

22 Jul 2019

## GALENA MINING LIMITED (G1A)

### DFS highlights the quality of Abra

Galena Mining Limited (G1A) continues to demonstrate the quality of the Abra Lead-Silver Project, in which Toho Zinc (Toho) is investing A\$90M to earn 40%. G1A has released the Abra DFS, improving on the September 2018 PFS to **produce 1.24Mt of lead in concentrate over 15 years** of mine operations, following ~16 months of decline development and construction (for ~16 years of total life). Annual recoverable metal is expected to be 83kt Pb and 660koz Ag, averaging 1.1Mtpa throughput over the 15 year LOM. The mine schedule sees Abra ramp up in year 1 of mining and ramp down in year 15, with steady state operations averaging 1.2Mtpa over the middle 13 years.

G1A has continued to refine costs, lowering expected **C1 to just US\$0.44/lb Pb (net of credits)**. Pre-production **capital has increased to A\$170M** (up from A\$154M) and comprises A\$7.7M contingency. There is a +/- 10% confidence level in the DFS cost estimates. LOM sustaining capital has increased substantially to A\$121M (from A\$90M) with the inclusion of non-underground mining infrastructure as estimated by consultants GRES.

Recent resource drilling at Abra has allowed for a reinterpretation of the Abra Fault in the northwest sector of the mine. The result is a decrease in the current inferred resource, impacting the Mine Model (mine inventory). The DFS is underpinned by an **updated Mine Model of 16.3Mt @ 8.1% Pb and 20.2g/t Ag**; a 2% drop in contained lead from the previous model; however, ongoing drilling has the potential to extend the inferred resource to the west, so lost metal may only be temporary. The Mine Model comprises the Abra reserve (67%) and inferred resources (33%). A resource update is expected by years' end and is aimed at increasing resource confidence.

### Impacts of non-linear production profile

It is expected that Abra will be operated by contract miners using long hole open stoping methods, as well as room and pillar in shallower dipping portions of the orebody. Paste fill has been brought forward in the LOM as expected. The DFS provides a detailed production profile and as forewarned in our previous note, the profile is non-linear with high-grade skewed to years 12 to 14 and lower-grade in years 1 to 3 (see figure 2 within). Although slightly offset by higher throughput in years 3 to 7, the result of the non-linear production profile is that cashflows are lower in the early LOM than we previously modelled, impacting our DCF valuation. No detail of variations in silver grade has been provided and we continue to model linear grade. There is risk that silver follows the lead grades, which could further impact cashflows; however, this is limited as silver comprises ~6% of total revenue.

### Project further de-risked – Speculative Buy

G1A has built on a solid PFS to deliver a strong DFS and continues to de-risk the project. Financing and offtake will be the next catalysts before construction starts in late-2019. Despite this, given the non-linear production profile, the lower lead recovery; now 94% (from 96%), slightly smaller mine inventory and the average LOM throughput being 1.1Mtpa over 15 years of metal production versus the 1.2Mt over 14 years that we previous modelled, our valuation has decreased. We maintain our Speculative Buy recommendation with a NAV of 42cps (down from 53cps), spot NAV is 58cps and our 12-month price target remains 58cps.

Share Price	\$0.405
Preliminary Valuation	\$0.42
Price Target - 12 months	\$0.58

#### Brief Business Description:

Single asset, WA focussed, lead-silver explorer/developer

#### Hartleys Brief Investment Conclusion

The Abra deposit was first drilled in 1981 and has previously been defined to depths of over 500m below surface. ~A\$20M has been spent by previous owners in defining a high tonnage, lower grade deposit. G1A listed in mid-2017 and has defined a high grade resource of 37.4Mt @ 7.5% Pb & 18g/t Ag.

#### Chairman & CEO

Adrian Byass (Non-Exec Chairman)

Alexander Molyneux (Managing Director)

#### Top Shareholders

Bloomgold Resources Pty Ltd	22.6%
Timothy Andrew Roberts	6.9%
UBS Noms.	4.9%

#### Company Address

Level 1, 329 Hay Street  
Subiaco, WA 6008

Issued Capital	364.5m
- fully diluted	419.5m

Market Cap	A\$147.6m
- fully diluted	A\$169.9m

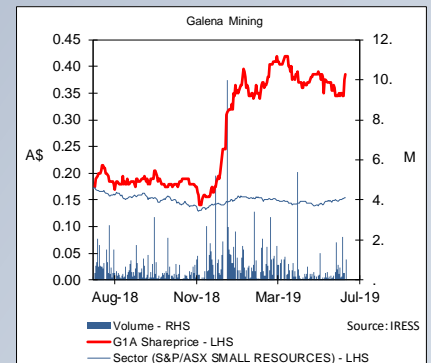
Cash (post Toho investment)	A\$73.0m
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Debt (est 30 Jun 2019)	A\$0.0m
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EV	A\$74.6m
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EV - fully diluted	A\$94.8m
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	Mt	Pb (%)	Ag (g/t)
Resource	37.4	7.5%	18
Reserve	10.3	8.8%	24



Paul Howard

Resources Analyst

Ph: +61 8 9268 3045

E: paul.howard@hartleys.com.au

Hartleys has provided corporate advice within the past 12 months and continues to provide corporate advice to Galena, for which it has earned fees and continues to earn fees.

## SUMMARY MODEL

Galena Mining G1A		Share Price \$0.405		22 July 2019 Speculative Buy	
<b>Key Market Information</b>					
Share Price		\$0.405			
Market Capitalisation - ordinary		A\$147.6m			
Net Cash (Debt)		\$73.0m			
Market Capitalisation - fully diluted		A\$169.9m			
EV		A\$74.6m			
Issued Capital		364.5m			
Options		55.01m			
Issued Capital (fully diluted inc. all options)		419.5m			
Issued Capital (fully diluted inc. all options and new capital)		419.5m			
Valuation		\$0.42			
12month price target		\$0.58			
<b>Directors</b>					
Adrian Byass (Non-Exec Chairman)					
Alexander Molyneux (Managing Director)					
Jonathan Downes (Non-Exec Director)					
Tony James (Non-Exec Director)					
Timothy Morrison (Non-Exec Director)					
Stephen Brockhurst (Company Secretary)					
<a href="http://www.galenamining.com.au">www.galenamining.com.au</a>					
<b>Company Information</b>					
Level 1, 329 Hay Street					
Subiaco, WA 6008					
P +61 8 6461 6350					
F +61 8 6210 1872					
<b>Top Shareholders</b>					
m shares %					
Bloomgold Resources Pty Ltd (Timothy Morrison)					
82.3 22.6%					
Timothy Andrew Roberts					
25.0 6.9%					
UBS Noms.					
18.0 4.9%					
<b>Reserves &amp; Resources</b>					
Mt Pb % Ag g/t Pb (kt) Ag (Moz)					
<b>Reserve</b>					
Proved					
Probable					
Total					
<b>Resource</b>					
Measured					
Indicated					
Inferred					
Total					
<b>Mine Plan</b>					
Mt Pb % Ag g/t Pb (kt) Ag (Moz)					
16.3 8.1 20.2 1320 10.6					
<b>Production Summary (100%)</b>					
Unit 30 Jun 19 30 Jun 20 30 Jun 21 30 Jun 22 30 Jun 23					
Mill Throughput Mt - - 0.15 0.73 1.19					
Mined grade Pb % - - 7.1% 7.2% 7.5%					
Mined grade Ag g/t - - 20 20 20					
Lead produced kt - - 9.7 49.4 83.2					
Silver produced koz - - 88 439 717					
Payable Lead kt - - 9.2 46.9 79.0					
Payable Silver koz - - 83.2 417.5 681.4					
Payable Lead Equiv kt - - 9.8 50.1 84.3					
Mine Life yr - - 15.00 14.00 13.00					
Capex A\$m 0.0 -69.3 -106.0 -8.7 -9.0					
Assumed Mining Inventory Mt 16.4 16.4 16.4 15.8 14.6					
Assumed Inventory - Pb grade % 8.1% 8.1% 8.1% 8.2% 8.2%					
Assumed Inventory - Ag grade g/t 20 20 20 20 20					
<b>Costs</b>					
Unit 30 Jun 19 30 Jun 20 30 Jun 21 30 Jun 22 30 Jun 23					
Cost per milled tonne \$A/t Pb Eq - - 103.4 105.2 108.5					
EBITDA / tonne milled ore \$A/t Pb Eq - - 32.5 67.3 71.3					
C1: Operating Cash Cost = (a) \$A/lb Pb Eq - - 0.69 0.69 0.69					
C2: (a) + actual cash for development = (d) \$US/lb Pb Eq - - 0.50 0.50 0.51					
C3: (c) + Royalty \$A/lb Pb Eq - - 1.12 0.90 0.86					
(d) + Royalty \$A/lb Pb Eq - - 1.96 1.03 0.94					
AISC - Payable \$A/lb Pb Eq - - 0.73 0.84 0.83					
Total Cost - P&L - Payable \$US/lb Pb Eq - - 0.52 0.61 0.61					
Total Cost - P&L - Payable \$A/lb Pb Eq - - 1.09 0.86 0.84					
<b>Price Assumptions</b>					
Unit 30 Jun 19 30 Jun 20 30 Jun 21 30 Jun 22 30 Jun 23					
AUDUSD A\$/US\$ 0.71 0.70 0.72 0.73 0.74					
Lead US\$/lb 0.90 0.92 0.93 0.95 0.96					
Silver US\$/oz 15.19 16.00 16.43 17.19 17.56					
<b>Sensitivity Analysis</b>					
Valuation FY22 NPAT					
Base Case 0.42 21.5					
Spot Prices 0.53 (26.0%) 22.2 (3.4%)					
Spot USD/AUD 0.70, Lead US\$0.9/lb, Silver US\$16.2/oz.					
AUDUSD +/-10% 0.31 / 0.56 (-26.0% / 31.8%) 14.1 / 30.4 (-34.1% / 41.7%)					
Lead +/-10% 0.53 / 0.31 (26.7% / -26.7%) 29.0 / 14.0 (34.9% / -34.9%)					
Silver +/-10% 0.43 / 0.41 (1.9% / -1.9%) 22.0 / 20.9 (2.6% / -2.6%)					
Production +/-10% 0.55 / 0.29 (31.3% / -31.4%) 30.3 / 12.6 (41.1% / -41.1%)					
Operating Costs +/-10% 0.35 / 0.50 (-18.0% / 18.0%) 16.8 / 26.2 (-21.9% / 21.9%)					
<b>Unpaid Capital</b>					
Year Expires No. (ml) \$m Average % out					
30-Jun-18 0.0 0.0 0.00 0%					
30-Jun-19 0.0 0.0 0.00 0%					
30-Jun-20 0.0 0.0 0.00 0%					
30-Jun-21 16.8 2.2 0.13 4.6%					
30-Jun-22 18.0 1.4 0.08 5%					
TOTAL 34.75 3.6 0.10 9.5%					
<b>Valuation</b>					
A\$m A\$/s					
60% Abra (pre-tax NAV at disc. rate of 12%) 133 0.32					
Other Assets/Exploration 50 0.12					
Forwards 0 0.00					
Corporate Overheads -34 -0.08					
Net Cash (Debt) 73 0.17					
Tax (NPV future liability) -48 -0.11					
Options & Other Equity 2 0.00					
Total 177 0.42					
Analyst: Paul How ard					
+61 8 9268 3045					
"tbc capital" could be equity or debt. Our valuation is risk-adjusted for how this may be obtained.					
Sources: IRESS, Company Information, Hartleys Research					
Last Updated: 22/07/2019					

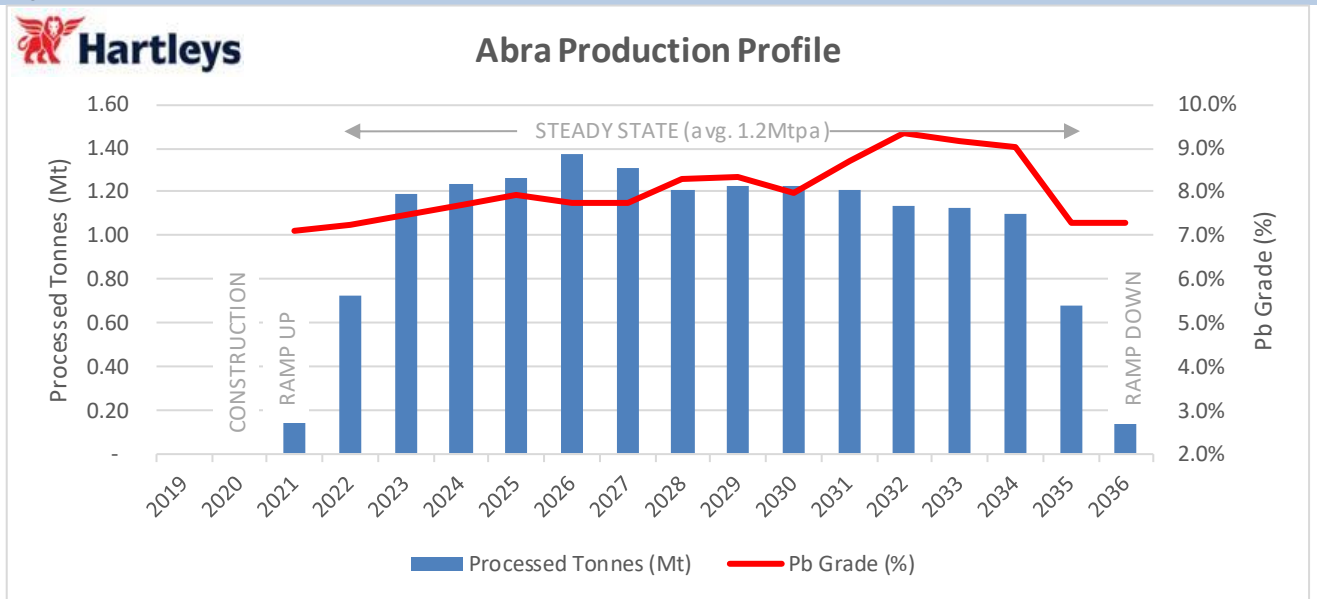
## MODEL ASSUMPTIONS

Fig. 1: Hartleys' Assumptions versus the Abra PFS

Assumptions	Units	G1A PFS September 2018	G1A DFS July 2019	Hartleys' Previous Estimates	Hartleys' Estimates	% Difference (Hartleys' Current Vs G1A)	Hartleys Estimates' at Spot Prices
Assumed mine inventory	Mt	15.3	16.3	16.4	16.3	0%	16.3
Avg LOM Silver grade	g/t	20	20.2	22	20.2	0%	20
Avg LOM Lead grade	%	7.7%	8.1%	8.2%	8.1%	-1%	8.1%
Operating Mine Life	yrs	12.75	15.00	14.00	15.00	0%	15.0
Average annual ore processed over LOM	Mtpa	1.2	1.1	1.2	1.1	0%	1.1
<b>Recoveries</b>							
Silver	%	96%	94%	93%	93%	-1.1%	93%
Lead	%	96%	94%	95%	94%	0.0%	94%
<b>LOM Recoverable metals to Concentrate</b>							
Silver	Moz	9.4	10.0	11.1	9.9	-0.6%	9.9
Lead	kt	1,131	1,241	1,309	1,255	1.1%	1,255
<b>LOM Average Recoverable metals to concentrate per annum</b>							
Silver	Moz	0.74	0.66	0.79	0.66	-0.6%	0.66
Lead	kt	89	83	93	84	1.1%	84
<b>Payabilities</b>							
Silver	%	95%	95%	95%	95%	0.0%	95%
Lead	%	95%	95%	95%	95%	0.0%	95%
<b>LOM Payable metals in Concentrate</b>							
Silver	Moz	9.0	9.5	10.5	9.4	-0.6%	9.4
Lead	kt	1,074	1,179	1,243	1,191	1.1%	1,191
<b>Average LOM commodity price</b>							
Silver	A\$/oz	19.86	22.86	22.78	22.76	-0.4%	23.00
Lead	A\$/t	2,869	2,898	2,629	2,619	-9.6%	2,903
FX	AUD:USD	0.73	0.70	0.74	0.75	6.6%	0.70
Total Revenue	A\$M	3,261	3,632	3,508	3,324	-8.5%	3,675
Silver	A\$M	178.2	216.1	239.2	213.9	-1.0%	216.2
Lead	A\$M	3,083	3,416	3,269	3,110	-9.0%	3,459
<b>Total LOM Operating Costs</b>							
Mining - underground	A\$/t	52.3	53.7	53.0	54.3	1.1%	54
Processing	A\$/t	24.9	25.2	25.0	25.9	2.9%	26
Haulage & TC/RC	A\$/t	34.4	20.1	35.0	20.2	0.4%	20
G&A ("Other")	A\$/t	8	16.8	10	17.0	2%	17
Total Costs	A\$/t	120	116	125	117	1.4%	117
C1	US\$/lb Pb payable (net of credits)	0.48	0.44	0.46	0.46	4.8%	0.44
	A\$/lb PbEq payable	-	-	0.72	0.69	-	0.70
	US\$/lb PbEq payable	-	-	0.51	0.52	-	0.49
<b>Royalties</b>							
Silver	%	-	6.0%	5.8%	6.0%	0.0%	6.0%
Lead	%	8.3%	8.5%	8.3%	8.5%	0.0%	8.5%
EBITDA	A\$M	1560.1	1839.9	1128.1	1092.8	-41%	1413.7
<b>Total Project capital</b>							
Plant and infrastructure capital	A\$M	154.0	169.6	170.0	172.9	2%	172.9
Sustaining capital	A\$M	90.0	121.4	83.5	118.5	-2%	118.5
Working capital	A\$M	0.0	16.0	10.0	20.0	25%	20.0
Exploration (LOM)	A\$M	0.0	0.0	39.0	26.8	-	26.8
<b>Pre-tax NPV - 8% discount rate</b>							
	A\$M	528.0	564.0	300.4	337.0	-	455.1
<b>Pre-tax NPV - 12% discount rate</b>							
	A\$M	-	-	300.4	221.0	-	303.5

Source: Hartleys' Estimates, Galena Mining Limited

Fig. 2: Abra Production Profile



Source: Hartleys' Estimates, Galena Mining Limited

Fig. 3: Commodity and FX Assumptions

	G1A PFS September 2018		G1A DFS July 2019		Hartleys' Estimates		Spot prices	
	A\$	US\$	A\$	US\$	A\$	US\$	A\$	US\$
Average LOM commodity price								
Silver A\$/oz	19.86	14.50	22.86	16.00	22.78	16.99	23.00	16.20
Lead \$/t	2,869	2,094	2,898	2,028	2,629	1,960	2,902	2,044
Lead S/lb	1.30	0.95	1.31	0.92	1.19	0.89	1.32	0.93
FX -AUD:USD	0.73		0.70		0.75		0.70	

Source: Hartleys' Estimates

### HOW WILL ABRA BE FUNDED?

G1A (including AMPL, of which it currently owns 91.1%) had A\$28M cash at the end of the JunQ (estimated split is ~\$18M in the JV and ~\$10M in G1A). The JV will now receive the A\$10M payment from Toho for completing the DFS and a further \$60M on confirmation of project financing (diluting G1A's ownership of AMPL to 60%). AMPL must repay the balance (\$5M) of a loan to G1A, so pro-forma post-completion of the Toho deal, AMPL will have ~\$83M and G1A will have ~\$15M. Assuming there are project costs still being expensed by AMPL, we assume its cash is ~\$80M post-completion. We model total pre-production and working capital of \$192M. \$80M of this can be paid in cash by AMPL, with the remaining \$112M assumed to be funded through debt. \$67M (60%) of this debt is attributable to G1A.

## VALUATION

Our sum of parts valuation for G1A is based on the Toho deal completing with G1A holding 60% of the Abra Project. We model discounted cashflows for Abra as per the July 2019 DFS, Company guidance and resource, reserve and mine plan update. Our model assumes the project can be funded 100% through debt post the Toho deal, and commence production in mid-2021. We model a nominal \$50M for exploration, which includes the copper-gold targets at depth beneath Abra.

Our valuation for G1A  
is 42cps

**Fig. 4: Hartleys' Sum of Parts Valuation for G1A**

Valuation	A\$M	A\$/s
60% Abra (pre-tax NAV at disc. rate of 12%)	133	0.32
Other Assets/Exploration	50	0.12
Forwards	0	0.00
Corporate Overheads	-34	-0.08
Net Cash (Debt)	73	0.17
Tax (NPV future liability)	-48	-0.11
Options & Other Equity	2	0.00
<b>Total</b>	<b>177</b>	<b>0.42</b>

Source: Hartleys' Estimates

## PRICE TARGET

We assume the new mine inventory of ~16.3Mt @ 8.1% Pb and 20.2g/t Ag from a LOM average of 1.1Mtpa underground operation (years 2 to 14 averages 1.2Mtpa), using \$117/t opex and pre-production capital of A\$173M. We model production of ~84Ktpa PbEq over a 15-year mine life from a nameplate 1.2Mtpa plant at a conservative LOM Pb price of US\$0.89/lb. Lead recoveries have been modelled at 94% with 95% payabilities.

Our fully diluted price target is derived from a blended scenario comprised of a discounted cashflow analysis of a Pb-Ag operation at Abra, a base case at consensus and spot pricing, a scenario highlighting the value at commencement of production, a scenario where G1A does not develop the project (exploration value), a scenario where the project is acquired at a premium by a major, a new scenario where G1A attracts favourable offtake terms given its premium lead product, and a net cash backing case.

Our 12-month price  
target for G1A is  
58cps

**Fig. 5: Hartleys G1A Price Target**

Price Target Methodology	Weighting	Spot	12 Month
Abra NPV @ 12% - Base Case, assuming no further equity dilution	40%	\$0.42	\$0.49
NPV at spot commodity and fx prices	15%	\$0.53	\$0.61
NPV10 base case (commencement of production)	15%	\$0.78	\$0.89
Premium product attracts favourable offtake terms (higher pays, lower TCs)	10%	\$0.51	\$0.58
G1A's 60% stake acquired by a major	10%	\$0.65	\$0.65
Exploration value - no development	5%	\$0.18	\$0.18
Net cash backing	15%	\$0.20	\$0.20
<b>Risk weighted composite</b>		<b>\$0.52</b>	
<b>12 Months Price Target</b>		<b>\$0.58</b>	
Shareprice - Last		\$0.405	
<b>12 mth total return (% to 12mth target + dividend)</b>		<b>44%</b>	

Source: Hartleys' Estimates

## RISKS

Key risks for Galena include final execution of the Toho deal and commodity sentiment/demand.

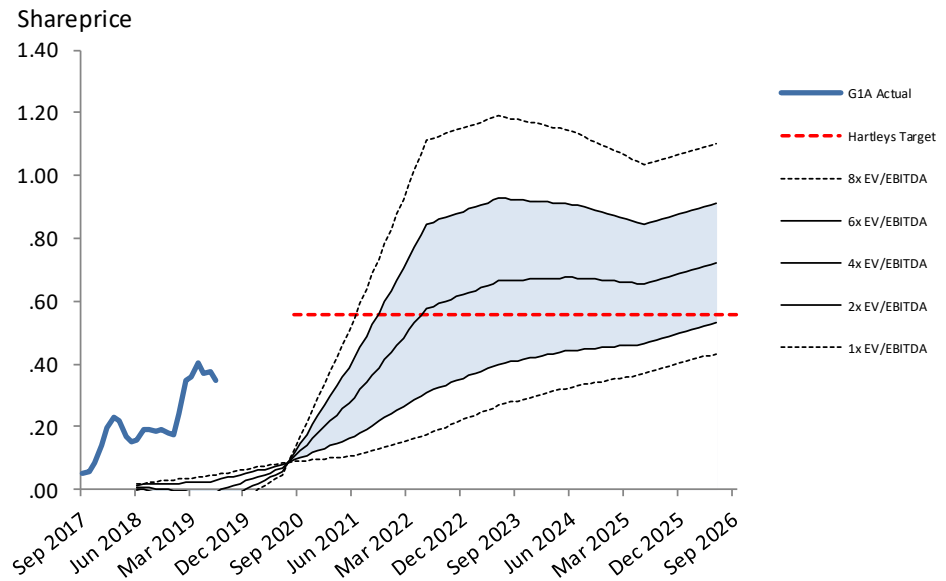
*Fig. 6: Key assumptions and risks for valuation*

Assumption	Risk of not realising assumption	Risk to valuation if assumption is incorrect	Comment
~84kt PbEq for ~15years	Moderate	High	We assume G1A can mine in excess of the current reserve as per the latest 'mine model'. There is moderate risk surround this.
Metallurgy	Low	Meaningful	Recent met work suggests that up to 96% recoveries can be achieved, we model a lower 94% for Pb and 93% for Ag. DFS is 94%.
Exploration Upside	Moderate	Moderate	We assume a high level of exploration upside for G1A. We have assumed a \$50m value on the exploration potential at Abra and on adjacent projects.
Lead Price	Moderate	High	Our lead price forecasts are in line with sell side consensus.
Funding	Moderate	High	We assume the Toho deal executes and only debt funding remains.
Lead demand	Moderate	High	The emergence of the EV space puts lead (batteries) demand somewhat at risk. However, lead is still required for starting, lighting and ignition circuits.
<i>Conclusion</i>	<i>The assumptions we have made have a low to moderate risk of not being. We believe is the highest risk to our valuation of G1A is commodity prices and demand.</i>		

*Source: Hartleys' Research*

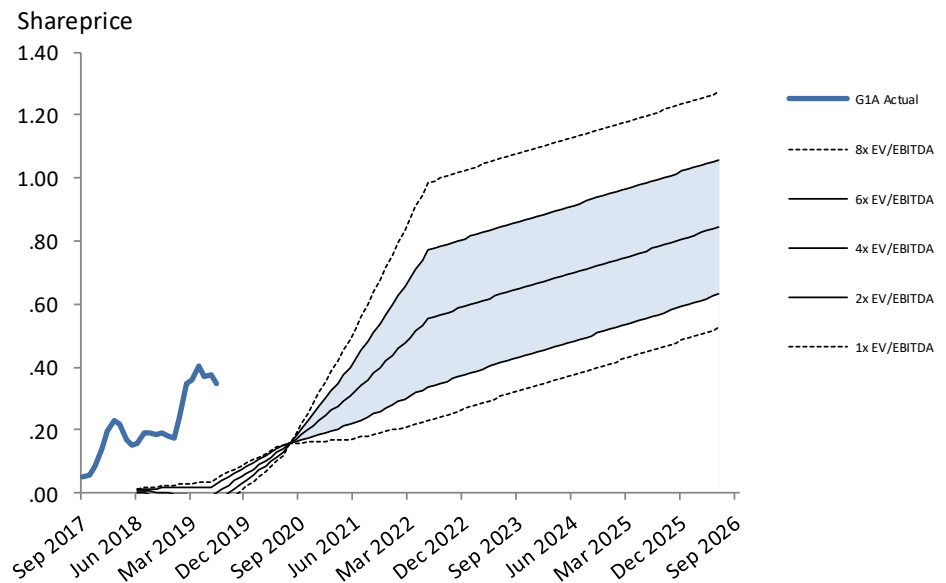
## EV/EBITDA BANDS

**Fig. 7: Using Hartleys base case commodity forecasts**



Source: Hartleys' Estimates, IRESS

**Fig. 8: Using spot commodity prices**



Source: Hartleys' Estimates, IRESS

# 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
Oliver Stevens	Research Analyst	+61 8 9268 2879
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
Ben Crossing	Director	+61 8 9268 3047
Ben Wale	Director	+61 8 9268 3055
Stephen Kite	Director	+61 8 9268 3050
Scott Weir	Director	+61 8 9268 2821
Scott Stephens	Associate Director	+61 8 9268 2819
Rhys Simpson	Associate Director	+61 8 9268 2851
Michael Brown	Executive	+61 8 9268 2822

## Registered Office

### Level 6, 141 St Georges Tce Postal Address:

Perth WA 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	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.
Buy	

## Institutional Sales

Carrick Ryan	+61 8 9268 2864
Justin Stewart	+61 8 9268 3062
Simon van den Berg	+61 8 9268 2867
Digby Gilmour	+61 8 9268 2814
Jayne Walsh	+61 8 9268 2828
Veronika Tkacova	+61 8 9268 2836

## 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
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
Matthew Parker	+61 8 9268 2826
Charlie Ransom	+61 8 9268 2868
Heath Ryan	+61 8 9268 3053
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

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