













# Sorby Hills Lead-Silver Project Delivering Metals for a Sustainable Future



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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**

Pb Lead

### **The Proven Battery Metal**

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

**Ag** Silver

### The Most Conductive Metal on Earth

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

Australia's largest undeveloped, near-surface 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.

### **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\$6.4m cash on hand (as at 30 June 2022) to complete Definitive Feasibility Study ("DFS") and progress to final investment decision.

### 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 2H 2022. Actively engaged with Government backed financing agencies and commercial lenders.

1. Section 45C change proposal to be submitted to the EPA to reflect advancements

2. See Slide 27 for full Mineral Resource Estimate



# **Corporate summary**

### Capital structure (15 July 2022)

**Share Price** 

A\$0.195/ share

**Shares on Issue** 

153 million shares

**Market Cap** 

A\$30 million

### Debt

Nil

Cash

A\$6.4million (30 June 2022)

**Performance Rights** 

160,000<sup>1</sup>

### **Top 4 Shareholders**

#	Holder Name	15 July 2022
1	Villiers Queensland PL	10.49%
2	Zero Nominees Pty Limited	4.45%
3	Citicorp Nominees Pty Limited	3.66%
4	Brent Connolly	2.91%

### **Share Price History**



- ASX-listed base and Precious metals developer and explorer.
- Well funded to advance Sorby Hills to final investment decision.
- Board & Management team with a proven track record in development.
- Top 10 shareholders hold 30% of issued capital.





# Sorby Hills Project highlights

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

- √ 75%/25% Joint Venture
  Partnership with China's largest
  Lead smelter and Silver producer.
- ✓ EPA Approved for Open Pit Mine and associated Infrastructure.
- Located close to Kununurra with existing infrastructure.
- Resource inventory<sup>1</sup> comprising
   1.5Mt of Lead and 53Moz of Silver.
- Open Pit Reserves of 494kt Lead and 17.6Moz Silver<sup>2</sup> and growing.
- Reserves from 20m below surface.

- Granted mining tenements.
- Port Access agreement executed.
- Agreement signed for access to hydro grid power.





Image above: Location of the Sorby Hills Project relative to Kununurra and Wyndham
Image left: Ord river hydro power station

✓ Definitive Feasibility Study well advanced with completion expected 2H 2022.



# **PFS** highlights

### The Sorby Hills PFS (Aug 2020) outlined 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 2: NPV based on 10-year average commodity prices. Lead US\$0.95/lb, Silver US\$21.10/oz. AUD:USD FX rate of 0.70



# 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

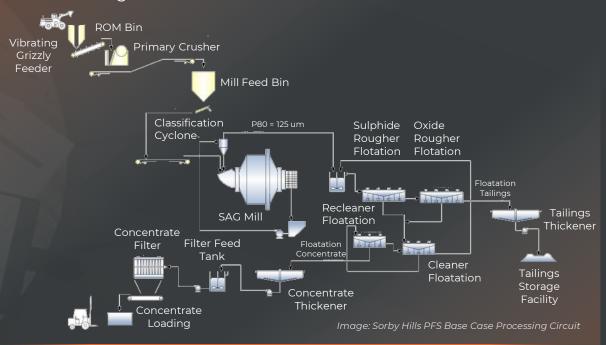
The **PFS Base Case** incorporated the mining of 14.8Mt of ore over an **initial 10-year mine life** from four deposits, namely Omega, A, B and Norton.

- Economic ore from 20m below surface.
- 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 an updated Mineral Resource Estimate (Dec 2021)

# 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.



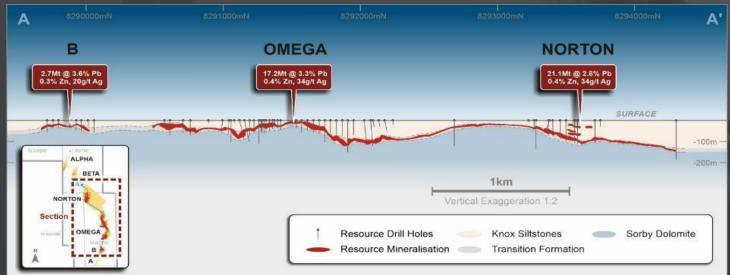
DFS investigating opportunities to increase processing plant capacity from the 1.5Mtpa proposed in the PFS



# Updated High quality Mineral Resource estimate

14% Increase in Measured and Indicated Resource versus PFS Resource

78% increase in Measured Resources versus PFS Resource

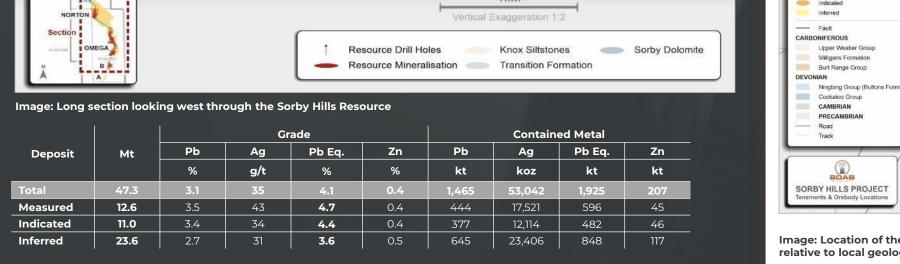


Reported at a 1.0% Pb Cut-Off (Pb Domains only).

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.



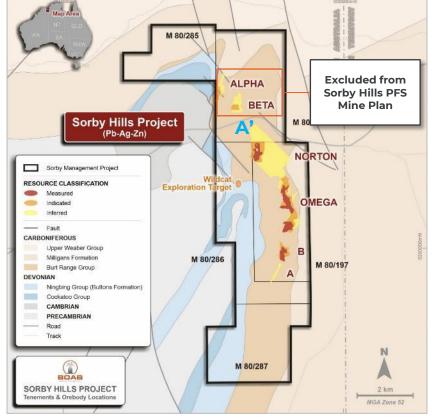


Image: Location of the Sorby Hills deposits and mining tenements relative to local geology



# Significant Resource upside potential

High grade intercepts on the western margin at Beta provide scope for extension of the mineral resource

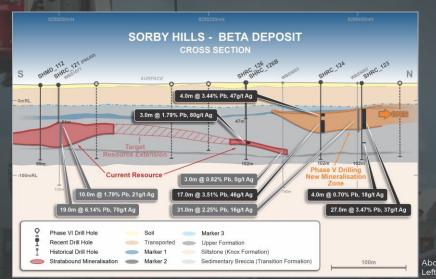
Drilling planned for 2H 2022 will test new mineralisation concepts and other resource expansion opportunities, including further drilling at the Beta deposit.

2021 Assays confirm elevated silver grades at Beta with some metre intervals recording up to 360g/t Silver (SHRC\_124 from 57m).

### 2021 High grade drilling results at Beta 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 & 44q/t Aq 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.



Section N-S M 80/196

Above: intercepts on the western margin at Beta provide scope for extension of the mineral resource eft: Cross section at Beta showing High Grade intercepts from 2021 drilling

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



# Regional exploration potential

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

Exploration Tenements 100% owned by Boab Metals covering 217 km2 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 2021 RC drilling
- Drilling intersected trace mineralisation.
- Drilling has 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.

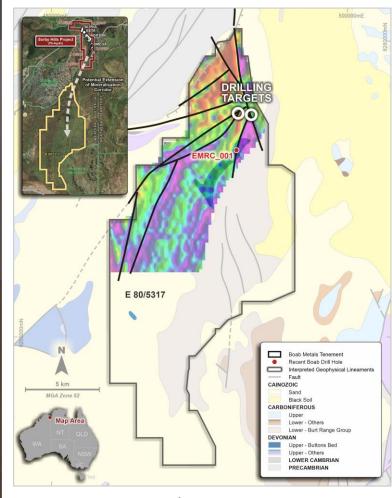


Image: BML 100% owned E80/5317 to the south of the Sorby Hills JV Project showing gravity survey results and location of the inaugural drill hole EMRC 001.



# **Enhanced metallurgical recoveries**

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

- 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.
- Builds upon a significant body of previous work undertaken by Boab since acquiring Sorby Hills in 2018 and others dating back to 1979.

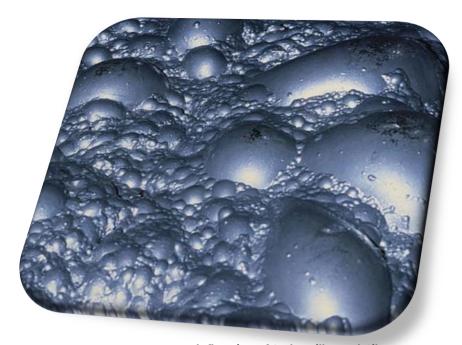


Image: Froth flotation of Sorby Hills Lead-Silver concentrate

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

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



# Sorby Hills – Cleaner Power Solution

Ord River Hydroelectric Plant to deliver Cleaner and Cheaper Power to the Sorby Hills Project

### Heads of Agreement - Key Terms

- Heads of Agreement executed with Horizon Power with respect to a future Power Purchase Agreement for Sorby Hills.
- Key Indicative Terms of the Heads of Agreement include:
  - Delivery of firm power over a 10-year term with an option for Boab to extend; and
  - Cleaner, cheaper electricity sourced from Ord River hydroelectric plant to provide majority of the energy demand of the Project.

Preliminary modelling indicates the hydro power solution with back up diesel will a provide material economic benefit to the Project versus the Build Own Operate "BOO" diesel power solution contemplated in the Sorby Hills PFS



Image: Location of Sorby Hills relative to Kununurra and the Ord River Hydroelectric Plant



# Sorby Hills - Port Access Agreement

Port Access Agreement secures path to market for Sorby Hills concentrates

### Access Agreement - Highlights

- Agreement for Access and Stevedoring Service executed with Cambridge Gulf with respect to Wyndham Port.
- Term extending to April 2034 with an automatic rollover on a 12 monthly basis thereafter.
- Wyndham Port is located 150km by existing sealed road from the Sorby Hills Project.
- Wyndham Port, through which concentrates produced from Sorby Hills will be shipped, is the only deep-water port between Broome and Darwin. The facility is a vital link within Northern Australia's primary and secondary industries' supply chains.
- The Port operations and management are currently overseen by Cambridge Gulf, however the facility is owned by the Department of Transport and regulated by the Kimberley Ports Authority.

Wyndham Port is designed and established for the export of metal concentrates and bulk ore shipping.



Image: Wyndham Port (Source: Cambridge Gulf Limited)



# 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.

### **Lower Power Costs**

 Cleaner, cheaper electricity sourced from Ord River hydroelectric plant to provide majority of the energy demand of the Project; and

### **Port Access Agreement**

✓ Agreement for Access and Stevedoring Service executed with Cambridge Gulf with respect to Wyndham Port Just 150km's from Sorby Hills.



Sorby Hills DFS scheduled for completion in H2 2022



# Sorby Hills - Offtake and Project Financing

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

Boab Metals Limited ASX:BML

### Offtake Agreements

- 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.

Binding Offtake Agreements expected to closely follow the DFS

### **Project Financing**

- Boab has engaged BurnVoir Corporate Finance to arrange a project finance solution for the Sorby Hills Project.
- The Company has engaged with Australia Government financing agencies \$7 billion 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.

### Sorby Hills project financier site visit



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









# 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 confirmed their commitment to the development of the Project and to working constructively with Boab to ensure the Project is bankable and fullyfinanced.
- Joint Venture partners have agreed to accelerate the finalisation of the Sorby Hills Development and Operations Agreement to facilitate engagement with project financiers.





# Establishing deep roots within the local community

Boab is extremely proud to be the Naming Rights Sponsor of the Ord Valley Muster for 2023 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.



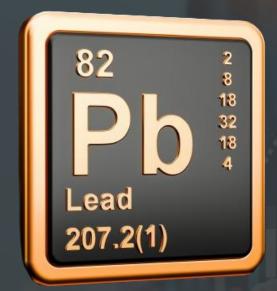


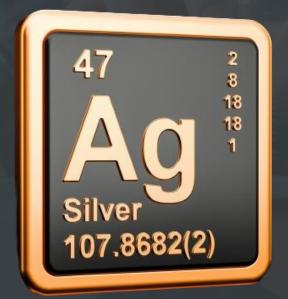


Image: Boab Managing Director and CEO Simon Noon (left) participating in the naming rights handover together with Ord Valley Muster chair Beau Robinson (centre).









# The Silver & Lead Markets



# Lead: An underrated battery metal

Boab Metals Limited ASX:BML

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 assumptions include US\$2.095/t and Silver price US\$21.1/oz

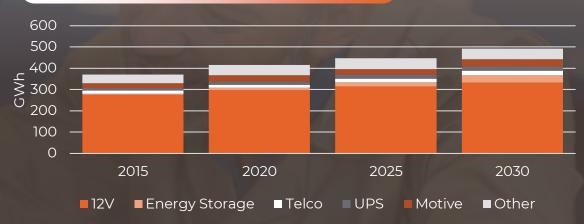
### Lead-acid Batteries are a mature and commoditised technology

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).

ltem	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.
- International Lead and Zinc Study Group: www.ilzsg.org
- Consortium for Battery Innovation: https://batteryinnovation.org/
- Projected growth based on long term trend: https://www.oica.net/category/vehicles-in-use/
- 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\*.

\*See Appendix for detailed breakdown of Silver Resources and source date

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





# **Development Milestones**

Boab Metals Limited ASX:BML

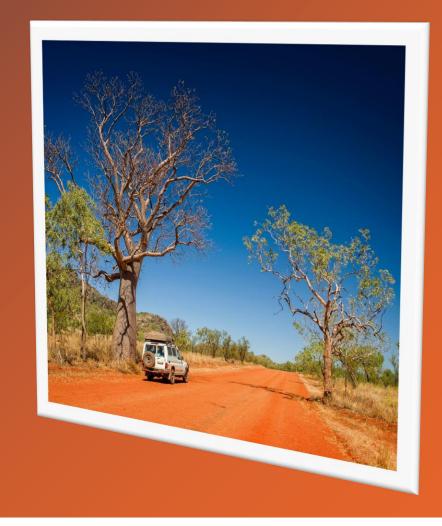
### **Project Execution progress to provide significant news flow events**

### **Recent Milestones Completed**

- Wyndham Port Access Agreement executed with Cambridge Gulf Limited.
- Heads of Agreement executed with Horizon Power for Clean Power Solution.
- Competitive EPC tenders received from a suite of highly experienced engineering firms.
- Amendments to existing EPA Approval confirmed allowing for acceleration of Site Establishment and Early Works.

### **Upcoming News flow & Milestones**

- Infill and extensional drilling at Beta and Norton Deposits.
- Tenders and awarding of contracts relating to Site Establishment and Early Works, Process Plant EPC, Mining and Tailings.
- Finalisation of Power Purchase Agreement with Horizon Power.
- Release of Definitive Feasibility Study results.
- Awarding of Offtake for Sorby Hills concentrate.





# 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;
- ✓ 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;
- Mineral Resources declared at two prospects within the Manbarrum project area<sup>1</sup>; and
- √ 175km² 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.







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

<sup>2</sup> Refer BML Announcement 21 July 2021





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# Thank You





# **Appendix**





# **Board and Management**

Board & 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 mining executive with a strong background in management, capital raising and operating JV's 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 - GM - Sorby Hills

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

Richard Flanagan – Principle Project Engineer – Sorby Hills Mining engineer with extensive experience in

Mining engineer with extensive experience in open pit and underground mine management and feasibility studies across a wide range of commodities.

**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.



# Mineral Resource Estimate - 17 December 2021

		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
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

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

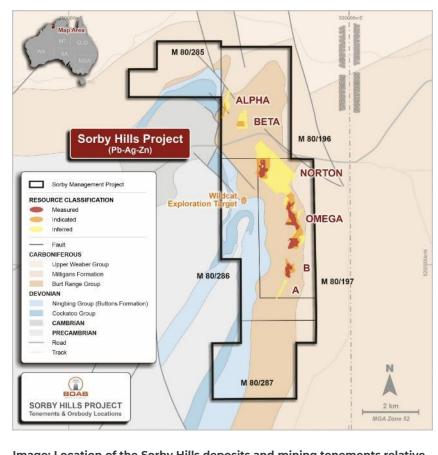


Image: Location of the Sorby Hills deposits and mining tenements relative to local geology



# 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;

# Pb

### **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) =  $G_{pri}$  + ( $G_{pri}$  × [ $\sum_i R_i S_i V_i G_i$ ]/( $R_{pri} S_{pri} V_{pri} G_{pri}$ ))

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.

