













## **Sorby Hills Lead-Silver Project**

Delivering Metals for a Sustainable Future

**Euroz Hartleys Rottnest Island Conference 2022** 

10 March 2022



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The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the 'JORC Code') sets out minimum standards, recommendations and guidelines for Public Reporting in Australasia of Exploration Results, Mineral Resources and Ore Reserves.

The information in this presentation that relates to Exploration Results is based on information prepared by Dr Simon Dorling. Dr Dorling is a member of the Australasian Institute of Geoscientists (Member Number: 3101). Dr Dorling has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which they are undertaking to qualify as a Competent Person as defined in the 2012 Edition of the JORC Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Dorling consents to the inclusion in the presentation of the matters based on their information in the form and context in which it appears.

Information included in this presentation relating to Mineral Resources has been extracted from the Mineral Resource Estimate dated 17 December 2021, available to view at www.boabmetals.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the Mineral Resource Estimate and that all material assumptions and technical parameters underpinning the estimates, continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the Mineral Resource Estimate.

Information included in this presentation relating to Ore Reserves, Production Targets and Financial Forecasts has been extracted from the Pre-Feasibility Report and Ore Reserve Statement dated 25 August 2020, available to view at www.boabmetals.com.au. The Company confirms that it is not aware of any new information or data that materially affects the information included in the Ore Reserve Statement and that all material assumptions and technical parameters underpinning the estimates, production targets and financial forecasts continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the Ore Reserves Statement.

### Investment rationale



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# The Proven Battery Metal

The primary component of the 12V batteries found in traditional and electric vehicles



# The Most Conductive Metal on Earth

Ideal metal for use in solar cells and the electronic components of electric vehicles.

#### Australia's largest undeveloped, nearsurface Lead-Silver deposit

Granted mining leases, EPA approved<sup>1</sup>, 150km from Wyndham Port in Western Australia.

## Low Risk Operation located in a Tier 1 Mining Jurisdiction

Initial 10-year Open cut mine plan underpinned by 92% Reserves and low cash operating cost.

1. Section 45C change proposal to be submitted to the EPA to reflect advancements 2. See Slide 25 for full Mineral Resource Estimate

#### **Impressive Project Economics**

A Pre Feasibility Study ("PFS") completed in Q3 2020 confirmed a robust project with a CAPEX payback in just 1.6 years.

#### **Fully Funded DFS Nearing Completion**

A\$8.4m cash on hand (as at 31 December 2021) to fund the Definitive Feasibility Study ("DFS") through to a decision to mine at Sorby Hills.

### Rare ASX exposure to Silver markets

Sorby Hills **53 Million Ounce Silver Resource**<sup>2</sup> is among the largest undeveloped Silver Resources located in Australia.

## Project Financing and Execution Workstreams underway

Binding Offtake Agreements expected by March 2022. Actively engaged with Government backed financing agencies and commercial lenders.

## **Corporate summary**



Capital structure (9 March 2022)					
Share Price	A\$0.35/ share				
Shares on Issue	153 million shares				
Market Cap	A\$54 million				
Debt	Nil				
Cash A\$8.4million (as at 31 December 2021)					
Options & Perf. Rights	1.7 million <sup>1</sup>				

	Top 4 Shareholders								
#	Holder Name	3 February 2022							
1	Villiers Queensland pl	10.54%							
2	Zero Nominees Pty Ltd	8.36%							
3	Citicorp Nominees Pty Limited	3.61%							
4	Brent Connolly	2.92%							



- ASX-listed base and Precious metal explorer and developer.
- Fully funded through to final investment decision expected mid-2022.
- Resource inventory<sup>2</sup> comprising
   1.5Mt of Lead and 53Moz of
   Silver.
- Top 10 shareholders hold 36% of issued capital.

<sup>1. 1.74</sup> million Performance Rights

<sup>2.</sup> See Slide 25 for full Mineral Resource Estimate

### **Board and management**



#### **Experienced Board and Management with a proven track record in exploration and development.**



**Gary Comb**Chairman

Engineer with over 30 years' experience in the Australian mining industry, with a strong track record in successfully commissioning and operating base metal mines.



**Simon Noon**Managing Director and CEO

Experienced executive with a strong background in management, finance, capital raising and operating joint ventures with mid to top tier miners in a variety of commodities.



**Richard Monti**Non-Exec. Director

Geologist with over 30 years' experience in technical, commercial, marketing and finance within the exploration and mining industry.



Andrew Parker
Non-Exec. Director

Lawyer with significant experience in the exploration and mining industry. Wealth of expertise in corporate advisory, strategic consultancy and raising capital.

#### Technical team

#### Cameron Nobbs - General Manager - Sorby Hills

Over 25 years in the Mining and Civil industries with a wealth of project execution experience including contract tendering and cost estimations for project start ups.

#### Kevin Reynolds - Project Metallurgist

Experienced metallurgist and project development manager of 30 years, covering mining and metallurgical operations, process development, feasibility studies & project execution.

#### **Simon Dorling -** Exploration Manager

Geologist with more than 26 years' experience in exploration, development and the mining of base metals, precious metals, energy minerals and industrial minerals.

## **Sorby Hills Project highlights**



#### Australia's largest undeveloped, near-surface Lead-Silver-Zinc deposit

- √ 75%/25% Joint Venture Partnership with China's largest Lead smelter and Silver producer.
- ✓ Granted pre-native title mining tenements.
- ✓ EPA Approved for Open Pit Mine and Infrastructure.
- ✓ Open Pit Reserves of 494kt Lead and 17.6Moz Silver¹ and growing.
- ✓ Located close to existing infrastructure.
- ✓ Opportunity to access hydro grid power.
- ✓ Definitive Feasibility Study well advanced with completion expected early Q2 2022
- ✓ Targeting a Final Investment Decision mid 2022.



Image: Location of the Sorby Hills Project relative to Kununurra and Wyndham Port

See Slide 25 for full Reserve Estimate

### **PFS** highlights



#### The Sorby Hills PFS released in August 2020 highlights a technically robust project with impressive economics

The PFS highlights the **low-risk** nature of the Sorby Hills Project with a **well-defined** large-scale Mineral Resource, conventional crush-mill-float processing circuit, **high metal recoveries** and **key approvals received.** 



Initial 10-Year Mine life processing 15Mt ore



50kt Lead and 1.5Moz Silver production per annum<sup>1</sup>



US\$0.40/lb Lead C1 cash cost



A\$183m Upfront Capex incl A\$20m contingency



Pre-Tax NPV<sub>8</sub> of A\$303m<sup>2</sup> and Pre-Tax 46% IRR<sup>2</sup>



1.6-year payback from first production



Average Life of Mine EBITDA A\$75m per annum

(A\$127m per annum over the first 2 years of production)

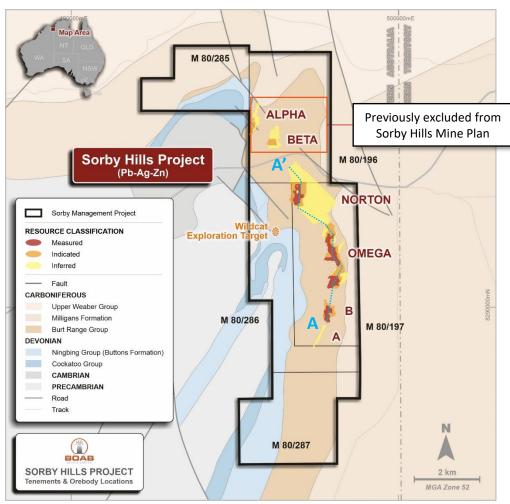
1: Life of mine average

<sup>2:</sup> NPV based on 10-year average commodity prices. Lead U\$\$0.95/lb, Silver U\$\$21.10/oz. AUD:USD FX rate of 0.70

## **High quality Mineral Resource estimate**



#### 14% Increase in Measured and Indicated Resource versus the Sorby Hills PFS



Reported at a 1.0% Pb Cut-Off (Pb Domains only).

Tonnes and Grade are rounded. Discrepancy in calculated Contained Metal is due to rounding.

Lead Equivalent calculation excludes Zinc. See Appendix page 26 for Equivalent calculation method.

The information presented above is extracted from the report entitled "Expanded Resource to Underpin Sorby Hills DFS" released on 17 December 2021 and is available to view on www.boabmetals.com

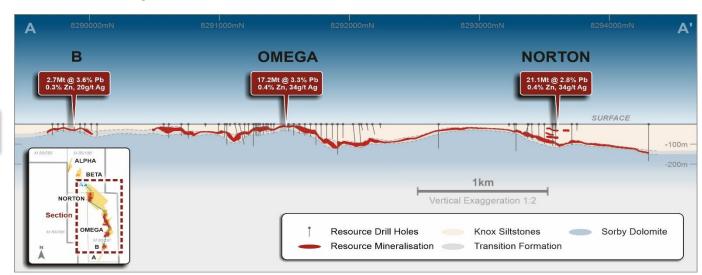


Image: Long section looking west through the Sorby Hills Resource

		Grade				Contained Metal			
Deposit	Mt	Pb	Ag	Pb Eq.	Zn	Pb	Ag	Pb Eq.	Zn
		%	g/t	%	%	kt	koz	kt	kt
Total	47.3	3.1	35	4.1	0.4	1,465	53,042	1,925	207
Measured	12.6	3.5	43	4.7	0.4	444	17,521	596	45
Indicated	11.0	3.4	34	4.4	0.4	377	12,114	482	46
Inferred	23.6	2.7	31	3.6	0.5	645	23,406	848	117

Image: Location of the Sorby Hills deposits and mining tenements relative to local geology

## Significant Resource upside potential



## Drilling continues to reveal new and extended mineralisation across the Sorby Hills deposits and prospects.

- New high grade drilling results at the Beta Deposit provide further support and confidence to the recently updated Mineral Resource Estimate at Sorby Hills.
- Beta deposit was not previously included the Sorby Hills PFS Mine Plan.
- Exceptional drilling results include:
  - SHRC\_123: 27m @ 3.47% Pb & 37g/t Ag from 34m:
    - Including 3m @ 7.04% Pb & 95g/t Ag from 35m;
    - 5m @ 5.60% Pb & 44g/t Ag from 45m; and
    - 6m @ 4.50% Pb & 49g/t Ag from 55m.
  - SHRC\_124: 17m @ 3.51% Pb & 46g/t Ag from 49m:
    - Including 8m @ 6.93% Pb & 90g/t Ag from 57m.
- Assays confirm elevated silver grades at Beta with some metre intervals recording up to 360g/t Silver (SHRC\_124 from 57m).

The positive drilling results at Beta are anticipated support on the inclusion of the Beta Deposit in the Sorby Hills DFS mining inventory

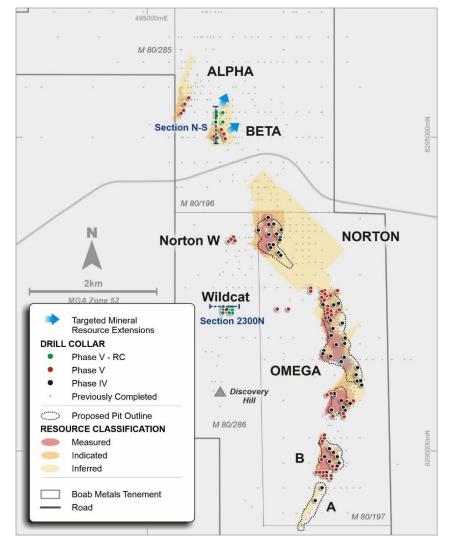


Image: Location of recent drilling across the Sorby Hills deposits

## **Enhanced metallurgical recoveries**



#### Comprehensive DFS metallurgical results to deliver uplift in metal recovery across the life of mine

Ore Type	Pb Recovery	Ag Recovery
Oxidised Ore	Up to 90%	Up to 92%
Fresh Ore	Up to 95%	Up to 87%

- Builds upon a significant body of previous work undertaken by Boab since acquiring Sorby Hills in 2018 and others dating back to 1979.
- Comprises testwork undertaken on some 1,420kg of new diamond core split into Variability Samples and Master Composites covering each deposit, ore type and timing within the mining schedule.
- Incorporates modifications based on Locked Cycle Testwork to account for closed circuit performance estimation, and conservative adjustments to account for campaign style processing.

It is anticipated that the improved metallurgical recovery results will lead to more efficient concentrate production in the DFS

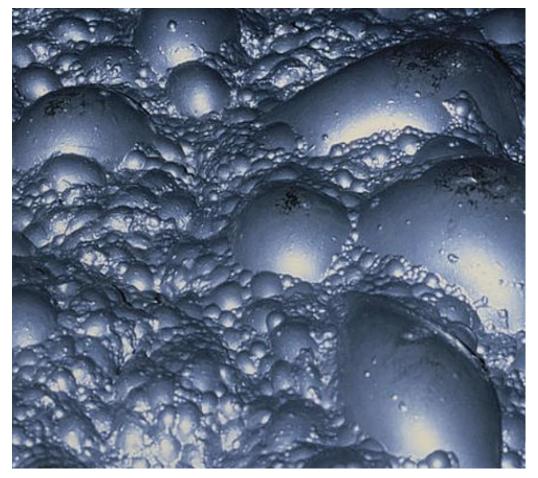


Image: Froth flotation of Lead-Silver concentrate

## Low-risk Project with significant scope for growth



## A low-risk Mine Plan underpinned by 92% Ore Reserves

Classification	Ore	Pb (%)	Pb (kt)	Ag (g/t)	Ag (Moz)
Classification	Mt	%	kt	g/t	Moz
Proved	6.8	4.1	275	53.0	11.5
Probable	6.9	3.2	219	27.6	6.1
Total	13.6	3.6	494	40.2	17.6

Reported at cut-off of 1.5% Pb, based on 2 June 2020 Mineral Resource Estimate

The **PFS Base Case** incorporated the mining of 14.8Mt of ore over an **initial 10-year mine life** from four deposits, namely Omega, A, B and southern portion of Norton.

- Mineralisation from 20m.
- Flat topography and easy free dig in first 18m.
- Life of Mine Strip Ratio of 8.0x (volumetric basis).

Ore Reserves are expected to increase on the back of a 14% increase in Measured and Indicated Resources post the PFS

## Conventional processing route producing a high-quality concentrate

• PFS adopted a Single stage crush and semi-autogenous grinding (SAG) followed by Sulphide and Oxide Flotation and concentrate thickening and filtration.

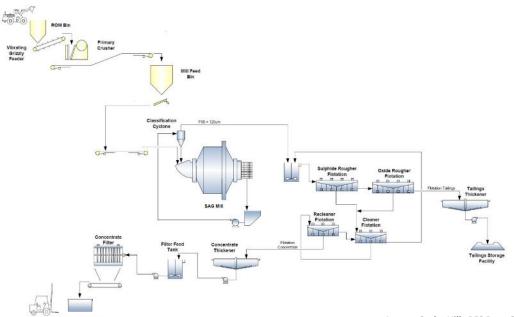


Image: Sorby Hills PFS Base Case Processing Circuit

The DFS is investigating opportunities to enhance concentrate production by increasing processing plant capacity from the 1.5Mtpa proposed in the PFS

## **Sorby Hills Definitive Feasibility Study**



#### **Updated Mineral Resource Estimate**

✓ 14% increase in Measured and Indicated Resources versus the PFS including 78% increase in Measured Resources with significant upside potential.

#### **Enhanced Metallurgical Recoveries**

Results reveal separate flotation of Oxidised and Fresh Ore will deliver **significant uplift in metal recovery** across the Life of Mine.

#### **Support for Increased Mining Inventory and Processing Capacity**

 Upgraded Resource and Metallurgical Recoveries support and increase in mining and processing capacity to deliver improved Project economics.

#### **Demonstrated Demand of Sorby Hills Lead-Silver Concentrate**

 Competitive Offtake Tender nearing conclusion with strong proposals received from a suite of international and domestic traders and smelters.

#### **Advanced Engagement with Project Financiers**

✓ **Site Visit undertaken** by leading commercial banks and the Federal Government's \$7 billion Northern Australia Infrastructure Facility ("NAIF").

Sorby Hills DFS on track for completion in early Q2 2022



## **Sorby Hills Offtake and Project Financing**



#### Advanced progress toward securing binding offtake and project finance for Sorby Hills

#### **Offtake Agreement**

- Competitive tender for Boab's share of the Sorby Hills concentrate nearing conclusion. Strong proposals have been received from a suite of international and domestic traders and smelters.
- The objective of the tender is to maximise value to Boab and secure terms that will support project financing of Sorby Hills.

Targeting Binding Offtake Agreement prior to completion of the DFS.

#### **Project Financing**

- Boab has engaged BurnVoir Corporate Finance to advise on and arrange a project finance solution for the Sorby Hills Project.
- The Company has engaged with Australia Government financing agencies Northern Australian Infrastructure Facility ("NAIF") and Export Finance Australia ("EFA"), Australia's export credit agency.
- Additionally, Boab has had ongoing positive discussions, including a site visit of Sorby Hills, with Australian and international commercial banks.

Targeting a Final Investment Decision by mid 2022.



Image: Wyndham Port (Source: Cambridge Gulf Limited)







## Sorby Hills project financier site visit



A unique opportunity to provide insight on the Project and the tangible benefit it will have on the local community



Image: Representatives from NAIF and Commercial Banks together with Boab Senior management looking out over the Sorby Hills deposit on Discovery Hill

## Development timeline providing significant newsflow



Milestone	Status		CY2022	
		Q1	Q2	Q3
Definitive Feasibility Study				
- Metallurgical Test Work Program	✓			
- Mineral Resource Update	✓			
- Final Mine and Process Plant Design	Ongoing			
- Process Plant & Infrastructure Tenders	Ongoing			
- DFS Completion				
Permitting				
Site Establishment & Early Works	Ongoing			
Main Works	Ongoing			
Offtake and Financing				
- Concentrate Offtake Tender	Ongoing			
- Debt Financing Detailed Due Diligence	Ongoing			
- Debt Financing Credit Approval Process	start Q2 2022			
- Decision to Mine	Mid 2022			
Construction				
- Commencement of Site Establishment & Early Works	Q3 2022			

# The Silver & Lead Markets

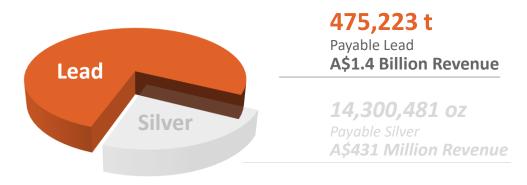


## Lead: An underrated battery metal



#### 70% of all rechargeable battery energy storage capacity worldwide is provided by lead batteries

#### **Sorby Hills PFS Revenue Split**



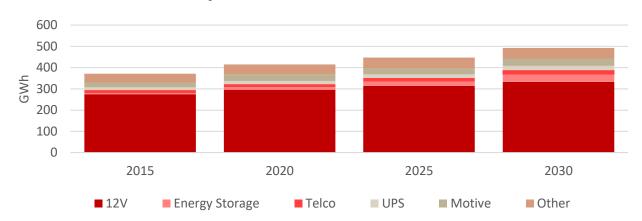
Sorby Hills Pre-Feasibility Study ASX Release 25 August 2020 - price assumptions include U\$\$2,095/t and Silver price U\$\$21.1/oz

## Lead-acid Batteries are a mature and commoditised technology making them a cheap and reliable source of 12V power for SLI, Stop-Start, safety and auxiliary functions in all types of vehicles.

 New high performance Lead battery technologies continue to be developed (e.g. Lead-crystal batteries).

Item	2020	2030	CAGR
Total Vehicles in Use <sup>3</sup>	1.5 Billion	2.1 Billion	3.7%
Total Electric Vehicles <sup>4</sup>	10 Million	245 Million	27%
% of Total Vehicles	<1%	12%	

#### **Global Lead Battery Market<sup>2</sup>**



#### Primary drivers of growth include:

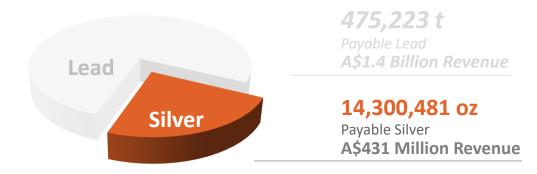
- +37 GWh continued use of 12V lead-acid batteries in the automotive industry including ICEs, hybrid and battery electric vehicles. The 12V lead battery market is forecast to grow by nearly US\$10 billion between 2020 and 2030<sup>2</sup>.
- +23.0 GWh Utility and Renewable energy storage.
- +14.6 GWh Telco back-up, UPS and motive applications.
- 1. International Lead and Zinc Study Group: www.ilzsg.org
- 2. Consortium for Battery Innovation: https://batteryinnovation.org/
- 3. Projected growth based on long term trend: https://www.oica.net/category/vehicles-in-use/
- 4. https://www.iea.org/reports/global-ev-outlook-2021/trends-and-developments-in-electric-vehicle-markets

## Silver: A precious metal with strong green credentials



#### Silver's traditional role as a storer of wealth is complemented by increasing industrial demand

#### **Sorby Hills PFS Revenue Split**



Sorby Hills Pre-Feasibility Study ASX Release 25 August 2020 - price assumptions include US\$2,095/t and Silver price US\$21.1/oz

**Silver is the Most Conductive Metal on earth** and its resistance to corrosion makes it ideal for use in solar panels, electrical contacts and printed circuit boards.

- Over 55 million ounces per year of Silver are used in the electrical connections found in all types of vehicles<sup>1</sup>.
- With a Resource containing 53 million ounces of Silver, Sorby Hills sits among the largest undeveloped Silver resources in Australia\*

#### **BML Share Price vs A\$ Silver Price**





1. https://www.visualcapitalist.com/silver-series-new-energy-in-solar-and-ev/

<sup>\*</sup>See Appendix for detailed breakdown of Silver Resources and source date

## Strategic Acquisition of Manbarrum Zinc-Lead-Silver Project



## Boab has acquired a 100% interest in the Manbarrum Zinc-Lead-Silver Project

#### **Key highlights include:**

- Manbarrum is strategically located 25km east of the Sorby Hills Lead-Silver Zinc Project;
- Mineral Resources declared at two prospects within the Manbarrum project area<sup>1</sup>;
- Conceptual open pit mining studies completed by CSA Global in 2018 identified the opportunity to improve project economics via toll treating at a future plant located at Sorby Hills; and
- 175km<sup>2</sup> of prospective tenements (including two granted mining leases) covering geology genetically related to that found at Sorby Hills allowing for an effective transfer of technical knowledge.

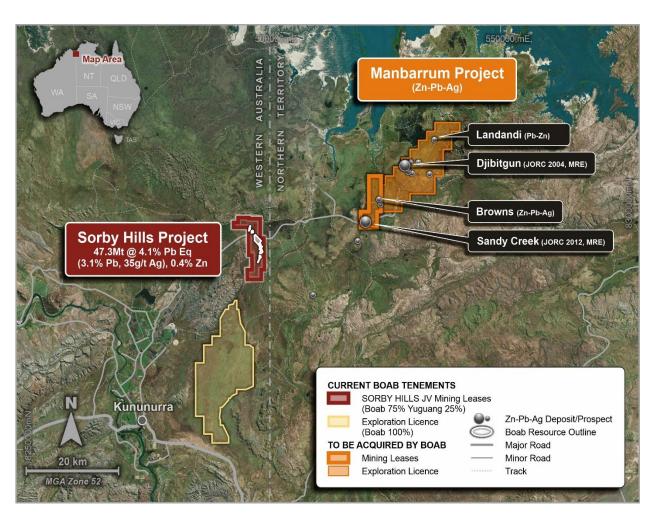


Image: Location of the Manbarrum Project relative to the Sorby Hills and Eight Mile Creek Projects.

<sup>&</sup>lt;sup>1</sup> Refer to the Todd River Resources prospectus dated 4 April 2017

<sup>&</sup>lt;sup>2</sup> Refer BML Announcement 21 July 2021



## Thank you

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Simon Noon – Managing Director & CEO



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www.BoabMetals.com



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## **Appendix**



## **Sorby Hills JV partnership**

## Boab (75% interest) Henan Yuguang Gold and Lead Co., Ltd (25% contributing interest)

- Yuguang Gold and Lead Co., Ltd ("Yuguang") is the largest Lead smelting company and Silver producer in China.
- Yuguang has fully endorsed the Company's DFS program and is contributing its 25% contribution to the DFS costs.
- Yuguang has reaffirmed their strong appetite for the Sorby Hills Lead-Silver concentrate and potentially increasing their offtake participation (currently 25%)
- Yuguang has confirmed their commitment to the development of the Project and to working constructively with Boab to ensure the Project is bankable and fully-financed.
- Joint Venture partners have agreed to accelerate the finalisation of the Sorby Hills Development and Operations Agreement to facilitate engagement with project financiers.





## Regional exploration potential



#### **Eight Mile Creek - Exploration Licence E80/5317**

Exploration Tenements **100% owned by Boab Metals** covering 217 km<sup>2</sup> of relatively underexplored tenure immediately south of Sorby Hills.

- 30 km of along-strike geology highly prospective for deposits similar to Sorby Hills.
- Native title/mineral exploration agreement has been executed.
- Structure and stratigraphic targets developed based on an interpretation of new gravity data, soil sampling and geological interpretation.
- Inaugural drill hole EMRC\_001 completed during the Phase V RC drilling campaign.
- Drilling intersected trace mineralisation.
- Importantly, drilling confirmed the existence of favourable stratigraphic reservoirs and fluid traps that may host mineralisation similar to that observed at Sorby Hills.
- Further exploration of Eight Mile Creek is planned for the next phase of drilling.

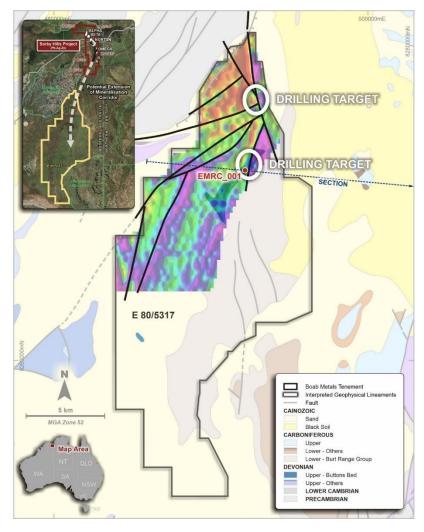


Image: BML 100% owned E80/5317 to the south of the Sorby Hills JV Project showing gravity survey results and location of the inaugural drill hole EMRC\_001.

## **Establishing deep roots within the local community**



## Boab is extremely proud to be the Naming Rights Sponsor of the Ord Valley Muster for 2022 and beyond.

- Sense of community plays a key role in economic and social well-being of stakeholders across the east Kimberley Region.
- The Ord Valley Muster has been a highlight of the Kimberley community calendar for 20 years.
- The event attracts thousands of visitors to the region to experience the stunning landscape, cultural diversity and famous Kimberley hospitality.



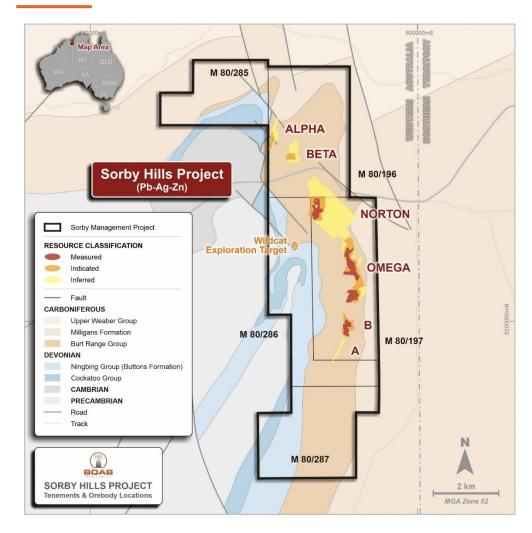




Image: Boab Managing Director and CEO Simon Noon (left) participating in the naming rights handover together with Ord Valley Muster chair Beau Robinson (centre).

### Mineral Resource Estimate - 17 December 2021





 ${\it Image: Location of the Sorby Hills deposits and mining tenements relative to local geology}$ 

		Grade				Contained Metal			
Deposit	Mt	Pb	Ag	Pb Eq.	Zn	Pb	Ag	Pb Eq.	Zn
		%	g/t	%	%	kt	koz	kt	kt
A	0.6	5.3	23	6.0	0.1	31	427	35	6
В	2.7	3.6	20	4.2	0.3	97	1,720	112	8
Omega	17.2	3.3	34	4.2	0.4	566	18,948	730	71
Norton	21.1	2.8	34	3.8	0.4	590	24,090	799	96
Alpha	1.5	3.1	64	4.9	0.9	45	2,975	71	13
Beta	4.2	3.6	43	4.8	0.4	151	5,856	202	17
Total	47.3	3.1	35	4.1	0.4	1,465	53,042	1,925	207
Measured	12.6	3.5	43	4.7	0.4	444	17,521	596	45
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Inferred	23.6	2.7	31	3.6	0.5	645	23,406	848	117

Reported at a 1.0% Pb Cut-Off (Pb Domains only).

Tonnes and Grade are rounded. Discrepancy in calculated Contained Metal is due to rounding.

Lead Equivalent calculation excludes Zinc. See Appendix page 26 for Lead Equivalent calculation method.

The information presented above is extracted from the report entitled "Expanded Resource to Underpin Sorby Hills DFS" dated 17 December 2021 and is available to view on www.boabmetals.com

## **Equivalent calculation**



# The contained metal equivalence formula is based on the Sorby Hills PFS including:

- Lead Price US\$2,095/t;
- Silver Price US\$21.1/oz;

#### **Lead Equivalent Calculations**

- Silver recovery of 80.3% (weighted average of oxide and fresh Ag recoveries); and
- Silver Payability rate of 95%.

#### **Silver Equivalent Calculations**

- Lead recovery of 93.3% (weighted average of oxide and fresh Pb recoveries); and
- Lead Payability rate of 95%.

It is Boab's opinion that all elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold. The formula used to calculate lead equivalent grade is:

Metal Eq (percent) = 
$$G_{pri}$$
 +  $(G_{pri} \times [\sum_{i} R_{i} S_{i} V_{i} G_{i}]/(R_{pri} S_{pri} V_{pri} G_{pri}))$ 

where **R** is the respective metallurgical metal recovery rate, **S** is the respective smelter return rate, **V** is metal price/tonne or ounce, and **G** is the metal commodity grade for the suite of potentially recoverable commodities (**i**) relative to the primary metal (**pri**). Metal equivalents are highly dependent on the metal prices used to derive the formula. Boab notes that the metal equivalence method used above is a simplified approach. The metal prices are based on the PFS values adopted and do not reflect the metal prices that a smelter would pay for concentrate nor are any smelter penalties or charges included in the calculation.

Owing to limited metallurgical data, zinc grades are not included at this stage in the lead equivalent grade calculation.