI covering a small area in the southern end of the tenements identified a lithium soil anomaly and returned rock-chip grades of up to 1.5% Li<sub>2</sub>O. BCI is completing a more wide-spread mapping, rock-chip sampling and soil sampling programme, covering the prospective areas on the southern part of the tenements.

*There may also be lithium present....*

Other projects within the BCI exploration portfolio include Black Hills which is prospective for conglomerate-hosted paleoplacer gold as well as volcanic-hosted massive sulphide base metals (zinc and copper): It also includes the Maitland project which contains a magnetite iron ore Mineral Resource of 1,106Mt at 30.4% Fe and the Peak Hill tenements which cover the prospective Narracoota Formation which has the potential to host volcanic massive sulphide base metals (copper) and shear-hosted gold mineralisation.

### Other Royalty Agreements

Apart from the Iron Valley royalty cash flow, BCI has three other royalty agreements listed below. While royalties from these agreements are entirely dependent on third party activities with these activities dependent on the future iron ore price, the combination of the agreements provide BCI with additional leverage to higher iron ore prices in the future.

*BCI has three other royalty agreements....*

**Nullagine Royalty** - In March 2017, BCI completed the sale of its 75% interest in the Nullagine Joint Venture to Fortescue Metals Group Limited for \$1 plus an ongoing royalty on all future iron ore mined from the Nullagine tenements.

**Koodaideri South Royalty** – This forms part of the larger Rio Tinto proposed Koodaideri mine in the Central Pilbara. BC Iron is entitled to a royalty of 2% of FOB revenue on any ore mined from the Koodaideri South project area. At the time of sale to Rio Tinto, Koodaideri South had Mineral Resources of 106Mt at 58.6% Fe.



**Extension Royalty** - The Extension Project is owned by Australian Aboriginal Mining Corporation Limited ("AAMC"). BCI is entitled to a \$1.75M cash payment 90 days after production commences and a royalty of 1.25% to 2.50% of FOB revenue on all iron ore produced.

### Market Capitalisation & Enterprise Value

The market capitalisation of BCI Minerals is A\$59.2m which is fully diluted to \$62.2m with the allocation of 19.8m performance rights.

The Company had cash reserves of \$17.5m reported as at 31 March 2018 and no debt. Adjusting the market capitalisation for this cash position means that the enterprise value of the Company is a \$44.7m (See Figure 20).

Cash reserves at \$17.5m....

BCI's enterprise value is only \$44.7m....

Parameter		Value
Share price	A\$	0.15
Shares issued	m	395.0
Market capitalisation (undiluted)	A\$m	59.2
Performance Rights converted	m	19.8
Market capitalisation (fully diluted)	A\$m	62.2
<b>Less</b>		
Cash at 31 Mar 2018	A\$m	17.5
<b>Add</b>		
Debt	A\$m	0.0
<b>Enterprise value</b>	<b>A\$m</b>	<b>44.7</b>

Figure 20. BCI Mineral's market capitalisation and enterprise value.

The Company has issued employees with performance rights and these are summarised in Figure 21. The shares are allocated if the share price exceeds the target price as the test date.

The Company has issued performance rights....

Test Date	Number issued	Target Price
30-Jun-18	802,271	
30-Jun-18	2,000,000	
30-Jun-18	800,000	
30-Jun-18	1,200,000	
30-Jun-18	3,300,000	
30-Jun-18	500,000	
30-Jun-18	2,200,000	\$0.20
30-Jun-18	1,000,000	
30-Jun-19	2,000,000	
30-Jun-19	2,450,000	
30-Jun-19	2,000,000	\$0.20
30-Jun-19	1,500,000	
<b>Total</b>	<b>19,752,271</b>	

Figure 21. Issued Performance Rights. Note that not all target prices have been disclosed. (Source: Company).



## **BCI Minerals Director Backgrounds**

*The Board is experienced in iron ore projects....*

The Board comprises a team of non-executive directors along with executive MD Alwyn Vorster. Encouragingly, the members have very solid experience in iron ore and other mining projects as well as a variety of technical and commercial skills ranging from project development, acquisitions, supply logistics and iron ore marketing, particularly to Chinese customers.

### **Mr Brian Francis O'Donnell** **Non-Executive Chairman**

Mr O'Donnell is Director, Finance and Investments for the Australian Capital Equity Pty Limited group, which includes the company's largest shareholder, Wroxby Pty Ltd. Brian is a director of various ACE group companies, including companies active in the agricultural, advertising and investment sectors, in Australia and China. He is also a non-executive director of ASX-listed Capilano Honey Limited, and The Guide Dog Foundation Pty Ltd (WA). He is a former director of Iron Ore Holdings Limited, Coates Group Holdings Pty Ltd, WesTrac Pty Ltd, Landis & Gyr AG, Fremantle Football Club Ltd and YMCA of Perth Inc. Brian is a Fellow of the Institute of Chartered Accountants, and has 31 years' experience in the finance and investment industry.

### **Mr Alwyn Vorster** **Managing Director**

*MD Alwyn Vorster is ex-Iron Ore Holdings....*

Mr Vorster commenced as Chief Executive Officer of BCI in May 2016 and was appointed as Managing Director in September 2016. He has more than 25 years' experience with numerous mining houses in technical and commercial management roles covering the total supply chain from mine to market for iron ore, coal and other minerals.

He has most recently been employed as Group Executive Mining at Australian Capital Equity, and other recent roles include Chief Executive Officer of API Management, the company responsible for developing the multi-billion dollar West Pilbara Project; and Chief Executive Officer and Managing Director of Iron Ore Holdings Ltd.

Mr Vorster is a non-executive director of Volt Resources Ltd and a board member of the RSPCA WA.

### **Mr Michael Blakiston** **Non-Executive Director**

Mr Blakiston is a partner in Gilbert + Tobin's Energy and Resources group. He has over 30 years' experience gained across a range of jurisdictions. Michael advises in relation to asset acquisition and disposal, project structuring, joint ventures and strategic alliances, development agreements and project commercialisation, capital raisings and company merger and acquisitions. Michael has served on numerous ASX listed companies and not-for-profit boards and is currently the Chairman of Precision Opportunities Fund Ltd, a specialist small to medium cap fund.

### **Ms Jennifer Bloom** **Non-Executive Director**

Ms Bloom has an extensive business background with experience in the private and public sector and is currently the Deputy Chair of the Waste Authority Western Australia. Ms Bloom held senior positions with Ansett Australia leading high level change projects across various areas of the business including major operational business realignment. Ms Bloom was seconded to the Victorian Government in 1997 and led the whole of government response to the sale of second tranche airports by the Federal Government.



Ms Bloom has owned and operated successful businesses in the Kimberley and was Councillor and Deputy Shire President for the Shire of Broome from 2009 to 2014 and an independent director of an Aboriginal corporation from 2008 to 2011. During her time as a Councillor Ms Bloom was a member of the Joint Development Assessment Panel that included the application for the development of an LNG Processing Precinct within the Shire of Broome. Resource sector developments for Council consideration included onshore shale oil and gas and mineral sands projects.

**Mr Martin Bryant**  
**Non-Executive Director**

Mr Bryant has extensive international business experience with a particular focus on Asia, having worked in various senior management roles in China, Vietnam and the Philippines over the last 20 years.

From 2007 to 2015, Mr Bryant was Managing Director and Chief Executive Officer of WesTrac China, a Caterpillar equipment dealer servicing China's Northern Provinces, which account for more than 60% of China's mining activity. During his tenure, Mr Bryant had direct exposure to China's domestic iron ore and steel industries. He led a significant expansion of the business and managed a major restructure to suit the economic downturn.

Prior to this, Mr Bryant held senior management positions with other equipment companies. He was Finance Director and Company Secretary for Vietnam-based V-TRAC Holdings from 1994 to 1996. From 1997 to 2003 he was Chief Operating Officer and then President for Philippines-based Monark Equipment, before rejoining V-TRAC Holdings at General Director from 2004 to 2006.

**Mr Andrew (Andy) Malcolm Haslam**  
**Non-Executive Director**

Mr Haslam is a mining professional with over 30 years of operational and senior executive experience in the Australian mining industry. He was previously Managing Director of ASX listed Vital Metals and in 2009 was appointed Managing Director of Territory Resources Ltd until late 2011 and was responsible for managing an iron ore operation exporting 2 million tonnes per annum of DSO Lump and Fines in the Northern Territory to Chinese customers. Mr Haslam stepped down as Managing Director as part of a Board restructure following the completion of the successful \$133 million on-market takeover bid for Territory Resources by Noble Group Ltd. Most recently, Mr Haslam was Executive General Manager - Iron ore, with ASX 100 company Mineral Resources Limited. Prior to these roles, he held key operational roles in the mining contracting industry in Australia.

***Breakaway's View***

The acquisition of the Kumina Tenements late last year has proved a game changer with recent exploration success identifying high grade iron ore mineralisation with a maiden resource scheduled for release in June 2018. These tenements are strategically located and have the dual value in either underpinning the economics of the Buckland Iron Ore Project or separately, as value to a third-party producer in the region as an acquisition target.

The Buckland Iron Ore Project is a large scale – capital intensive project and is in line with other BCI Mineral's projects including the Mardie Salt and SOP Project, Cape Preston East Port development and less advanced, Carnegie Potash Project. The value of these projects is highly discounted in the current BCI share price and investors will look to value appreciation as this discount diminishes and the market gains confidence that the projects will move forward.

The significant factor that will drive this outcome is the ability and skill of BCI's management team negotiate attractive joint venture partners on these projects or realise project value through a

*Kumina is becoming a game changer...*

*Market is discounting BCI's other assets...*



tangible deal which provides a project 'see-through' valuation. *Breakaway Research* believes that no-one in the market will doubt the ability and experience of the Board and Management to deliver this outcome, particularly after reviewing the Board's credentials above.

*Value will emerge with project ratification from new joint venture partners...*

Our sum of the parts valuation of 24 cents represents a 60% discount to the current share price. This discount reflects an historically confusing story given the Company's evolving strategy. An example is the uncertain way forward with the Mardie Salt and SOP Project which is like infrastructure investment with a long lead time followed by potentially attractive and reliable returns. Investors are not likely doubt these returns – they are just not sure how the project will be financed to achieve these returns including the amount of equity which may be given away to achieve them.

*Catalysts include the announcement of a resource statement on Kumina high grade iron deposits and the Mardie pre-feasibility study results....*

In summary, BCI Minerals is cheap on its asset base which has been discounted by the market. This discounting will diminish as the projects are derisked and tangible value is evident through new joint ventures or other deal structures. Part of this derisking is now occurring with the exploration success at Kumina where this project may underpin higher production rates of an average higher quality iron ore blend from the Buckland Iron Ore Project or realisation of the value of Kumina through another deal structure. We expect the announcement of a >60Mt high grade resource will add at least 5 cents to our 24 cents per share valuation. In addition, a positive pre-feasibility study on the Mardie Salt and SOP project will also add value in line with SOP peer valuations.

*Hence Breakaway Research has a Buy recommendation for BCI Minerals.*



## Appendix 1. Financial Forecasts.

Financial Year - 30 June end		FY 17	FY 18	FY 19	FY 20	FY 21	FY 22
<b>Assumptions</b>							
Iron ore fines (Platts Ind)	US\$/t cfr China	66	69	65	64	63	65
Freight	US\$ wmt		6.3	5.5	5.5	5.5	5.5
Net iron ore fines	US/t FOB WA	66.6	62.7	59.5	58.8	57.3	59.0
Iron ore lump	c/mtu		80	73	73	74	76
Average moisture level		9.5%	9.5%	9.5%	9.5%	9.5%	9.5%
Achieved price	A\$/wmt	75.1	66.2	60.3	59.6	59.4	61.2
Discount to Platts Index price			82%	78%	77%	77%	79%
AUD/USD		0.758	0.779	0.760	0.750	0.735	0.750
<b>Iron Valley</b>							
Production	000 WMT	7,878	7,596	7,600	8,000	8,000	8,000
Sales	000 WMT	7,969	6,158	7,100	7,400	8,000	8,000
Proportion lump		50%	61%	53%	50%	50%	50%
Proportion fines		50%	39%	48%	50%	50%	50%
Revenue Total	A\$m	63.50	42.91	50.31	52.12	57.96	59.01
Interest revenue	A\$m	0.55	0.59	0.25	0.28	0.36	0.47
Total revenue	A\$m	64.05	43.50	50.56	52.40	58.32	59.47
Royalties	A\$m	44.91	36.68	43.13	44.67	49.68	50.58
Adjustments	A\$m	-0.84	0.00	0.00	0.00	0.00	0.00
Operational EBITDA	A\$m	18.30	6.82	7.43	7.72	8.64	8.89
Administration expenses	A\$m	6.45	6.70	3.68	3.72	3.76	3.80
Exploration and evaluati	A\$m	2.80	13.61	2.40	2.40	1.70	1.00
Amortisation of mine prc	A\$m	2.88	2.74	2.60	2.00	2.00	2.00
Foreign exchange gain/(l	A\$m	0.08	0.00	0.00	0.00	0.00	0.00
Other	A\$m	1.75	0.00	0.00	0.00	0.00	0.00
Total costs	A\$m	58.04	59.73	51.81	52.79	57.14	57.38
EBIT	A\$m	6.01	-16.23	-1.25	-0.40	1.18	2.09
Interest expense	A\$m	0.31	0.00	0.00	0.00	0.00	0.00
Profit before tax	A\$m	5.70	-16.23	-1.25	-0.40	1.18	2.09
Tax	A\$m	0.00	0.00	0.00	0.00	0.00	0.00
NPAT	A\$m	5.70	-16.23	-1.25	-0.40	1.18	2.09
EBITDA	A\$m	6.01	-16.23	-1.25	-0.40	1.18	2.09
Add							
Exploration writeoff	A\$m	2.80	13.61	2.40	2.40	1.70	1.00
Amortisation of mine prc	A\$m	2.88	2.74	2.60	2.00	2.00	2.00
Interest received	A\$m	0.57	0.00	0.00	0.00	0.00	0.00
Less							
Tax paid	A\$m	0.00	0.00	0.00	0.00	0.00	0.00
Interest paid	A\$m	0.00	0.00	0.00	0.00	0.00	0.00
Gross cash flow	A\$m	11.86	0.12	3.75	4.00	4.88	5.09
<b>Project capex</b>							
Buckland iron ore	A\$m	0.00	5.00	1.75	0.25	0.00	0.00
Mardie Salt	A\$m	0.00	4.00	0.75	0.00	0.00	0.00
Carnegie Potash	A\$m	0.00	0.60	0.60	0.70	0.00	0.00
Total project capex	A\$m	1.72	9.66	3.10	0.95	0.00	0.00
Sustaining capex	A\$m						
Exploration & Project Ear	A\$m	0.50	10.35	0.60	0.60	0.60	0.60
Other/royalty rebate/fore	A\$m	5.15	1.59	0.20	0.20	0.20	0.20
Total capex	A\$m	7.37	21.60	3.90	1.75	0.80	0.80
Equity raised	A\$m	24.19	0.00	0.00	0.00	0.00	0.00
Dividends paid	A\$m	0.00	0.00	0.00	0.00	0.00	0.00
Debt drawn down	A\$m	0.00	0.00	0.00	0.00	0.00	0.00
Debt repayment	A\$m	-1.97	0.00	0.00	0.00	0.00	0.00
Net cash flow after finan	A\$m	26.72	-25.85	-0.15	2.25	4.08	4.29
Cumulative cash	A\$m	36.17	10.32	10.17	12.42	16.50	20.80



### **Analyst Verification**

I, Stephen Bartrop, as the Research Analysts, hereby certify that the views expressed in this research accurately reflect our personal views about the subject securities or issuers and no part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research.

### **Disclosure**

Breakaway Research Pty Ltd and the Breakaway Investment Group (AFSL 290093) may receive corporate advisory fees, consultancy fees and commissions on sale and purchase of the shares of BCI Minerals Limited and may hold direct and indirect shares in the company. It has also received a commission on the preparation of this research note.

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