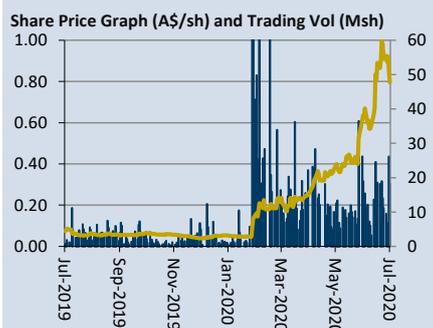


## SPEC BUY

Current Price	\$0.80
Valuation	\$1.45
Target Price	\$1.16

Ticker:	DEG	
Sector:	Metals & Mining	
Shares on Issue (m):	1,173	
Market Cap (\$m):	932.6	
Cash (\$m):	27.7	
Enterprise Value (\$m):	904.9	
52 wk High/Low:	\$1.00	\$0.04
12m Av Daily Vol (m):	8.7	
<b>Projects</b>	<b>Stage</b>	
Mallina Project	Defined Resource	
Hemi Discovery	Exploration	
<b>Resource Status</b>		
Mallina Gold Project	2.2Moz	
<b>Cashflows</b>	2018	2019
Operating Cashflow	-7.1	-9.4
Investing Cashflow	-2.5	-0.9
Financing Cashflow	9.7	10.5
Cash Balance	1.1	1.3
<b>Directors:</b>		
Simon Lill	Chairman	
Glenn Jardine	Managing Director	
Andy Beckwith	Executive Technical Director	
Peter Hood	Non-Executive Director	
Eduard Eshuys	Non-Executive Director	
Bruce Parncutt AO	Non-Executive Director	
<b>Major Shareholders (%)</b>		
DGO Gold Limited	16.4%	
Northwest Nonferrous	5.7%	



Please refer to important disclosures at end of the report (from page 7)

Monday, 13 July 2020

## De Grey Mining (DEG)

### Initial Metallurgical Testwork

Analysts: Matthew Keane | Michael Eidne

#### Quick Read

DEG has released initial metallurgical testwork for the Brolga Zone, within the Hemi discovery, part of the Mallina Project in the Pilbara of Western Australia. Tests achieved 93.0% recoveries for oxide mineralisation using carbon in leach (CIL) and 96.3% for fresh mineralisation using sulphide flotation, pressure oxidation (POX) and CIL. Given the known partly refractory nature of other deposits within the Mallina Project, it was anticipated that Hemi would require further processing to unlock gold in sulphide mineralisation. While preliminary in nature, Argonaut regards these results to be a positive outcome and better than our previous modelled recoveries of 89-93% from POX and CIL. DEG is actively expanding the Hemi deposit with six drill rigs operating in the region. Further drill results released recently have extended the Brolga Zone to the south and southwest.

#### Event & Impact: Metallurgy and drilling update - Positive

**Brolga highly amenable to POX:** Metallurgical testwork based on four holes into the Brolga Zone have returned 93.0% recoveries for oxide mineralisation using 24hr bottle roll cyanide extraction (CIL simulation) and 96.3% for fresh mineralisation using sulphide flotation, POX and CIL. Significantly, 92-93% of gold was recovered in >10% of the initial mass from flotation of fresh ore. This would substantially reduce the scale of POX plant under a development scenario (assuming POX is the preferred method for sulphide oxidation). As a comparative, Alacer Gold's (AQQ) Çöpler sulphide ore is less amenable to flotation and applies whole ore POX. POX is a commonly utilised oxidation process used in profitable mines such as Porgera and Lihir, as well as Carlin deposits in Nevada, USA.

**Hemi continues to grow:** Ongoing drilling continues to grow the extents of Hemi. Aircore (AC) drilling has shown the potential to extend the Brolga Zone by 160m further west with an intercept of 16m @ 1.9g/t from 48m. The newly discovered southern extension to Brolga is being tested with RC drilling with shallow intercepts including 15m @ 1.1g/t from 223m and 5m @ 1.1g/t from 59m. We highlight that Hemi is still in the rapid expansion phase and remains open in nearly every direction. Based on drill intercepts to date, Argonaut estimates the current endowment could be ~3.6Moz @ ~1.6g/t.

**Looking for Hemi repeats:** AC drilling has commenced at the Antwerp and Scooby prospects. Both have historic gold intercepts and contain intrusive geology similar to Hemi. An aeromagnetic survey over the Mallina Project has identified >20 new magnetic features with the potential to be mineralised intrusions similar to Hemi. Beyond the Hemi discovery, Mallina has significant exploration upside over its 150km of prospective strike.

#### Recommendation

Argonaut's revised valuation for DEG is 1.45ps (from \$0.65ps) primarily driven by a change to a DCF based valuation (previously EV/Resource based). We apply a 20% discount to NAV to account for development risks to achieve a \$1.16ps target price. See Page 2 for more detail. Speculative Buy recommendation maintained.

## Valuation

Argonaut has revised its valuation method...

Shifting from an EV/Resource to DCF basis

Argonaut has previously valued Hemi on an EV/Resource basis, applying A\$150/oz to Argonaut's estimated endowment of 3.6Moz. We now move to a DCF based valuation using Gold Road Resources, Gold Fields (50:50 JV) 7.5Mtpa Gruyere Project as a basis for some of our assumptions. Gruyere is the last large-scale open pit gold development constructed in Western Australia. We assume a 15-year mine life with a declining grade profile averaging 1.3g/t gold (see [Previous Research](#) for further detail). Key DCF assumptions are tabled below. Changes to our previous DCF model include higher recoveries (from 89% to 94%) and the construction of a POX plant upfront (previously deferred to Year 3 after three years of oxide treatment).

Our DCF valuation assumes a 7.5Mtpa plant, a similar scale to the Gruyere Project

Table 1. Argonaut Hemi DCF assumptions

Metric	Measure	Value
Mine Life	Yrs	15
Throughput	Mtpa	7.5
Ave. Head Grade	g/t	1.3
Stage 1 Grade	g/t	2.0
Stage 2 Grade	g/t	1.2
Stage 3 Grade	g/t	0.8
Ave. Recovery	%	94%
Ave. Gold Production	ktpa	290
Preproduction Capex	A\$m	450
Sustaining Capex	A\$mpa	6
POX Capital	A\$m	150
Ave. AISC	A\$/oz	969
Average Gold Price	US\$/oz	1,500
FX	AUD/USD	0.70
Post Tax NPV <sub>8</sub>	A\$b	1.5

Source: Argonaut

Argonaut's new valuation is \$1.45ps...

Argonaut continues to value the existing resources on the Mallina Project on an EV/Resources basis (A\$85/oz), however we acknowledge that they would likely be processed through a central mill at Hemi. A further \$50m is allocated to exploration upside, largely based on the prospectivity of potential Hemi repeats in areas such as Scooby, Shaggy and Antwerp. We apply a 20% discount to our \$1.45ps NAV to account for the pre-resource nature of Hemi and risks associated with development (permitting and financing) to achieve a \$1.16ps target price.

...to which we apply a 20% risk discount to achieve a \$1.16ps target price

Table 2. Argonaut's sum of parts valuation for DEG

Sum of Parts	Valuation Methodology	Value (A\$m)	Value ps (A\$ps)
Hemi	DCF	1486	1.27
Existing Mallina Resources	A\$85 per Resource Ounce	184	0.16
Exploration Upside	Est. Transactional value of Tenure	50	0.04
Corporate Overheads	15 year DCF	-48	-0.04
Cash	Reported cash at 30 June	27.7	0.02
Debt	Reported debt at 30 June	0	0.00
<b>Total</b>		<b>1699</b>	<b>1.45</b>
	Discount		20%
Target Price			1.16

Source: Argonaut

## Positive Initial Metallurgical Testwork

**Initial metallurgical testwork has returned 93% recoveries for oxide mineralisation...**

Metallurgical testwork based on four holed into the Brolga Zone have returned 93.0% recoveries for oxide mineralisation using 24hr bottle roll cyanide extraction and 96.3% for fresh mineralisation using sulphide flotation, POX and CIL.

**...and 96.3% recovery for sulphide mineralisation using POX treatment**

*Table 3. Gold Recovery into Flotation Concentrate and of Flotation Tails (by CIL)*

Composite Number	Description	Head Grade (g/t Au)	Gold Recovery into Flotation Concentrate (%)	Concentrate Mass Pull (%)	Gold Recovery of Flotation Tail (%)	Overall Recovery prior to POX (%)	Gold Recovery into Flotation Concentrate (%)
1	Transition*	1.45	83.0	8.8	80.7	96.7	
2	Fresh	3.11	93.0	9.4	59.7	97.2	
3	Fresh	2.68	92.2	8.5	62.1	97.0	
4	Fresh <sup>A</sup>	2.62	92.5	7.5	66.9	97.5	

\*comprises oxide, partially oxidized and fresh mineralisation  
<sup>A</sup>using 10kg bulk flotation test; all other composite samples are from 1kg flotation test.

Source: DEG

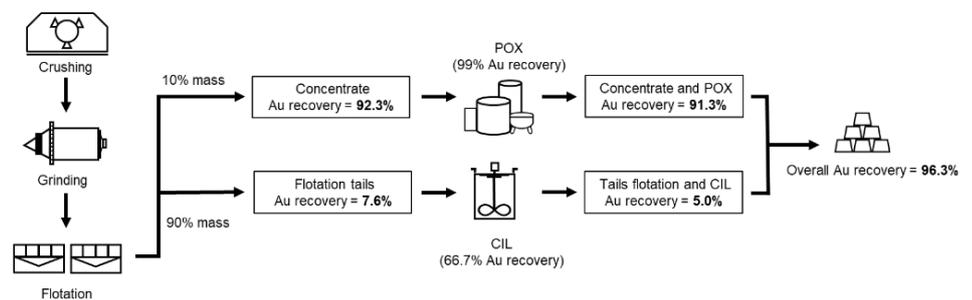
Significantly, 92-93% of gold was recovered in >10% of the initial mass from floatation of fresh ore. This would substantially reduce the scale of POX plant under a development scenario. As a comparative, Alacer Gold's (AQG) Çöpler sulphide ore is less amenable to flotation and applies whole ore POX. POX is a commonly utilised oxidation process used in profitable mines such as Porgera and Lihir, as well as Carlin deposits in Nevada USA.

**Detailed metallurgical tests are ongoing...**

While additional capital would be required for POX processing, we highlight that the Mallina Project will have the scale to absorb any additional capital intensity. As all deposits within the Mallina project are expected to be amenable to POX (as shown by historic testwork), a processing plant based at Hemi could act as a central mill for regional resources (currently 2.2Moz @ 1.8g/t). It is important to note that these test results are preliminary and unoptimized leaving scope for improvement. In addition, they are based only upon the Brolga Zone. DEG is undertaking more comprehensive metallurgical tests which will feed into detailed flowsheet design.

**...with will lead into the process flowsheet design**

*Figure 1. Proposed flowsheet for fresh sulphide or from the Mallina Project*



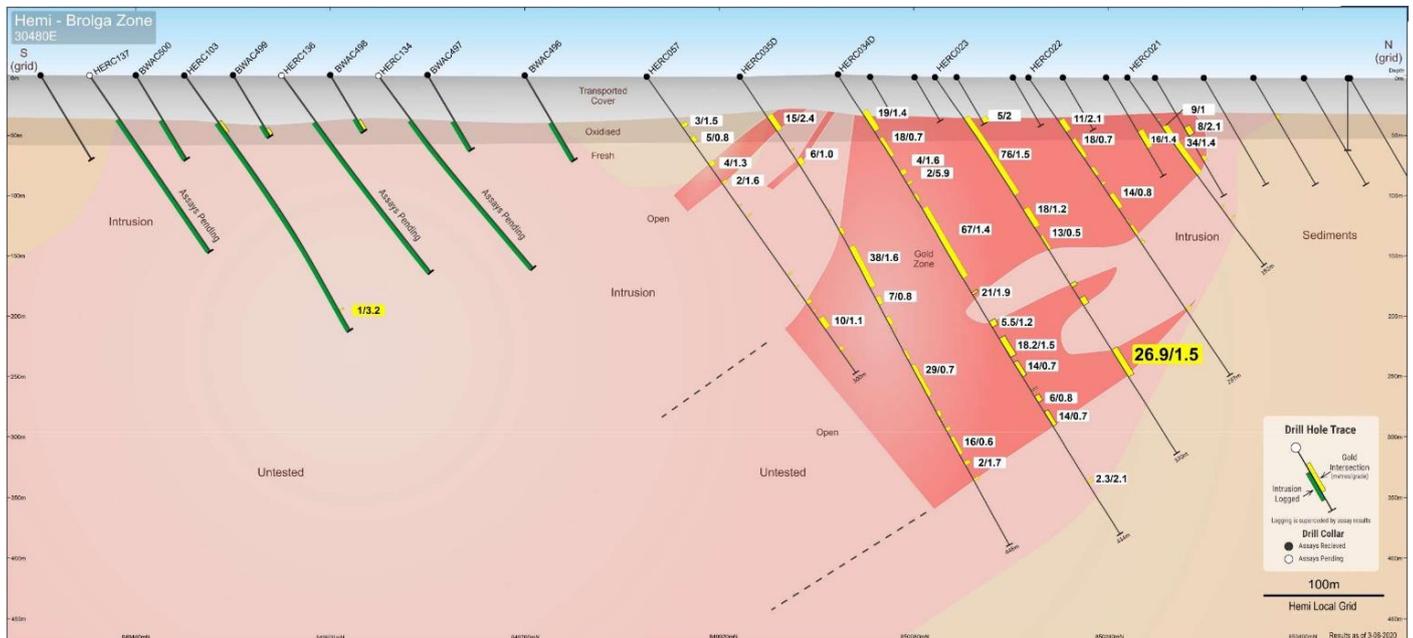
Source: DEG

## Hemi still growing

Ongoing drilling continues to grow the extents of Hemi. Recent AC and RC drilling at Brolga has shown that this zone has potential for extensions to the south and southwest. Currently, Brolga covers an area of >640m long by 300m wide and is mineralised to +300m below surface. Recent drill results from up-dip and down-dip extension from infill RC drilling on a circa 80m x 80m spacing included:

- 26.9m @ 1.5g/t Au from 269m in HERC23D
- 19m @ 2.7g/t Au from 203m in HERC032D incl 3m @ 14.7g/t Au from 203m
- 16.3m @ 1.1g/t Au from 214m in HERC056D
- 16m @ 1.2g/t Au from 202m in HERC055D

Figure 2. Cross section through section line 304,800E showing recent drill intercepts



Source: DEG

Step out AC drilling and follow up RC drilling show that the mineralised Brolga intrusion is extending to the south and southeast, incorporating:

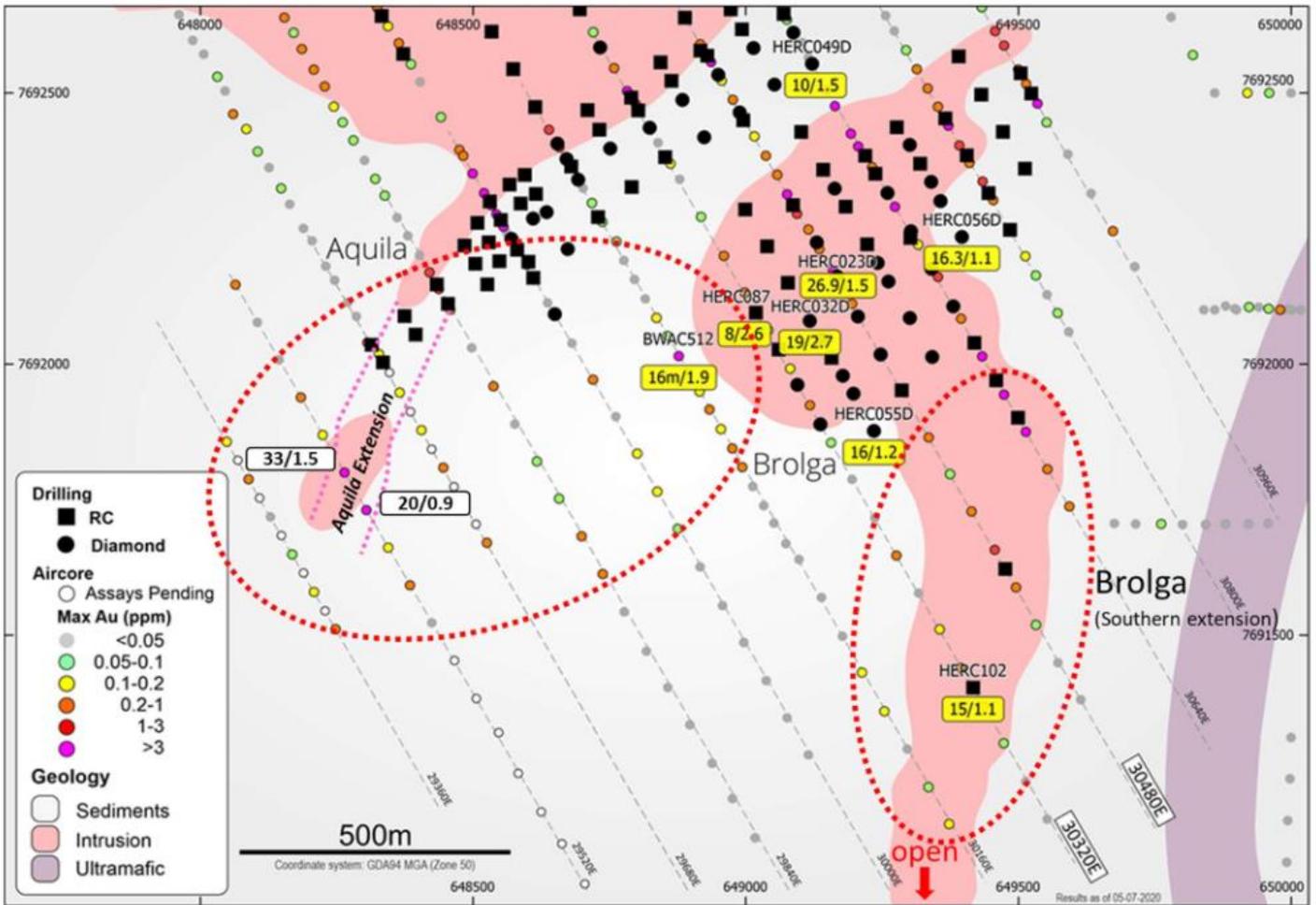
Initial RC drilling in the newly discovered Brolga south zone currently being drilling on an 80m x 80m pattern:

- 5m @ 1.1g/t Au from 59m in HERC102
- 15m @ 1.1g/t Au from 223m in HERC102

New shallow AC intercept 160m west of the main Brolga Zone:

- 16m @ 1.9g/t Au from 48m in BWAC512

Figure 2. Recent Hemi drill results in plan view, showing potential extensions to the south and southwest



Source: DEG

## Strategy for growth

DEG has a three-tiered strategy to add value to the Mallina Project. This incorporates:

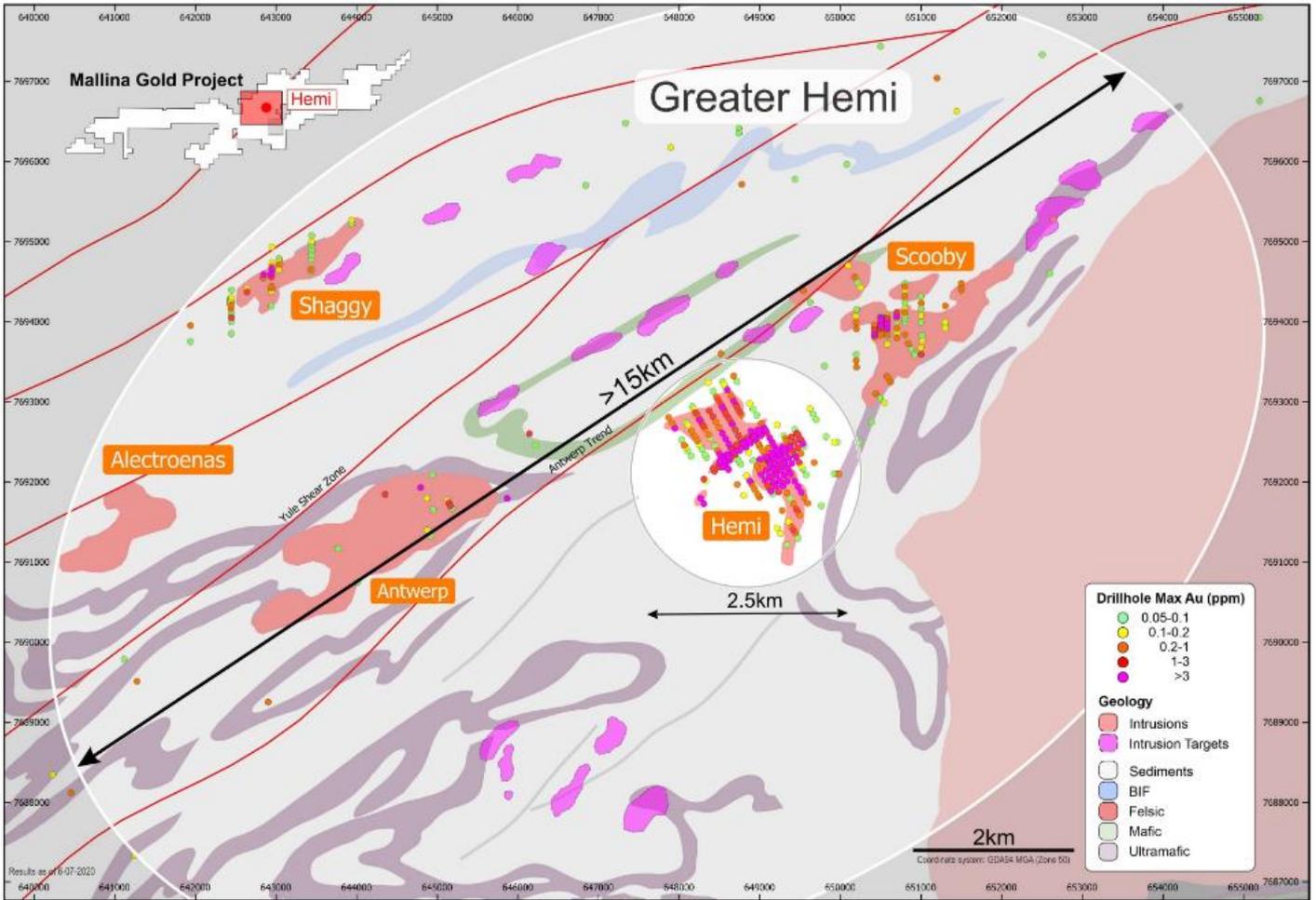
### 1. Grow Hemi to +5Moz

DEG has a corporate goal to define a +5.0Moz resource at Hemi, with the majority in the Indicated category. Due to the wide mineralisation, this should be achievable on ~40m x 40m drill spacing. Argonaut believes +5Moz is highly plausible given that broad mineralisation remains unconstrained from drilling to date. Intrusive systems like Hemi are commonly deep seated which should lead to significant depth potential.

### 2. Find another Hemi

AC drilling has commenced at the Antwerp and Scooby prospects. Both have historic gold intercepts and contain intrusive geology similar to Hemi. In the Hemi region there are currently five identified intrusions, four of which have proven gold mineralisation from drilling. A recent aeromagnetic survey has shown several more clusters and small features interpreted to be intrusive bodies around Hemi. Over the greater Mallina Project, this survey identified greater than 20 new magnetic features, also with potential to be Hemi like mineralised intrusions.

Figure 3. Potential mineralised intrusive bodies (pink) identified from a recent aeromagnetic survey



Source: DEG

### 3. Build on existing resources

The five deposits which make up the existing 2.2Moz gold Resource remain open. DEG has the opportunity to grow these resources and make further non-intrusive related discoveries to incrementally add to the Mallina gold inventory. It is conceivable that known deposits could surpass 3Moz, which when combined with the 5Moz corporate target for Hemi would equate to +8Moz for the Mallina Project, excluding the potential for more Hemi-like discoveries.

**RESEARCH:**

**Ian Christie** | Head of Research  
+61 8 9224 6872 ichtie@argonaut.com

**Matthew Keane** | Director, Metals & Mining Research  
+61 8 9224 6869 mkeane@argonaut.com

**Michael Eidne** | Director, Research  
+61 8 9224 6831 meidne@argonaut.com

**INSTITUTIONAL SALES - PERTH:**

**Chris Wippl** | Executive Director, Head of Institutional Sales  
+61 8 9224 6875 cwippl@argonaut.com

**Damian Rooney** | Director Institutional Sales  
+61 8 9224 6862 drooney@argonaut.com

**John Santul** | Consultant, Sales & Research  
+61 8 9224 6859 jsantul@argonaut.com

**Josh Welch** | Institutional Dealer  
+61 8 9224 6868 jwelch@argonaut.com

**George Ogilvie** | Institutional Dealer  
+61 8 9224 6871 gogilvie@argonaut.com

**INSTITUTIONAL SALES – HONG KONG:**

**Damian Rooney** | Director Institutional Sales  
+61 8 9224 6862 drooney@argonaut.com

**CORPORATE AND PRIVATE CLIENT SALES:**

**Glen Colgan** | Managing Director, Desk Manager  
+61 8 9224 6874 gcolgan@argonaut.com

**Kevin Johnson** | Executive Director, Corporate Stockbroking  
+61 8 9224 6880 kjohnson@argonaut.com

**James McGlew** | Executive Director, Corporate Stockbroking  
+61 8 9224 6866 jmcglew@argonaut.com

**Geoff Barnesby-Johnson** | Senior Dealer, Corporate Stockbroking  
+61 8 9224 6854 bj@argonaut.com

**Ben Willoughby** | Senior Dealer, Corporate Stockbroking  
+61 8 9224 6876 bwilloughby@argonaut.com

**Philip Grant** | Senior Dealer, Corporate Stockbroking  
+61 8 9224 6834, pgrant@argonaut.com

**Rob Healy** | Dealer, Private Clients  
+61 8 9224 6873, rhealy@argonaut.com

**Cameron Prunster** | Dealer, Private Clients  
+61 8 9224 6853 cprunster@argonaut.com

**James Massey** | Dealer, Private Clients  
+61 8 9224 6849 jmassey@argonaut.com

**Chris Hill** | Dealer, Private Clients  
+61 8 9224 6830, chill@argonaut.com

**Harry Massey** | Dealer, Private Clients  
+61 8 9224 6829, hmassey@argonaut.com

**Jonas Dorling** | Assoc. Dealer / Prov. Fin. Advisor, Private Clients  
+61 8 9224 6837, jdorling@argonaut.com

**Important Disclosure**

Argonaut acted as Joint Lead Manager in respect of the Placement that raised \$31.2M in April 2020 and received fees commensurate with this service.

**Information Disclosure**

Each research analyst of this material certifies that the views expressed in this research material accurately reflect the analyst's personal views about the subject securities and listed corporations. None of the listed corporations reviewed or any third party has provided or agreed to provide any compensation or other benefits in connection with this material to any of the analyst(s).

**For U.S. persons only**

This research report is a product of Argonaut Securities Pty Limited, which is the employer of the research analyst(s) who has prepared the research report. The research analyst(s) preparing the research report is/are resident outside the United States (U.S.) and are not associated persons of any U.S. regulated broker-dealer and therefore the analyst(s) is/are not subject to supervision by a U.S. broker-dealer, and is/are not required to satisfy the regulatory licensing requirements of FINRA or required to otherwise comply with U.S. rules or regulations regarding, among other things, communications with a subject company, public appearances and trading securities held by a research analyst account.

This report is intended for distribution by Argonaut Securities Pty Limited only to "Major Institutional Investors" as defined by Rule 15a-6(b)(4) of the U.S. Securities and Exchange Act, 1934 (the Exchange Act) and interpretations thereof by U.S. Securities and Exchange Commission (SEC) in reliance on Rule 15a 6(a)(2). If the recipient of this report is not a Major Institutional Investor as specified above, then it should not act upon this report and return the same to the sender. Further, this report may not be copied, duplicated and/or transmitted onward to any U.S. person, which is not the Major Institutional Investor.

In reliance on the exemption from registration provided by Rule 15a-6 of the Exchange Act and interpretations thereof by the SEC in order to conduct certain business with Major Institutional Investors, Argonaut Securities Pty Limited has entered into an agreement with a U.S. registered broker-dealer, Marco Polo Securities Inc. ("Marco Polo"). Transactions in securities discussed in this research report should be effected through Marco Polo or another U.S. registered broker dealer.

**Hong Kong Distribution Disclosure**

This material is being distributed in Hong Kong by Argonaut Securities (Asia) Limited which is licensed (AXO 052) and regulated by the Hong Kong Securities and Futures Commission. Further information on any of the securities mentioned in this material may be obtained on request, and for this purpose, persons in the Hong Kong office should be contacted at Argonaut Securities (Asia) Limited of Unit 701, 7/F, Henley Building, 5 Queen's Road Central, Hong Kong, telephone (852) 3557 48000.

**General Disclosure and Disclaimer**

This research has been prepared by Argonaut Securities Pty Limited (ABN 72 108 330 650) ("ASPL") or by Argonaut Securities (Asia) Limited ("ASAL") for the use of the clients of ASPL, ASAL and other related bodies corporate (the "Argonaut Group") and must not be copied, either in whole or in part, or distributed to any other person. If you are not the intended recipient you must not use or disclose the information in this report in any way. ASPL is a holder of an Australian Financial Services License No. 274099 and is a Market Participant of the Australian Stock Exchange Limited. ASAL has a licence (AXO 052) to Deal and Advise in Securities and Advise on Corporate Finance in Hong Kong with its activities regulated by the Securities and Futures Ordinance ("SFO") administered by the Securities and Futures Commission ("SFC") of Hong Kong.

Nothing in this report should be construed as personal financial product advice for the purposes of Section 766B of the Corporations Act 2001 (Cth). This report does not consider any of your objectives, financial situation or needs. The report may contain general financial product advice and you should therefore consider the appropriateness of the advice having regard to your situation. We recommend you obtain financial, legal and taxation advice before making any financial investment decision.

This research is based on information obtained from sources believed to be reliable and ASPL and ASAL have made every effort to ensure the information in this report is accurate, but we do not make any representation or warranty that it is accurate, reliable, complete or up to date. The Argonaut Group accepts no obligation to correct or update the information or the opinions in it. Opinions expressed are subject to change without notice and accurately reflect the analyst(s)' personal views at the time of writing. No member of the Argonaut Group or its respective employees, agents or consultants accepts any liability whatsoever for any direct, indirect, consequential or other loss arising from any use of this research and/or further communication in relation to this research.

Nothing in this research shall be construed as a solicitation to buy or sell any financial product, or to engage in or refrain from engaging in any transaction. The Argonaut Group and/or its associates, including ASPL, ASAL, officers or employees may have interests in the financial products or a relationship with the issuer of the financial products referred to in this report by acting in various roles including as investment banker, underwriter or dealer, holder of principal positions, broker, director or adviser. Further, they may buy or sell those securities as principal or agent, and as such may effect transactions which are not consistent with the recommendations (if any) in this research. The Argonaut Group and/or its associates, including ASPL and ASAL, may receive fees, brokerage or commissions for acting in those capacities and the reader should assume that this is the case.

There are risks involved in securities trading. The price of securities can and does fluctuate, and an individual security may even become valueless. International investors are reminded of the additional risks inherent in international

investments, such as currency fluctuations and international stock market or economic conditions, which may adversely affect the value of the investment.

The analyst(s) principally responsible for the preparation of this research may receive compensation based on ASPL's and / or ASAL's overall revenues.

**Copyright**

© 2020. All rights reserved. No part of this document may be reproduced or distributed in any manner without the written permission of Argonaut Securities Pty Limited and / or Argonaut Securities (Asia) Limited. Argonaut Securities Pty Limited and Argonaut Securities (Asia) Limited specifically prohibits the re-distribution of this document, via the internet or otherwise, and accepts no liability whatsoever for the actions of third parties in this respect.