

Investor Presentation

Growth Opportunity with Manganese and Copper-Gold

October 2018



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Growth Opportunity with Copper-Gold and Manganese



- Bryah Resources Limited (ASX:BYH) listed on ASX in October 2017. The Company aims to advance from being an explorer to successful producer in the near term.
- Corporate Strategy is to grow the business by:
 - Fast-tracking development of manganese mining operations in the Bryah Basin to capitalise on the strong global demand for manganese;
 - Undertaking exploration for copper-gold Volcanogenic Massive Sulphide (VMS) deposits in the Bryah Basin which also hosts world class copper-gold mines (DeGrussa, Monty, Horseshoe Lights), and
 - > Undertaking exploration for gold-copper at the Gabanintha Project.

Corporate Snapshot



Capital Structure		Board of Directors & Senior Management	
ASX Code	BYH	NEIL MARSTON Managing Director & Company Secretary	Over 30 years experience in mineral exploration, capital raising, corporate governance, project management and stakeholder engagement.
Total Shares on Issue	56,350,120		
Listed Options on Issue (ASX:BYHO)*	13,500,000		
Unlisted Options on Issue**	5,500,000	LES INGRAHAM Non-Executive Director	Executive Director of AVL, highly experienced in corporate finance and investor relations.
Share Price (25 th October 2018)	\$0.10		
Market Capitalisation	\$5.6 million	STUART HALL Non-Executive Director	Geologist with extensive experience in the areas of exploration strategy, mining operations, resource/reserve
Cash Balance (as at 30 th Sept 2018)	\$1.5 million		
Shareholders			estimation & mine development.
		ROHAN WILLIAMS	Geologist with extensive experience
Top 20 Holders	72.6%	Exploration Manager	in gold and copper-gold exploration globally.
Board and Management	18.5%		
Australian Vanadium Limited (ASX:AVL)	13.3%	* Listed Options – exercise price \$0.30, expiry 31 October 2020.	
Hutton Group	5.4%	**Unlisted Options – exercise price \$0.30, expiry 30 April 2020.	

Projects Overview





Bryah Basin Project –

100% ownership over 720 km² under 11 exploration/prospecting licences, plus a 1 year option to acquire 100% Manganese Rights over additional 157 km² including the granted Mining Lease over historical Horseshoe South Manganese Mine.

Gabanintha Project –

100% ownership of Gold and Base Metal mineral rights over 202 km²

Note: AVL retains 0.75% NSR royalty and rights in V/U/Co/Cr/Ti/Li/Ta/Mn & iron ore.

Bryah Basin – Project Location



"Our belief is that the Bryah Basin is the most prospective, high grade copper belt in Australia and worthy of continued focus and exploration."

Source: Sandfire Resources NL (ASX:SFR) Annual Report 2018 p11

- Bryah Basin hosts:
 - VMS Cu/Au deposits (DeGrussa & Monty (ASX:SFR) & Horseshoe Lights),
 - Orogenic Au deposits (Fortnum, Harmony, Horseshoe-Cassidy), and
 - High-grade Manganese deposits
 Bryah's landholding covers large part of the NW Bryah Basin which is underexplored and largely untested outside of historical mining areas.



Bryah Basin Cu-Au Exploration



BRYAH RESOURCES

Exploration strategy for finding coppergold deposits in NW part of the Bryah Basin is to target the areas with the right stratigraphy (Horseshoe Lights Mine Sequence and within the Narracoota Formation) and then focus exploration efforts in those areas.

Methodical targeting being undertaken:

- Low level aeromagnetic survey,
- Ground geological reconnaissance mapping,
- Ground soil geochemistry survey,
- Low level heliborne VTEM geophysical survey,
- Ground MLEM surveys of VTEM targets, leading to
- +6,000 m RC Drilling programme which has resulted in:
- New gold discovery at Windalah
 Prospect.

Gold Discovery at Windalah Prospect

BRYAH RESOURCES

- New gold discovery at Windalah Prospect
- Mineralisation appears to be in the right stratigraphy within the "Horseshoe Lights Mine Sequence", potentially part of a VMS system.
- Thick zones of gold mineralisation recorded in 3-metre composite samples in 4 drill holes:
 - BBRC020: 27 metres (132-159m) @ 1.43 g/t Au, includes and 3m (135-138m) @ 4.16 g/t Au
 3m (144-147m) @ 6.29 g/t Au;
 - BBRC019: 21 metres (66-87m) @ 1.21 g/t Au, includes
 6m (78-84m) @ 3.52 g/t Au;
 - BBRC018: 12m (21-33m) @ 0.71 g/t Au 9m (42-51m) @ 0.46 g/t Au
 - BBRC017: 21 metres (30-51m) @ 0.14 g/t Au
- Gold mineralisation appears open along strike in both directions and also down dip



Gold Discovery at Windalah Prospect





- Significant pyrite-chlorite ± sericite alteration zone observed.
- Gold occurs within a hematite-rich
 jasperoidal chert stratigraphically above
 the pyrite alteration zone, which is
 potentially indicative of mineralisation
 being the gold portion of a Volcanogenic
 Massive Sulphide (VMS) system.
- Follow-up activities before next round of drilling :
 - Completion of laboratory analyses and reporting,
 - Down Hole Electromagnetic (DHEM) survey of cased holes,
 - Geological, geochemical and geophysical interpretation and 3D modelling.

Manganese Market Outlook



- Production dominated by South African (36%) and Australian (15%) mines.
- Approximately 90% of all Mn is used in the production of steel.
- China's crude steel monthly output hit a record high of 81.24 million tons in July 2018.
- Chinese crude steel production during January to September 2018 was 699.4 million tons, up by 6.1% YoY.
- The steel industry is forecast to maintain moderate growth, providing steady future demand for Manganese.
- 37% Mn CIF China Oct 2018 price -~US\$6.70/dmtu (~US\$248/t = A\$350/t)
- 44% Mn CIF China Oct 2018 price -~US\$7.10/dmtu (~US\$312/t = A\$440/t)



Manganese Market Outlook

- BRYAH RESOURCES
- Use in Electric Vehicles (EV) batteries is seen as potentially a significant driver for future Mn demand.
- Battery makers are looking to find alternatives, such as Manganese, to reduce the content of expensive materials in their cathodes, such as Cobalt and Nickel.
- LMO (lithium-manganese-oxide) are notable for their high thermal stability.
- NCM523 (nickel-cobalt-manganese) cathodes forecast to become the dominant cathode in EV batteries (see chart).
- NCM cathodes used in Telsa Powerwall batteries for storing energy from renewables.
- BASF aims to create *"manganese-rich"* cathodes in the longer term.



Manganese Consumption by cathode type in lithium-ion, 2017 – 2027 (mt Mn Contained) Source: Roskill

Bryah Basin - Manganese Opportunity

- Bryah Basin has a history of high-grade Mn production.
- Horseshoe Formation hosts most of the manganese deposits in the region. Bryah holds tenure over most of the Horseshoe Formation.
- Latest manganese mining occurring at the Horseshoe Flats deposit by private operators, producing +40% Mn.
 Horseshoe Flats is 800 metres from the Horseshoe South Manganese mine.
- High-grade manganese (30-50% Mn) recorded recently in rock chip sampling from:
 - >Mudderwearie/Devils Hill
 - ➢Black Hill
 - Black Caviar
 - Brumby Creek
 - ➢ Horseshoe South Manganese Mine





Manganese - Mudderwearie/Devils Hill



- Historic mining at West and East Mudderwearie
- Extensive Mn outcrop over area of ~37,000m²



Horseshoe South Mn Mine – Exploration

- Horseshoe South is the largest manganese mine in the Bryah Basin with ~1Mt of Mn ore produced from 1948 - 1969 and 2008 - 2011.
- BYH secured 1 year option to purchase M52/806 over Horseshoe South Mine and Manganese Rights over neighbouring ground covering 154 km².
- Recent rock chip sampling confirm excellent potential - samples assaying up to 48% Mn.
- Indicated Mineral Resource 437,000t @ 19.6% Mn adjacent to M52/806 southern boundary.
- Drilling planned for later in 2018 testing extensions to the existing resource.
- Existing ML => quicker process to re-start mining.



PESOLIPCES

Horseshoe South Mn Mine - stockpiles



 215,000m³ of stockpiles remain on site – assessing potential to upgrade Mn to produce a saleable product.





View of old DMS plant and manganiferous stockpiles from previous mining operations.

Manganese - Brumby Creek

BRYAH RESOURCES

- Includes the largest area of outcropping manganese identified to date - occurs at the northern end of a 2 kilometre strike length of manganese outcrops and covers an area over 100 metres wide and 250 metres long.
- Rock-chip samples graded between 32% and 39% Mn.
- Not previous drilling recorded.
- Aim is to drill test outcrop and valley fill targets.



Manganese - Brumby Creek





Brumby Creek Prospect Interpreted Geology showing sample locations & results.



Brumby Creek Prospect VTEM Imagery (VTEM18_BFz_Ch28_1vd_psc_ne)

- Magnetic and conductive manganiferous shale unit, which is co-incident with some of the manganese outcrops sampled has been identified from geophysics.
- VTEM conductive anomaly lie along the axis of the Horseshoe
 Formation syncline, adjacent to the manganiferous shale unit and generally coincides with the alignment of the creek.
- The conductive zone is interpreted to have potential for containing detrital manganese style mineralisation down slope from outcropping manganese.

Manganese - Northern Prospects





Gabanintha – Project Location

- 40km south of Meekatharra.
- ~30km to Bluebird gold mine (ASX:WGX) which is treating ~1.5Mtpa of gold ore;
- ~20km to Burnakura gold mine currently on care and maintenance
- Limited copper/gold exploration has identified mineralisation at Tumblegum South and elsewhere in the project area;
- Plan is to complete drilling sufficiently to define a mineral resource at Tumblegum South;
- Potential to be mining and treating high-grade gold ore through one of the nearby gold plants.
- First drilling programme by Bryah completed at Tumblegum South in December 2017.





Gabanintha – Tumblegum South Prospect



- Recent RC drilling programme intersected shallow, high grade gold/copper mineralisation.
- Mineralisation in multiple lodes, open in most directions.
- Follow-up 3D modelling and drill planning underway.





Gabanintha – Production Opportunity



- Australian Vanadium Limited (ASX:AVL) well advanced with this high-grade (~0.8% V₂O₅) Gabanintha Vanadium project – could well be the next Vanadium mine developed in the world.
- Cobalt, Nickel and Copper Mineral Resource estimate for the deposit recently reported by AVL. Bryah retains the mineral rights to Nickel and Copper.
- Inferred Mineral Resource of 12.5Mt containing, inter alia, 659ppm Nickel (8,200t) and 222ppm Copper (2,775t).
- Base metal sulphide mineralisation has consistently reported to the non-magnetic fraction during metallurgical testwork for the separation of the vanadium bearing magnetite.
- Excellent potential to deliver a sulphide by-product revenue stream to Bryah from the project.





Bryah Resources Limited is an exciting growth investment opportunity. It has:

- Multi-commodity focus Mn, Cu, Au;
- ✓ Potential to get into Manganese production in a short (1-2 years) timeframe;
- Excellent ground position with fresh gold discovery from first drilling programme;
- Experienced technical team;
- ✓ Well funded for exploration, and
- Strong news-flow from activities.

Contact Details



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