

## BUXTON RESOURCES LTD (BUX)

### Ticking the boxes for a major nickel-copper discovery

Buxton (BUX) expects to commence drilling at the Double Magic Ni-Cu Project (100% BUX) in the West Kimberley region of WA upon completion of the northern wet season. We would anticipate drilling starting mid Q2 CY17, weather permitting.

The Company is initially testing a major Induced Polarisation (IP) anomaly which may prove to be related to significant Ni-Cu sulphide accumulations. The anomaly is “textbook” in regards to response, geometry, and location within a highly favourable tectonic and structural setting. In addition the target is well supported by surface geology with Ni-Cu sulphides identified in outcrop over a continuous 700m long zone, elevated PGE levels confirming primary magmatic genesis and by previous drilling.

Drilling by BUX in 2015 intersected (largely) disseminated Ni-Cu sulphides in two holes (**18m @ 0.51% Ni, 0.21% Cu** from 152m and **9.6m @ 0.59% Ni, 0.21% Cu** from 142.4m) from within the upper confines of the chargeable target. These results further support the potential existence of a large Ni-Cu sulphide system within the Merlin prospect.

### Large chargeable body, highly prospective, soon to be tested

The IP anomaly at Merlin is substantial, defined to be over 2km long, several hundred metres across and occurs at a depth range of ~60m to over 400m below surface. The eastern end of the anomaly is considered of particular interest, and may represent the magmatic feeder for the Ni-Cu system. The pipe-like body is moderately chargeable (up to ~30 mV/V), indicative of a large volume of mafic rock containing disseminated (Ni-Cu) sulphides.

The Merlin prospect has already been confirmed to contain shallow, high-grade Ni-Cu massive and net-textured sulphide mineralisation, with hole DMRC0003 drilled to test Conductor D in August 2015, intersecting **8m @ 3.05% Ni, 1.88% Cu** from 50m. Directly up-dip of this zone, detailed mapping and sampling identified a ~700m ridge of Ni-Cu sulphides in outcrop, which again validates the concept of a large mineralised system at depth.

### Exciting drill targets – Speculative Buy

BUX has confirmed exciting new drill targets at Merlin, within highly fertile mafic rocks which already host Ni-Cu mineralisation. The IP target is sizeable and has the potential to contain substantial Ni-Cu sulphides, which we would expect to be largely disseminated (if proven by drilling). The target area also has potential to contain higher grade massive Ni-Cu sulphides, which in our opinion is the big prize potential, but may take some time to delineate in economic accumulations (if present).

Panoramic Resources’ (PAN) Savannah Ni-Cu operation, which is located in a similar tectonic setting in the Kimberley provides a good example of realised value, providing the vast majority of some +A\$600m of cash generation and +A\$110m in dividends over a +12 year production history. While BUX is still a long way from this type of translated success, we see an attractive risk to reward profile from a project which is ticking the boxes towards discovery.

BUX is engaged in high risk/reward exploration, in which drill success cannot be guaranteed. We expect the Company’s current cash position (~A\$1.9m) to fund some of the planned activities, but additional funds will likely be needed if, and when, drilling is accelerated. We maintain our Speculative Buy.

20 Mar 2017

Share Price (last): \$0.270

#### Brief Business Description

Junior base metal explorer

#### Hartleys Brief Investment Conclusion

Nickel-copper discoveries made at Double Magic, West Kimberley. Formed new JV with IGO in the Fraser Range. Major IP anomaly identified at Double Magic.

#### Issued Capital

- ord shares	88.5m
- ITM ops diluted	110.8m
- fully diluted	101.2m

#### Market Cap

- ord shares	\$23.9m
- ITM ops diluted	\$29.9m
- fully diluted	\$27.3m

#### Cash (est)

\$1.9m

#### EV

- ord shares	\$22.0m
- ITM ops diluted	\$28.0m
- fully diluted	\$20.9m

#### Main Projects

Double Magic	Base Metals (Ni, Cu)
Fraser Range JV	Base Metals (Ni, Cu)
Yalbra	Graphite
Dempster	Gold, Nickel
Northampton	Base Metals

#### Board & Management

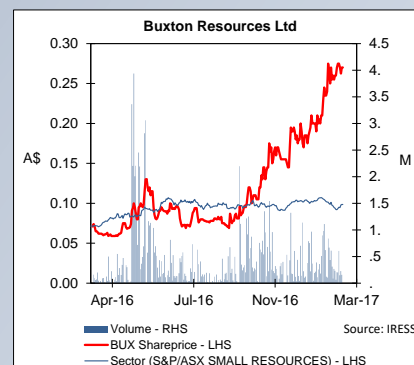
Seamus Cornelius (NE Chairman)  
Eamon Hannon (MD)

#### Top Shareholders

National Business Holdings (VU) Ltd	9.8%
Montezuma Mining Company	4.0%
Directors & Management	3.2%

#### Company Address

1st Floor, 14-16 Rowland St,  
Subiaco, WA, 6008



#### Author:

Mike Millikan  
Resources Analyst  
Ph: +61 8 9268 2805  
E: mike\_millikan@hartleys.com.au

Hartleys has provided corporate advice within the past 12 months and continues to provide corporate advice to Buxton, for which it has earned fees and continues to earn fees. The analyst has a beneficial interest in BUX shares. See back page for full disclosure.

## SUMMARY PAGE

Buxton Resources Limited		Share Price		Mar-17	
BUX		\$0.270		Speculative Buy	
<b>Key Market Information</b>					
Share Price					
Market Capitalisation					
Net Cash (debt)					
Issued Capital					
Issued Capital (fully diluted ITM options)					
Issued Capital (fully diluted)					
Options					
EV - ords					
EV - ITM options					
EV - fully diluted					
12Mth Price Target					
<b>Directors</b>					
Seamus Cornelius (NE Chairman)			1st Floor, 14-16 Rowland St,		
Eamon Hannon (MD)			Subiaco, WA, 6008		
Anthony Maslin (NED)			+61 8 9380 6063		
Feng (Frank) Xue (NED)					
Stuart Fogarty (NED)			www.buxtonresources.com.au		
<b>Company Details</b>					
<b>Top Shareholders</b>					
				m shs	%
National Business Holdings (VU) Ltd				8.67	9.8%
Montezuma Mining Company				3.58	4.0%
Directors & Management				2.84	3.2%
<b>Investment Summary</b>					
Exposure to base metal (nickel-copper) exploration in the Fraser Range and in the West Kimberley of WA.					
Multiple drill-ready targets providing strong newsflow and has already discovered potentially significant nickel-copper mineralisation.					
Portfolio of opportunities including high-grade graphite project.					
<b>Newsflow</b>					
				Project	
Q1 CY17	Target generation			Double Magic	
Q1/Q2 CY17	Drill planning and approvals			Double Magic	
Q2 CY17	Merlin target testing			Double Magic	
Q3/Q4 CY17	Review results, follow-up activities			Double Magic	
<b>Resources</b>					
	Mt	Grade	Metal	Attr.	
<b>Base Metals - no JORC resources</b>					
<b>Iron Ore - Magnetite</b>					
Inferred	103.6	26.5%	Fe	100%	
<b>Graphite</b>					
Inferred	4.0	16.2%	TGC	85%	
<b>P&amp;L</b>					
	FY2015F	FY2016F	FY2017F		
Net Revenue	na	na	na		
Total Costs	na	na	na		
EBITDA	na	na	na		
Deprec/Amort	na	na	na		
EBIT	na	na	na		
Net Interest	na	na	na		
Pre-Tax Profit	na	na	na		
Tax Expense	na	na	na		
NPAT	loss	loss	loss		
Abnormal Items	na	na	na		
Reported Profit	loss	loss	loss		
<b>Unpaid Capital</b>					
	No (m)	\$ (m)	Ave Pr	% Ord	
<b>Options</b>					
30-Jun-17	0.00	0.0	0.00	0%	
30-Jun-18	3.76	1.1	0.28	4%	
30-Jun-19	8.92	1.7	0.19	10%	
30-Jun-20	13.30	1.8	0.13	15%	
<b>Total</b>	<b>25.98</b>	<b>4.5</b>	<b>0.17</b>	<b>29%</b>	
<b>Comments</b>					
Exploration success already demonstrated at Double Magic. New targets being generated in preparation of drill-testing. IGO JV partner for Fraser Range tenure.					
Analyst: Mike Millikan					
Phone: +61 8 9268 2805					
Last Updated: 20/03/2017					
Sources: IRESS, Company Information, Hartleys Research					

*Located ~100 km north-east from Derby in the Kimberley Region of WA*

*The Double Magic – Merlin discovery hole - DMRC003 included 8m @ 3.05% Ni, 1.88% Cu from 50m*

*Ground-based activities are about to recommence, upon completion of the northern wet*

*Highly prospective, proven Ni-Cu mineralisation and still largely un-explored*

## DOUBLE MAGIC PROJECT (100% BUX)

The Double Magic Nickel-Copper Project is situated ~100 km north-east of Derby in the Kimberley Region of Western Australia.

Access to the project is via the Gibb River Road to Napier Downs Station and use of station tracks. The properties which comprise Double Magic are tenements E04/1533, E04/2026 and E04/2142, and E04/2060. BUX secured a 100% interest in the project tenements (covering ~93km<sup>2</sup>); through the issuance of ~1.67m BUX shares to the project vendors, back in April 2015. BUX also holds tenure at the Sentinel Project, to the south-east of Double Magic.

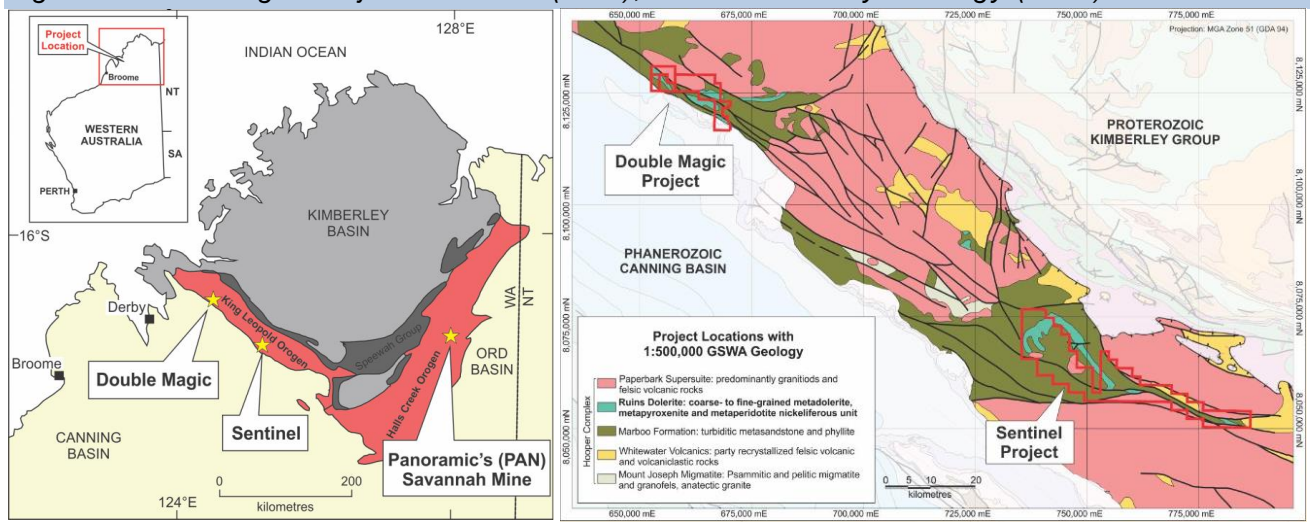
On the 10<sup>th</sup> of August 2015, BUX announced the discovery intercept (Hole **DMRC0003**) of 17m (down-hole) @ 1.78% Ni, 1.16% Cu from 46m, including **8m @ 3.05% Ni, 1.88% Cu from 50m**, while drill-testing Conductor D, within the Merlin prospect. The intersection of high-grade mineralisation from very shallow depths was a great outcome in only the third hole into the Company’s maiden drill program. The result validated and upgraded the project area and the prospectivity of the Proterozoic Ruins Dolerite (host rock).

The Merlin prospect lies within a similar tectonic setting as Panoramic Resources (PAN) Savannah Ni-Cu mine. Double Magic lies within the King Leopold Orogen, whereas, Savannah lies within the Halls Creek Orogen.

To date, BUX has completed field mapping, sampling, ground-based geophysics (EM and IP) and two phases of drilling at Double Magic. The Company is in the process of finalising a 3D geological model for Merlin, which will determine initial drill hole positions for the next round of fieldwork. A Program of Works is expected to be submitted and approved soon, allowing for drilling to commence in Q2 CY17.

A target of this size may require multiple drill holes, with down-hole EM and/or other geophysical techniques used to vector-in on the higher grade massive sulphide zones (if present). The Company’s current cash position (~A\$1.9m) provides some funding for ongoing exploration, but depending on the drill program additional funds may be sought.

**Fig. 1: Double Magic Project Location (LHS); West Kimberley Geology (RHS)**



Source: Buxton Resources Limited

The **Merlin Prospect** remains the main exploration focus at **Double Magic**, containing Ni-Cu massive sulphide discoveries, and new untested targets



Massive sulphide veins at Conductor D (LHS) and C (RHS) – over 8%Ni and 6%Ni respectively

The new IP target at Merlin is substantial with dimensions of +2km long, +300m wide over +300m deep

The eastern end of the anomaly may represent a potential magmatic feeder zone

## IP survey used to identify disseminated sulphide zones

BUX commissioned a large Induced Polarisation (IP) survey over the Merlin prospect in late August 2016. The Company decided to deploy IP at Double Magic because previous exploration recognised that the main target type (primary magmatic sulphides) was not easily detectable by time-domain electromagnetics (EM), the only electrical survey technique applied in the region prior to the IP use.

The completed IP survey was high-powered and provided high density pseudo-3D IP and resistivity data. The IP anomaly generated from the survey is very large and corresponds to a moderately chargeable (~20 mV/V up to ~30 mV/V) pipe-like body, which occurs at a depth range of ~60m to over 400m below surface.

A review of previous drilling (BUX 2015) over the new significant IP target, highlights that only two drill holes have intersected this anomaly, with both holes reporting Ni-Cu sulphides (largely disseminated) of:

- **18m @ 0.51% Ni, 0.21% Cu** from 152m and
- **9.6m @ 0.59% Ni, 0.21% Cu** from 142.4m.

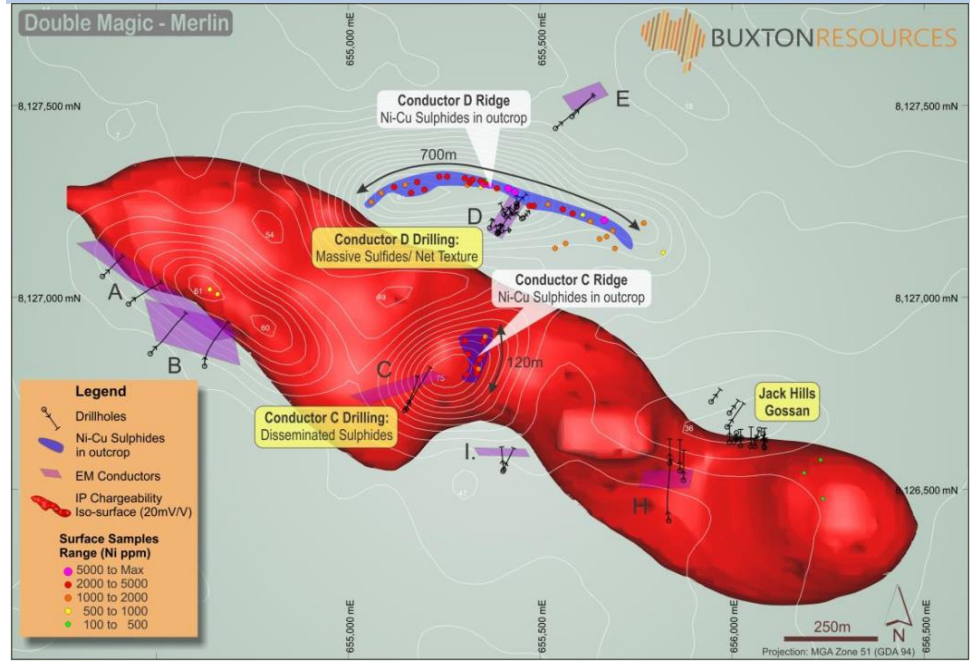
These drill results are consistent with the latest interpretation that this IP anomaly represents a large volume of mafic rock, considered highly prospective for accumulations of Ni-Cu sulphides. The dimensions of the new target are substantial, providing an exploration focus area of +2km, over several hundred metres across and down to depths of 500m, but within 60m from surface in parts. The eastern end of the anomaly is considered of particular interest, and may represent the magmatic feeder for the Ni-Cu system.

A geological explanation for this anomaly is:

- Mafic rock with variable grade Ni-Cu sulphide mineralisation – *obviously the preferred outcome, and supported by drilling (but only 2 holes).*
- Disseminated magnetite within later mafic rocks, or within surrounding schists – *however no magnetic response from detailed magnetics.*
- Some other mass of chargeable rock of an unexpected nature – *unknown.*

BUX's geophysical consultants (Southern Geoscience), has interpreted the large chargeability anomaly to have three discrete internal zones, two isolated features to the east and a longer, broader feature to the west, with potential structural influences observed. The IP anomaly remains well located within a proven mineralised area, beneath known EM conductors, which have been found to correspond to Ni-Cu sulphide accumulations.

**Fig. 2: Merlin Plan View – IP anomaly, drilling and sampling**

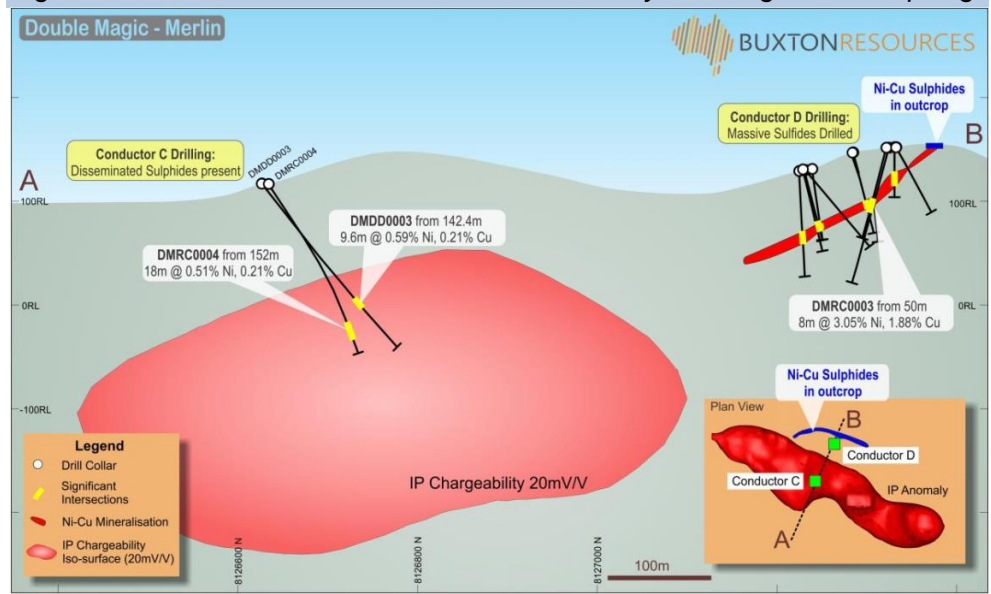


Source: Buxton Resources Limited

Mapping and sampling in 2016 identified a 700m long zone of disseminated Ni-Cu sulphides

The IP anomaly corresponds to a moderately chargeable (~20 mV/V up to ~30 mV/V) pipe-like body, which occurs at a depth range of ~60m to over 400m below surface

**Fig. 3: Merlin Cross Section – IP anomaly, drilling and sampling**



Source: Buxton Resources Limited

The eastern end of the anomaly may represent a potential magmatic feeder zone for the Ni-Cu mineralisation; requires drill-testing

Key findings from the analysis of PGE concentrations were the elevated Os, Ir and Ru levels which are only present in magmatic systems, suggestive of a primary mineralised source

### PGE analysis highlights magmatic origins

A range of mineralisation styles (disseminated, net textured/matrix and massive sulphide) were analysed for PGE concentrations, with the results confirming a primary magmatic origins for the Ni-Cu sulphide mineralisation. Samples selected were from surface and diamond core (mineralised) samples analysed for a full suite of PGE elements (Os, Ir, Ru, Rh, Pt and Pd).

Key findings were the elevated Os, Ir and Ru levels which are rather immobile PGEs only present in magmatic systems, suggestive of a primary mineralised source. This adds an additional layer of confidence to the interpretation that the Double Magic

Project hosts a primary magmatic mineralising system with good potential to host significant accumulations of Ni-Cu sulphides.

**Fig. 4: Merlin - PGE Results from Selected Mineralised Styles**

Sample	Pd (g/t)	Cu (%)	Pt (g/t)	Rh (g/t)	Ru (g/t)	Ni (%)	Ir (g/t)	Os (g/t)	PGE (g/t)	Description
33589	0.255	0.13	0.347	0.034	0.041	6.35	0.020	0.013	0.71	Massive
BRC3385	0.053	1.00	0.016	0.008	0.018	3.22	0.007	0.004	0.10	Net/Matrix
33590	0.035	0.19	0.026	0.001	0.003	0.47	0.002	0.001	0.07	Disseminated
33648	0.020	0.25	0.025	0.001	0.003	0.73	0.002	0.001	0.05	Disseminated
BRC3683	0.028	0.23	0.027	0.002	0.006	0.56	0.002	0.001	0.07	Disseminated

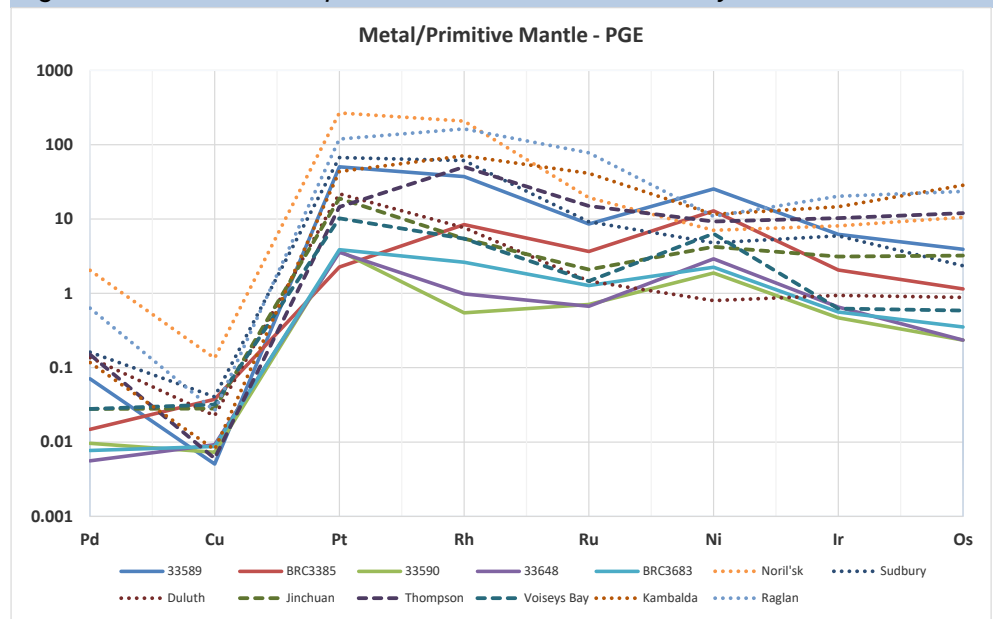
Source: Buxton Resources Limited

*We would expect nickel-copper deposit(s) if proven with the Double Magic project area to have desirable low MgO concentrates*

Sample 33589 represents a massive sulphide zone at a depth of ~144m, which graded an impressive 6.4% Ni. The net textured/matrix sulphide sample (BRC3385) contained 3.2% Ni and ~1% Cu, which compares to three disseminated samples which grade from 0.47% Ni to 0.73% Ni, 0.19% Cu to 0.25% Cu, which provides an average nickel to copper ratio of 2.6:1 (Ni:Cu). Interesting to note Savannah (PAN) has nickel to copper ratio of 2.2:1 (Ni:Cu) and Nova (IGO) has a nickel to copper ratio of 2.5:1 (Ni:Cu).

Both Savannah and Nova are hosted in a geotectonic setting consisting of Precambrian tholeiitic mafic-ultramafic intrusions emplaced in rift zones of Proterozoic orogens. Savannah has been dated to be 1844Ma, with the Ruins Dolerite having a similar intrusion age of ~1861Ma. Due to the mafic nature of host rock we would anticipate a high Fe/MgO ratio for any potential concentrates generated from Double Magic considered highly desirable for nickel smelters.

**Fig. 5: Merlin comparison to selected nickel systems**



*Some selected nickel system for comparison – note data for Nova or Savannah (Sally Malay) not found*

Source: Modified after Naldrett 2004, Leshar 2015

## RISKS

Key risks for BUX include making an economic discovery and obtaining funding for ongoing exploration. Weather, land access, drill rig availability, retaining key people are all risks.

*Fig. 6: Key Risks*

Assumption	Risk of not realising assumption	Downside risk to share price if assumption is incorrect	Comment
Funding for ongoing exploration	Med	Med-High	We estimate BUX has a current cash position ~\$2.0m. The Company has a number of options to raise additional funds for future exploration, including new equity issuances and potential new joint venture deals. The Company operates under a lean corporate structure (low cost base). The Company is funded for some planned exploration drilling in 2017.
Discovery Success	Med-High	Med	The Company has confirmed a new Ni-Cu sulphide discovery but with only a few holes into mineralisation, size and overall grade cannot be determined (economic viability is unknown). BUX's management team has a high level of technical expertise and will now commence a full technical review of data prior to planning the next phase of exploration, which does provide some level of comfort in the program(s) ahead.
Commodity Prices	Med	Med-High	The projects remain highly sensitive to commodity price movements and sentiment. Current exploration focus is nickel, copper and gold.
<i>Conclusion</i>	<i>At this stage we consider the assumptions have a medium to high risk of not being achieved. At this stage we have no valuation for BUX, but the Company's extensive project portfolio with high prospectivity and low current market cap, implies the Company is undervalued.</i>		

Source: Hartleys Research

# HARTLEYS CORPORATE DIRECTORY

## Research

Trent Barnett	Head of Research	+61 8 9268 3052
Mike Millikan	Resources Analyst	+61 8 9268 2805
John Macdonald	Resources Analyst	+61 8 9268 3020
Paul Howard	Resources Analyst	+61 8 9268 3045
Aiden Bradley	Research Analyst	+61 8 9268 2876
Michael Scantlebury	Junior Analyst	+61 8 9268 2837
Janine Bell	Research Assistant	+61 8 9268 2831

## Corporate Finance

Dale Bryan	Director & Head of Corp Fin.	+61 8 9268 2829
Richard Simpson	Director	+61 8 9268 2824
Paul Fryer	Director	+61 8 9268 2819
Ben Crossing	Director	+61 8 9268 3047
Ben Wale	Associate Director	+61 8 9268 3055
Stephen Kite	Associate Director	+61 8 9268 3050
Scott Weir	Associate Director	+61 8 9268 2821
Rhys Simpson	Manager	+61 8 9268 2851

## Registered Office

### Level 6, 141 St Georges TcePostal Address:

PerthWA 6000 GPO Box 2777  
Australia Perth WA 6001  
PH:+61 8 9268 2888 FX: +61 8 9268 2800  
www.hartleys.com.au info@hartleys.com.au

*Note: personal email addresses of company employees are structured in the following manner:firstname\_lastname@hartleys.com.au*

## Hartleys Recommendation Categories

Buy	Share price appreciation anticipated.
Accumulate	Share price appreciation anticipated but the risk/reward is not as attractive as a "Buy". Alternatively, for the share price to rise it may be contingent on the outcome of an uncertain or distant event. Analyst will often indicate a price level at which it may become a "Buy".
Neutral	Take no action. Upside & downside risk/reward is evenly balanced.
Reduce / Take profits	It is anticipated to be unlikely that there will be gains over the investment time horizon but there is a possibility of some price weakness over that period.
Sell	Significant price depreciation anticipated.
No Rating	No recommendation.
Speculative Buy	Share price could be volatile. While it is anticipated that, on a risk/reward basis, an investment is attractive, there is at least one identifiable risk that has a meaningful possibility of occurring, which, if it did occur, could lead to significant share price reduction. Consequently, the investment is considered high risk.

## Institutional Sales

Carrick Ryan	+61 8 9268 2864
Justin Stewart	+61 8 9268 3062
Simon van den Berg	+61 8 9268 2867
Chris Chong	+61 8 9268 2817
Digby Gilmour	+61 8 9268 2814
Cooper Rogers	+61 8 9268 3053

## Wealth Management

Nicola Bond	+61 8 9268 2840
Bradley Booth	+61 8 9268 2873
Adrian Brant	+61 8 9268 3065
Nathan Bray	+61 8 9268 2874
Sven Burrell	+61 8 9268 2847
Simon Casey	+61 8 9268 2875
Tony Chien	+61 8 9268 2850
Tim Cottee	+61 8 9268 3064
David Cross	+61 8 9268 2860
Nicholas Draper	+61 8 9268 2883
John Featherby	+61 8 9268 2811
Ben Fleay	+61 8 9268 2844
James Gatti	+61 8 9268 3025
John Goodlad	+61 8 9268 2890
Andrew Gribble	+61 8 9268 2842
David Hainsworth	+61 8 9268 3040
Neil Inglis	+61 8 9268 2894
Murray Jacob	+61 8 9268 2892
Gavin Lehmann	+61 8 9268 2895
Shane Lehmann	+61 8 9268 2897
Steven Loxley	+61 8 9268 2857
Andrew Macnaughtan	+61 8 9268 2898
Scott Metcalf	+61 8 9268 2807
David Michael	+61 8 9268 2835
Jamie Moullin	+61 8 9268 2856
Chris Munro	+61 8 9268 2858
Michael Munro	+61 8 9268 2820
Ian Parker	+61 8 9268 2810
Charlie Ransom	+61 8 9268 2868
Mark Sandford	+61 8 9268 3066
David Smyth	+61 8 9268 2839
Greg Soudure	+61 8 9268 2834
Sonya Soudure	+61 8 9268 2865
Dirk Vanderstruyf	+61 8 9268 2855
Samuel Williams	+61 8 9268 3041
Jayme Walsh	+61 8 9268 2828

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