

PRESENTATION December 2018

GALENA MINING LIMITED ASX:G1A



#### **Cautionary Statement – Reference to PFS**

This report refers to the Abra Base Metals Project ("Abra" or the "Project") Pre-Feasibility Study ("PFS"). A summary of the PFS and material assumptions was published by Galena Mining Ltd ("Galena") on 25 September 2018 (see ASX announcements platform).

Environmental approvals, mining tenements and approvals, other governmental factors and infrastructure requirements for selected mining methods and for transportation to market were not included as modifying factors for the Ore Reserve estimate contained in this report as they were all analysed in detail for the PFS and determined not to pose any practical or economic restriction to the selected mining and processing model. Furthermore, all other material assumptions (eg, with respect to financial assumptions, metallurgy, mineralogy and geotechnical etc.) that were made in the previously announced PFS have not materially changed, continue to apply and continue to underpin the new December 2018 Ore Reserve estimate and the revised mine model. For further information, please see Galena's ASX announcement of 25 September 2018.

#### **Cautionary Statement – mine model**

63% of the larger revised total mine model material is contained within Probable Ore Reserves. However, the remainder is currently included in Inferred Resources, with no reduction factor applied to the tonnes and grades of the Inferred Resources. Inferred Resources have a lower level of geological confidence and can't be included in the calculation of Ore Reserves. Further infill drilling will be required to convert Inferred material into Indicated. There is no guarantee that such drilling would succeed in converting adequate quantities of Inferred material into Indicated or return the same grade and tonnage distribution. This may affect mining studies and economic outcomes for Abra.

#### **Competent Person's Statement**

The information in this report related to the Abra Ore Reserve estimate is based on work completed by Mr Roger Bryant, BEng (Mining, Member AUSIMM). Mr Bryant is an employee of Galena Mining Ltd. Mr Bryant has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Bryant consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report related to the December 2018 Resource estimate is based on work completed by Mr Don Maclean MSc (Geol), MAIG and RP Geo (Exploration and Mining), MSEG, a consultant to Galena Mining and Mr Mark Drabble B.App.Sci. (Geology), MAIG, MAusIMM, Principal Consultant at Optiro Pty Ltd. Mr Maclean was responsible for data review, QAQC, and development of the geological model. Mr Drabble was responsible for resource estimation, classification and reporting. Mr Maclean and Mr Drabble have sufficient experience 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 Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Maclean and Mr Drabble consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report to which this statement is attached that relates to exploration results and drilling data is based upon information compiled by Mr Don Maclean MSc (Geol), MAIG and RP Geo (Exploration and Mining), MSEG, a consultant to Galena Mining. Mr Maclean has sufficient experience 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 Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Maclean consents to the inclusion in the report of the matters based on this information in the form and context in which it appears.



#### **Forward Looking Statements**

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Some statements in this presentation regarding estimates or future events are forward-looking statements. They include indications of, and guidance on, future earnings, cash flow, costs and financial performance. Forward-looking statements include, but are not limited to, statements preceded by words such as "planned", "expected", "projected", "estimated", "may", "Scheduled", "intends", "anticipates, "believes", "potential", "predict", "foresee", "proposed", "aim", "target", "opportunity", "could", "nominal", "conceptual" and similar expressions.

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## HIGHLIGHTS



## ABRA BASE METALS PROJECT IS THE CORE ASSET







World class, 100%-owned, high-grade, unmined, base metals deposit in Western Australia Outstanding PFS A\$528M NPV<sub>8</sub> / 50% IRR 14-year mine life A\$97M/year cash flow Construction start 2019 DFS mid-2019 Initial production 2021 On track







Infrastructure and port capacity confirmed

Granted mining licence No EPA approval required Indigenous land use agreement

Highest grade primary lead concentrate available globally Offtake 100% available

# CORPORATE OVERVIEW

### Capital structure

Shares on issue (ASX: G1A)	337.0M
Options on issue <sup>1,2</sup>	34.8M
Share price	A\$0.19/share
Market Cap	~A\$64.0M
Cash balance (30 Sep 2018)	~A\$4.8M
Debt	Nil

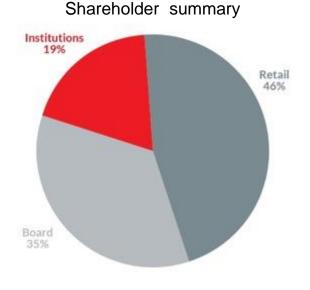
1. Options issued to employees and management with 11.75m having an exercise price of \$0.06 and expiry date of 30 June 2020, and 18m having an exercise price of \$0.08 and expiry date of 30 June 2021. 5m having exercise price of \$0.30 and expiry date of 6 February 2021. 2. In addition, 16.5m contingent performance rights for CEO/MD.

### Board of directors and key management

A proven track record in financing, development and production of mineral assets

Adrian Byass	Non-Executive Chairman	Geologist and Economist, experienced board member, mine development specialist
Alex Molyneux	Managing Director / CEO	Experienced mining executive and financier, former large operating company CEO experience
Tony James	Non-Executive Director	Senior Mining Engineer, former large operating company CEO experience, underground development
Jonathan Downes	Non-Executive Director	Geologist, mining and mine development expertise
Timothy Morrison	Non-Executive Director	Corporate finance, Capital markets, M&A, IPOs
Troy Flannery	Chief Operating Officer	Mining Engineer, underground development, base and precious metals
Ed Turner	GM, Exploration & Geology	Geologist, 30-years+ experience, base and precious metals, former exploration manager of Abra





# OUTSTANDING ABRA PFS RESULTS

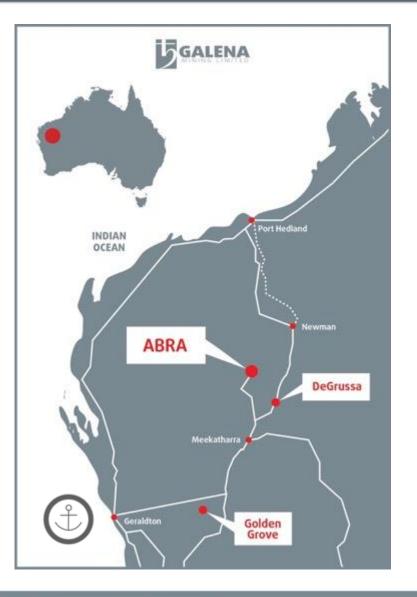


PFS RESULTS	NPV <sub>8</sub> A\$528M	IRR 50%	Capex A\$154M	
PFS outcomes – Production metrics		PFS outcomes – Capital investment and project economics		
Mill throughput	1.2Mtpa	Pre-production capital	A\$154m	
Initial mine life	14-years	Steady-state average cash flows	s (yrs 3-13) A\$97m	
Average LOM lead metal produc	tion 91ktpa	Project payback from commerci	al production 2-years	
Average LOM silver metal produ	ction 760kozpa	Pre-tax NPV (8% discount rate)	A\$528M	
Lead C1 direct cash cost	A\$0.66/lb / US\$0.48/lb	Pre-tax IRR	50%	

- PFS assumptions include: lead price US\$0.95/lb; silver price US\$14.50/oz; and A\$1=US\$0.73
- Abra product will be a high-value, high-grade concentrate containing 75% lead and 220g/t silver The highest grade primary lead concentrate available globally
- No material impediments in the areas of permitting, concentrate marketing, infrastructure and logistics, or native title

# ABRA LOCATION AND INFRASTRUCTURE



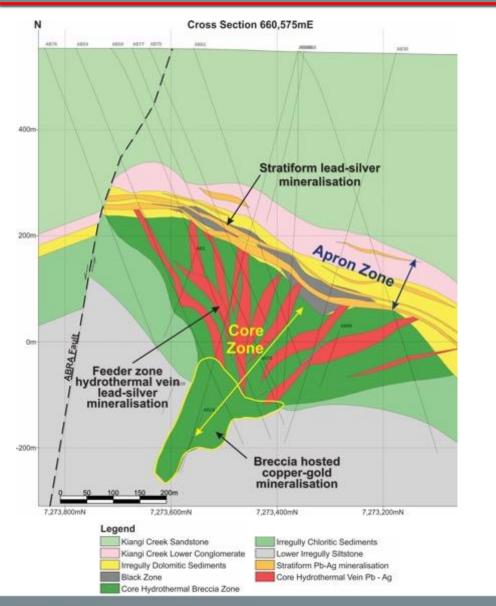


- Abra is located in the Gascoyne region of Western Australia approximately 110km from Sandfire Resources' DeGrussa copper mine
- Well serviced by infrastructure and located approximately halfway between Newman and Meekatharra
- Lead concentrate to be trucked via public highways to Port of Geraldton
- Port of Geraldton has all permits and infrastructure required to handle lead sulphide concentrates and is currently an active handler of third-party (Golden Grove) similar product
- Ample ship loading capacity available



Port of Geraldton – Primary export port

# ABRA MINERALISATION MODEL



- Sediments hosting Abra were deposited in a basin setting and have been deformed with large scale folding and faulting in and around the deposit
- Mineralisation model; hydrothermal fluids carrying lead-silver-zinc-copper-gold have risen through breccia and fault zones
- Mineralised fluids have risen to a sedimentary boundary and have 'mushroomed' sideways settling in preferential (dolomitic) units
- The overlying, stratiform hosted mineralisation is called the "Apron Zone" and is largely galena-rich (ie, lead and silver). This is fed by breccia and vein zones which are called the "Core Zone" mineralisation. Core Zone grades from lead-silver dominant in upper levels to increasingly copper-gold at depth.
- The deposit is open at depth

# MASSIVE GALENA MINERALISATION





Massive mineralisation in Core



Strata from Apron

# MINERAL RESOURCE ESTIMATE



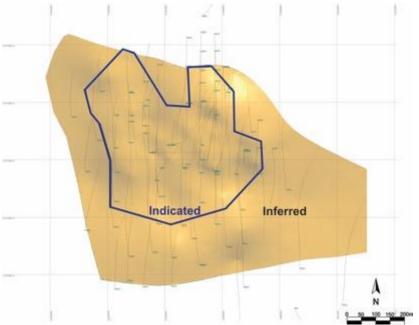
### JORC Mineral Resource estimate (December 2018 Resource) at a 5% lead cut-off grade<sup>1</sup>

Resource classification	<u>Tonnes (Mt)</u>	Lead grade (%)	<u>Silver grade (g/t)</u>
Measured	-	-	-
Indicated	15.0	8.7	22
Inferred	22.4	6.7	15
Total	37.4	7.5	18

Notes: 1. For more detail please see Galena ASX announcement of 18 December 2018.

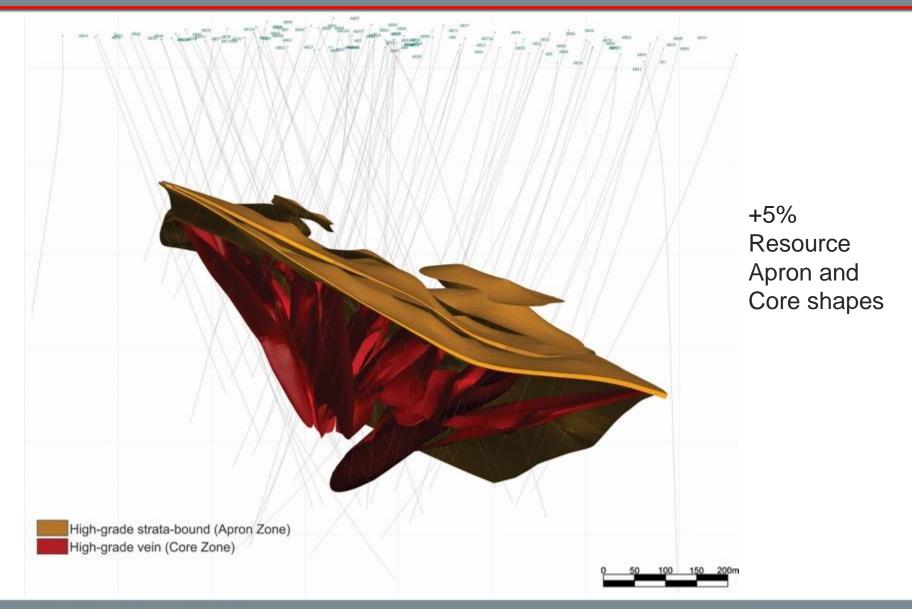
- Resource based on 102 diamond core drillholes
- ~60km of cumulative linear drilling
- >1/3 of the database made up of new drill-holes from 2017-2018

### Plan view of Abra December 2018 Resource



# MINERAL RESOURCE 3D MODEL





# ORE RESERVES AND MINING

- Underlying assumptions unchanged from PFS (see ASX announcement 25 September 2018) Underground mining primarily using long-hole open stoping but with some room and pillar in certain areas
- New Reserve (below) based on December 2018 Resource 9% increase in lead grade vs. PFS Reserve – overall 7% increase in contained lead and 18% increase in contained silver
- Good geotechnical conditions allowing for relatively large stopes 85% recovery assumption with 6% dilution
- New mine model also prepared on December 2018 Resource (note: 37% of new mine model included in Inferred Resources refer cautionary statement on page 2)
  - 1-year extra life of mine vs. PFS' 14-years
  - ~6% higher lead grade over life of mine average
  - ~20% reduction in lateral development metres
- Optimised PFS to come early-2019 once new mine model is sequenced through financial model

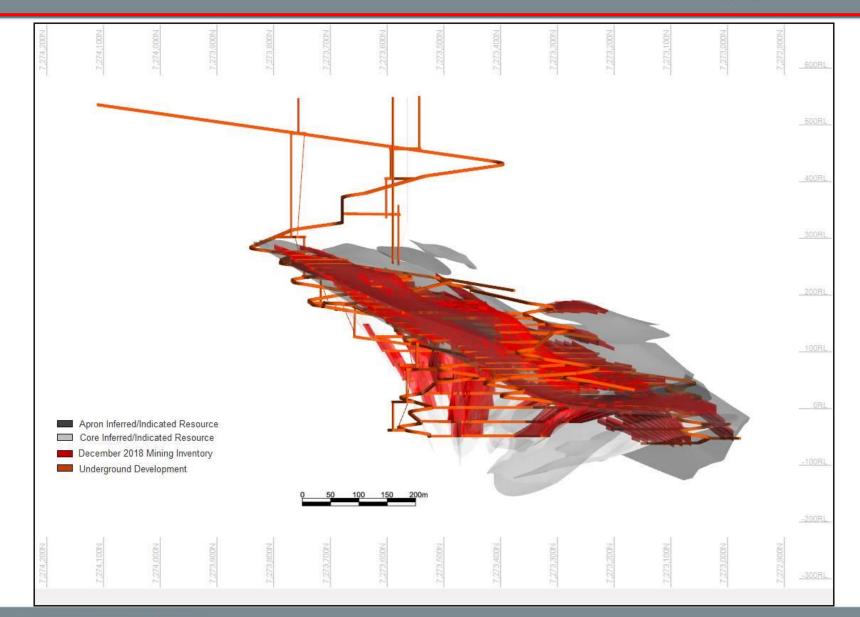
JORC Ore Reserve statement <sup>1</sup>			
Reserve classification	<u>Tonnes (Mt)</u>	<u>Lead grade (%)</u>	<u>Silver grade (g/t)</u>
Proved	-	-	-
Probable	10.3	8.8	24
Total	10.3	8.8	24

Notes: 1. Prepared by Galena Mining – For more detail please see Galena ASX announcement of 18 December 2018.

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# 3D IMAGE OF NEW MINE MODEL





### GALENA MINING LIMITED ASX:G1A

# METALLURGY AND PRODUCT

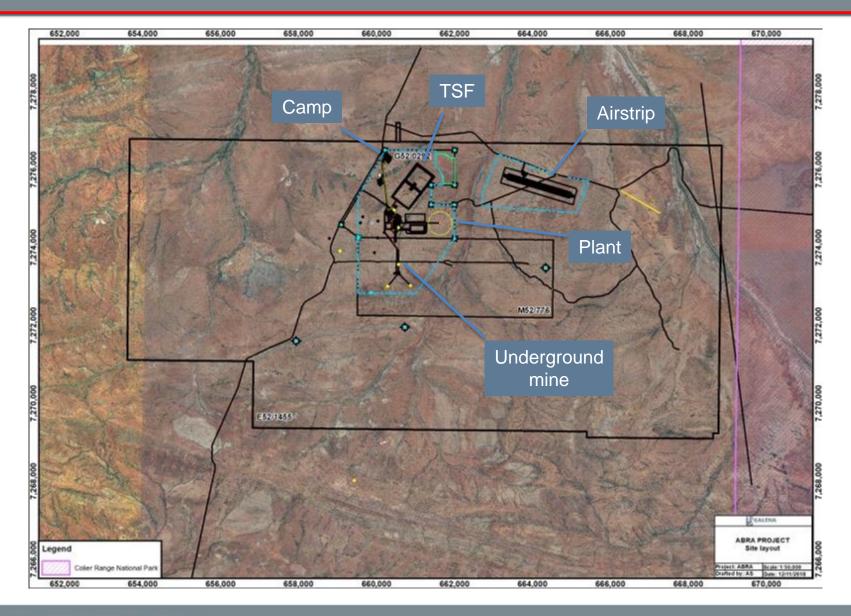


- 1.2Mtpa plant throughput
- Conventional crushing, grinding, flotation and filtration
- Metallurgical testing confirms high (96%) recoveries for both lead and silver into highvalue, high-grade concentrate
- Concentrate product expected to be the highest grade primary lead concentrate available globally – 75% lead and 220g/t silver
- Abra's product in high demand, particularly in the context of the global lead market in current deficit and limited new supply growth
- Nine indications of interest for offtake received from potential customers in Europe, East Asia and China



# ABRA PROJECT PROPOSED SITE PLAN





## CAPITAL INVESTMENT AND COSTS



Abra pre-production capital expenditure	
	<u>A\$M</u>
Mine development (incl. box cut and access)	31.2
Processing plant (concentrator)	51.4
Surface infrastructure	28.8
Offsite road upgrades and miscellaneous	1.5
Tailings storage facilities	5.0
EPCM	13.8
Contingency	10.1
Owner's and indirect costs	12.3
Total	154.0

Abra LOM operating cost estimates		
	<u>US\$                                    </u>	
Mining	23.4	
Processing <sup>1</sup>	14.7	
TCRCs and outbound logistics	15.4	
By-product credit for net silver revenue	(5.6)	
Lead C1 direct cash cost of production <sup>2</sup>	48.0	
Royalties <sup>3</sup>	7.2	
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Notes: 1. Includes an allocation for site general and administration costs of A\$8/t of throughput, 2. Equates to A\$0.657/lb based on an exchange rate of A\$1=US\$0.73, 3. For lead, 5.0% Western Australian State royalty plus 3.27% in vendor and other royalties, and for silver, 2.5% Western Australian State royalty plus 3.27% in vendor and other royalties.



- **PFS review / optimisation** Optimised PFS to be released early-2019 taking into account the increased metal and lower development metres associated with the new mine model prepared in conjunction with the recently released December 2018 Resource
- **Permitting approvals** Abra already on granted mining licence and no requirement for EPA but Galena aims to receive final minor permits mid-2019
- **Offtake** Continued engagement with a select sub-set of the nine parties that already submitted expressions of interest for Abra's high-value, high-grade lead-silver concentrate with a view to concluding formal offtake arrangements
- Advancing discussions with project financiers and strategic investors Discussions substantially advanced with traditional project financing banks and strategic counterparties
- Construction decision and commencement of construction (by mid-2019)
- Completion DFS (mid-2019)



"The PFS confirms Abra is one of the best base metals projects in the world in terms of high investment returns, low country risk and market significance. The Project has an estimated NPV of A\$528M and an IRR of 50%."

"The new (December 2018) Resource is yet another improvement. The mine model associated with that shows one year extra mine life at a 6% average lead grade over the life of mine combined with 20% less lateral development required compared to the PFS."

Managing Director, Alex Molyneux



### Abra December 2018 Resource at alternative cut-off grades

JORC Mineral Resource estimate (December 2018 Resource) at a 6% lead cut-off grade <sup>1</sup>			
Resource classification	<u>Tonnes (Mt)</u>	Lead grade (%)	<u>Silver grade (g/t)</u>
Measured	-	-	-
Indicated	12.4	9.4	24
Inferred	12.9	7.5	17
Total	25.3	8.4	20

Notes: 1. For more detail please see Galena ASX announcement of 18 December 2018.

JORC Mineral Resource estimate (December 2018 Resource) at a 7.5% lead cut-off grade <sup>1</sup>			
Resource classification	<u>Tonnes (Mt)</u>	Lead grade (%)	<u>Silver grade (g/t)</u>
Measured	-	-	-
Indicated	8.5	10.5	27
Inferred	4.5	9.2	22
Total	13.0	10.1	25

Notes: 1. For more detail please see Galena ASX announcement of 18 December 2018.



## Alex Molyneux |

## **Managing Director**



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