



ARGONAUT
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EQUITY RESEARCH

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SPEC BUY

Current Price \$0.25
Valuation \$0.38

Code: **MGV**
Sector: **Metals and Mining**

* All figures in AUD unless stated otherwise

Shares on Issue (M): **541**
Market Cap (\$M): **135**
cash **11**
debt **0**
Net cash (\$M Jun 2022) **11**
Enterprise value (\$M): **125**

52 wk High/Low (ps): **\$0.41** **\$0.23**
12m av. daily vol. (Mshs): **0.68**

Key Metrics

	FY24e	FY25e	FY26e
P/E (x)	3.1	2.2	3.5
EV/EBITDA (x)	1.6	1.0	1.5

Financials:

	FY24e	FY25e	FY26e
Revenue (\$M)	106	182	136
EBIT (\$M)	73	124	76
NPAT (A\$M)	59	85	52
Net assets (\$M)	112	220	260
Op CF (\$M)	76	116	46

Per share data:

	FY24e	FY25e	FY26e
EPS (c)	8.2	11.8	7.2
Dividend (cps)	-	-	-
Yield (%)	-	-	-
CF/Share (cps)	10.5	16.0	6.4
Prod (koz Au)	43.8	75.5	56.4



Please refer to important disclosures at the end of the report (from page 11)

Tuesday, 4 October 2022

Musgrave Minerals (MGV)

Sweet Spot

Analyst | Royce Haese

Quick Read

High-grade oxide ore with three under-utilised mills within trucking distance plus a JV partner with deep pockets. Optionality abounds for Musgrave Minerals. With a Resource approaching critical mass for a development decision Musgrave is in an enviable position; go it alone or develop in partnership. Either scenario will provide significant upside for shareholders, and there is plenty of search-space for further high-grade ounces. We initiate coverage with a Speculative Buy recommendation and a valuation of 38 cents per share.

Sweet Spot

Grade is King (Sometimes): Musgrave has defined two high-grade Resources in Break of Day and White Heat-Mosaic for 327koz @ 10.4 g/t Au, or 228koz @ 12.5 g/t Au in the higher-confidence Indicated category. These are high-grade lodes essentially to surface. When mined, drill hits such as 20MORC068's 14 m @ 191.1 g/t Au from 4 m depth will provide high-margin ounces with limited strip. White Heat has been drilled to a relatively shallow 160 m depth and remains open. Hints of further high-grade discoveries have been reported along the Break of Day trend, and also along the Big Sky trend to the west.

Flashy headline exploration results don't always flesh out to mineable high-grade projects, poor repeatability/continuity or depth can make follow-up drilling cost prohibitive, the grade of the Cue deposits and proximity to surface puts this project in rare air.

Meaningful ounces are also held in Lena and Big Sky, 325koz @ 2.3 g/t Au and 173koz @ 1.2 g/t Au respectively. These represent near-surface bulk tonnage deposits more akin to the standard WA goldfields pit project, most likely profitable in their own right. If MGV plans to run a standalone operation, these higher tonnage projects will provide consistent baseload mill feed. Plus, on prior form, as infill/extensional drilling continues at these prospects there's every chance further high-grade shoots will be intersected.

Argonaut's Mining Scenario and Valuation: Musgrave has PFS level studies underway with no timeframe committed to at this stage. While MGV's studies will likely envisage a standalone operation, for our modelling purposes we assume 500ktpa mined and trucked to Gascoyne Resources' (ASX:GCY) Dalgaranga processing facility. We use our back of the envelope assumptions to outline a base case, low start-up capex, pit mining/toll treating operation with plenty of uncaptured upside. E.g. we do not factor in any underground mining which at Musgrave's grades should be a gimme. Using an 8% real after tax discount rate we value the Cue Gold Project at \$204M. Further details outlined herein.

Recommendation

We initiate coverage with a Spec Buy recommendation and a valuation of \$0.38 per share.

Musgrave Minerals Limited

Equities Research

Analyst: Royce Haese

Recommendation **Speculative Buy**
 Current Price **\$0.25**
 Valuation **\$0.38**

Sector **Metals & Mining**
 Issued Capital (Mshs) **541**
 Market Cap (M) **\$135**
 Tuesday, 4 October 2022

Profit & loss (\$M) 30 June	2023E	2024E	2025E	2026E
Sales Revenue	0	106	182	136
+ Other income/forwards	0	0	0	0
- Operating costs	0	-23	-44	-44
- Royalties	0	-3	-5	-3
- Corporate & administration	-2	-4	-4	-4
Total Costs	-2	-29	-52	-52
EBITDA	-2	76	130	84
margin	0%	74%	71%	62%
- D&A	0	-3	-6	-8
EBIT	-2	73	124	76
+ Finance Income/Expense	0	0	0	0
PBT	-2	73	124	76
- Tax expense	0	-14	-38	-24
- Impairments and other	0	0	0	0
NPAT	-2	59	85	52

Cash flow (\$M)	2023E	2024E	2025E	2026E
+ Revenue	0	106	182	136
- Cash costs	-2	-29	-52	-52
- Forwards	0	0	0	0
-Tax payments	0	0	-14	-38
+ Interest & other	0	0	0	0
Operating activities	-2	76	116	46
- Property, plant, mine devel.	0	-30	-6	-1
- Exploration	-8	-8	-8	-8
- Deferred Consideration	0	0	0	0
Investment activities	-8	-38	-14	-9
+ Borrowings	0	0	0	0
- Dividends	0	0	0	0
+ Equity	40	0	0	0
Financing activities	40	0	0	0
Cash change	30	38	102	37

Balance sheet	2023E	2024E	2025E	2026E
Cash & bullion	41	79	181	218
Other Current Assets	0	0	0	0
Total current assets	41	79	181	218
Property, plant & equip.	14	49	57	57
Investments/other	0	0	0	0
Total non-curr. assets	14	49	57	57
Total assets	55	128	238	276
Trade payables	2	8	9	8
Short term borrowings	0	0	0	0
Other	2	8	9	8
Total curr. liabilities	3	16	18	15
Long term borrowings	0	0	0	0
Other	0	0	0	0
Total non-curr. liabil.	0	0	0	0
Total liabilities	3	16	18	15
Net assets	52	112	220	260

Financial ratios		2024E	2025E	2026E	2027E
GCFPS	Ac	10.5	16.0	6.4	8.3
CFR	X	0.0	0.0	0.0	0.0
EPS	Ac	8.2	11.8	7.2	7.1
PER	X	3.1	2.2	3.5	3.6
DPS	Ac	-	-	-	-
Yield	%	-	-	-	-
Interest cover	x	0.0	0.0	0.0	0.0
ROCE	%	148%	218%	133%	132%
ROE	%	65%	56%	29%	24%
Gearing	%	0%	0%	0%	0%

Operations summary	2024E	2025E	2026E	2027E
Cue Gold Project				
Ore processed (Mt)	0.3	0.5	0.5	0.5
Head grade (g/t)	5.69	5.33	3.81	3.81
Met. recovery	92%	92%	92%	92%
Gold prodn (koz)	44	75	56	56
Cost per milled tonne (A\$/t)	88	91	88	89
Cash costs pre royalty (A\$/oz)	521	584	784	789
Sustaining capital (\$M)	0	1	1	1
All in sustaining costs (A\$/oz)	586	653	857	862
Growth capital (\$M)	38	13	8	8
CAIC (A\$/oz)	723	1071	1749	1502

Price assumptions	2024E	2025E	2026E	2027E
AUDUSD	0.725	0.725	0.725	0.725
Gold	USD 1750	1750	1750	1750

Valuation summary	A\$M	A\$/sh
Cue Gold Project 8% real after tax	204	0.38
Exploration	41	0.08
Corporate Overheads	-24	-0.05
Cash and bullion	11	0.02
Debt	0	0.00
Tax benefit	9	0.02
Hedging	0	0.00
Option/equity dilution	-32	-0.06
NAV	207	0.38

Directors, management	
Graham Ascough	Non-Executive Chairman
Rob Waugh	Managing Director
Anthony Buckingham	GM - Development
Kelly Ross	Non-Executive Director
John Percival	Non-Executive Director
Brett Lambert	Non-Executive Director

Top shareholders	M shs	%
Westminex Group	50.0	9.3
Jetosea	32.1	5.9

Resources May '22	Mt	g/t Au	Kozs	Mkt cap/oz
Cue Gold Project	12.3	2.30	927	146
Indicated	5.1	2.60	435	
Inferred	7.2	2.10	492	

Argonaut model Oct '22	Mt	g/t Au	Kozs	
TOTAL INVENTORY	4.7	2.65	401	337.3
Lena	2.3	2.00	145	
Break of Day	0.5	10.00	145	
Big Sky	1.9	1.10	66	
White Heat-Mosaic	0.1	10.00	45	

*See Argonaut Mining Scenario and Valuation section for Equity assumptions

Shares	2023E	2024E	2025E	2026E
New shs issued/exerciseable	183	0	0	0
Average issue price	0.22	0.00	0.00	0.00
Ordinary shares - end	724	724	724	724
Diluted shares - end	724	724	724	724

Sweet Spot

Musgrave consolidated 100% ownership of the Cue Gold Project in August 2017

Musgrave estimates White Heat-Mosaic and Break of Day to contain 327kozs @ 10.4 g/t Au between them

Discovery Background

Musgrave initially commenced drilling at Cue in February 2016 under a Joint-Venture with Silver Lake Resources (ASX:SLR), with MGV funding exploration to earn into the project. At the time, Moyagee held an estimated 127kozs Au at 2.0 g/t. Originally, the agreement held provisions for Musgrave to earn up to 80% of the project through cash/scrip payments plus expenditure commitments. In August 2017, Musgrave acquired the remainder of the interest in the ground.

Musgrave identified high-grade mineralisation at Break of Day rapidly, with multiple +20g/t Au intersections reported in its first programme completed at the project. Musgrave's Cue project has regularly topped charts of highest tenor drill intersections at Break of Day and other high-grade discoveries, such as White Heat-Mosaic. Break of Day and White Heat-Mosaic now contain an estimated 327kozs @ 10.4 g/t Au between them, with room to grow at depth. Exploration from first principals has identified a high-titanium zonation within the basalt host unit which appears to preferentially host high-grade mineralisation, exploration efforts are currently underway to test for further high-grade shoots within this unit.

Two larger, lower-grade Resources have also been defined at Cue, in Lena and Big Sky, 325kozs @ 2.3 g/t Au and 173kozs @ 1.2 g/t Au respectively. At Big Sky, numerous higher-grade intersections have also been reported, hinting at potential high-grade shoots within the broader mineralised zone.

Table 1: May 2022 Resource estimate by prospect

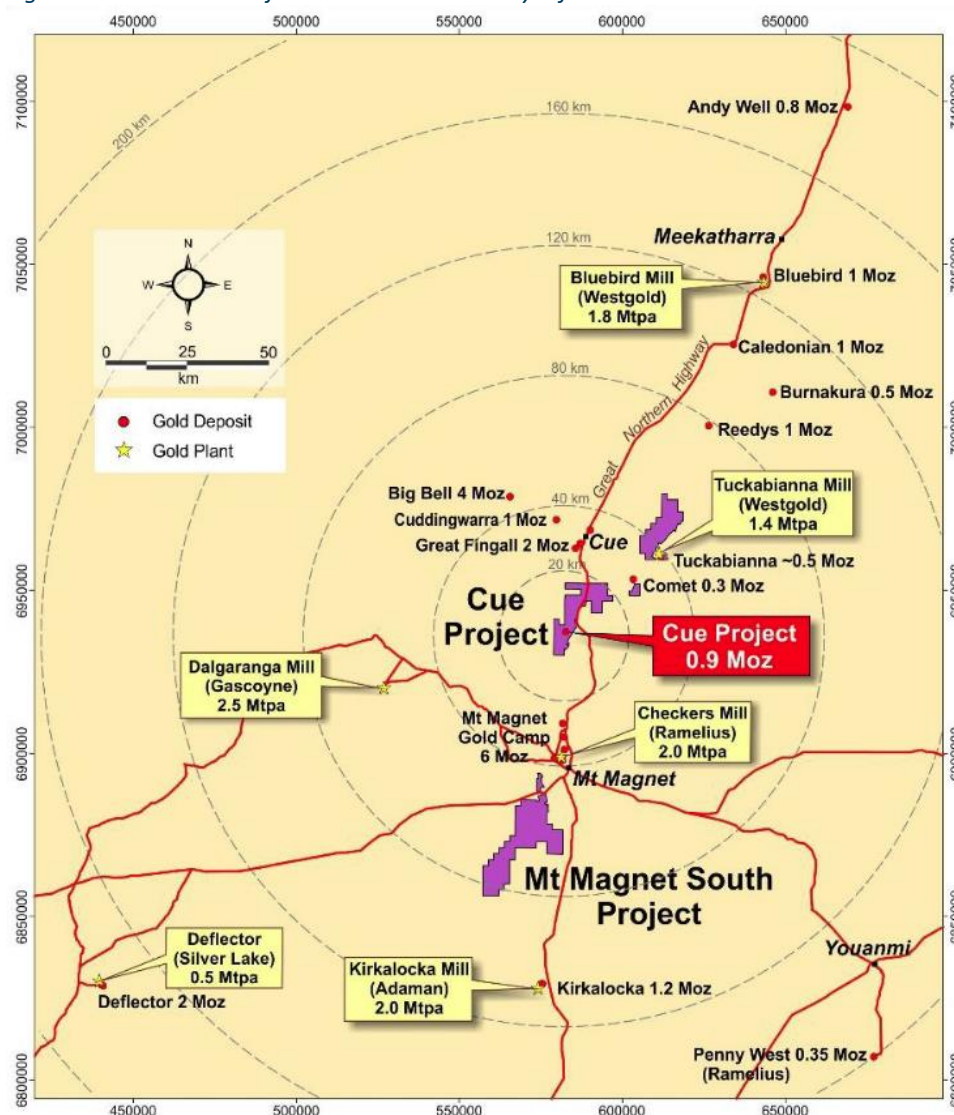
Resources	Indicated			Inferred			Total		
	kt	g/t	kozs	kt	g/t	kozs	kt	g/t	kozs
Break of Day	451	12.1	176	346	7.7	86	797	10.2	262
White Heat-Mosaic	116	14.1	52	70	5.8	13	185	11.0	65
Lena	2,253	1.7	121	2,053	3.1	204	4,305	2.3	325
Big Sky	1,170	1.3	48	3,480	1.1	125	4,650	1.2	173
Leviticus	-	-	-	42	6.0	8	42	6.0	8
Numbers	438	1.4	19	378	1.3	16	817	1.3	35
Hollandaire*	436	0.3	4	121	0.4	2	557	0.3	6
Hollandaire Gold Cap	197	1.3	9	62	1.2	2	260	1.3	11
Rapier South	-	-	-	258	1.7	14	258	1.7	14
Jasper Queen	-	-	-	332	1.7	19	332	1.7	19
Gilt Edge	69	2.6	6	34	3.6	4	102	2.9	10
Total Resources	5,129	2.6	435	7,175	2.1	492	12,306	2.3	927

Source: MGV

The Cue Project is favourably located in close proximity to a number of under-utilised processing facilities

The presence of near-surface, high-grade zones of coherent mineralisation is one key differentiator of Musgrave's Cue project, the other is proximity to under-utilised infrastructure. The Cue project is within comfortable trucking distance of three processing facilities: Gascoyne's (ASX:GCY) Dalgaranga, Westgold's (ASX:WGX) Tuckabianna, Ramelius' (ASX:RMS) Checkers. Checkers the closest at ~55 km by road, Tuckabianna ~60 km by road and Dalgaranga ~125 km by road.

Figure 1: MGV's Cue Project location with nearby infrastructure



Source: MGV

Musgrave is currently completing PFS level studies with the aim to progress standalone development

North of MGV's 100% ground, Evolution mining is earning up to 75% in the Lake Austin project. We expect EVN to meet its minimum expenditure commitment early

This proximity to existing infrastructure may provide potential for Musgrave to monetise its known Resources to fund ongoing exploration/development if required. Musgrave is currently completing PFS level studies with the aim to progress standalone development.

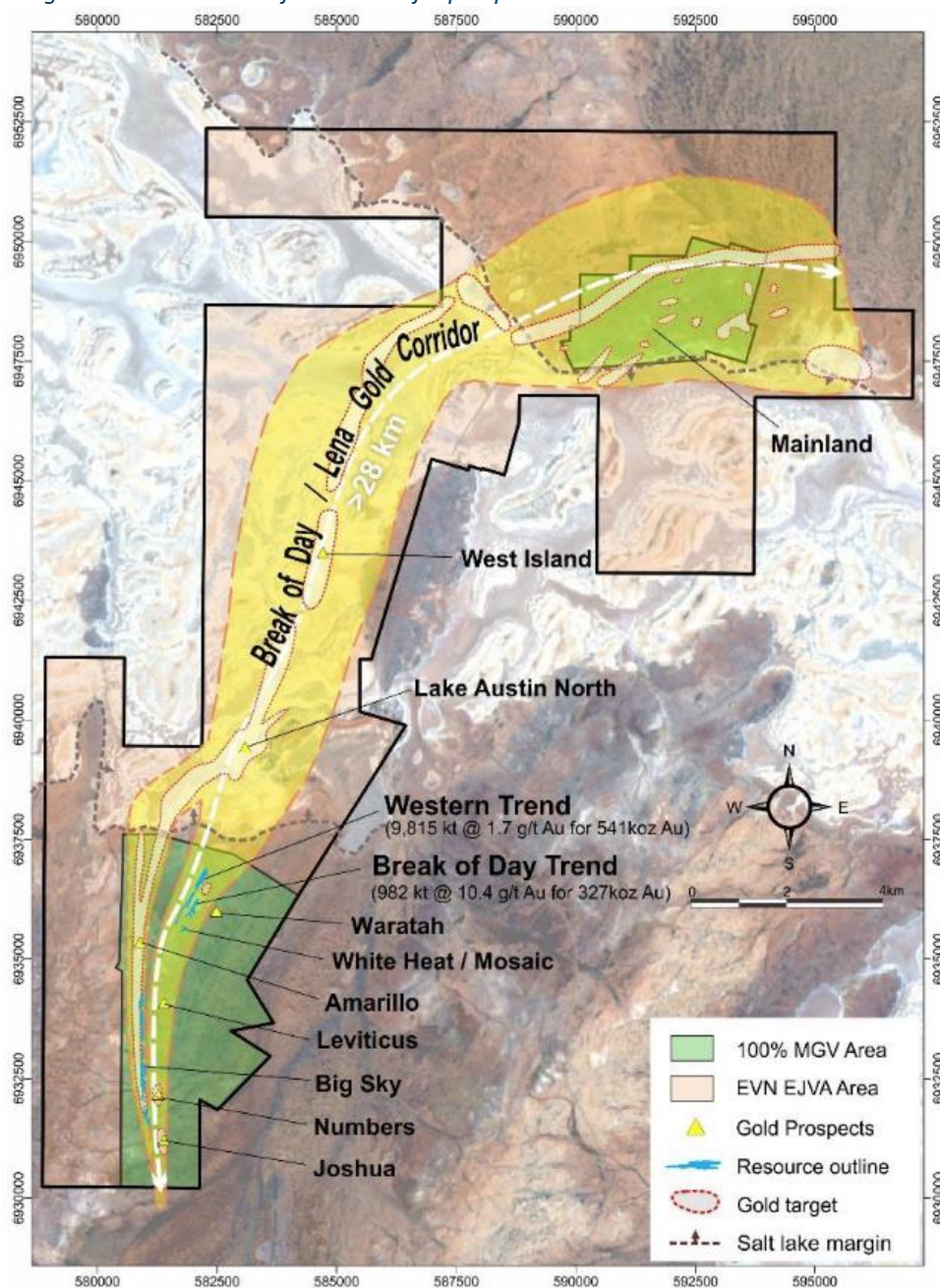
The Lena-Break of Day trends extend to the north underneath Lake Austin salt-lake cover. Musgrave has farmed out exploration of this ground to Evolution Mining (ASX:EVN). EVN is able to earn up to 75% through exploration expenditure of at least \$18M over a five-year period commencing September 2019. As at mid-this year, EVN had spend ~\$13M on the JV and had committed a further \$5M in the second half of this year, meaning it will comfortably meet its expenditure commitment early.

The bulk of Evolution's work so far has been in compiling base-level datasets through regional aircore programmes. Some diamond drilling has been completed targeting high-grade shoots within a fractionated dolerite, to date, EVN has identified four mineralised zones and interprets stacked mineralised lodes. Of importance to MGV, this fractionated

EVN's Lake Austin dolerite target represents an under-drilled target on the MGV 100% ground

dolerite extends to the south onto Musgrave's 100% tenure, and has only been subject to early stage exploration to-date with the focus on the basalt hosted targets.

Figure 2: MGV's Cue Project with major prospects and JV status outlined



Source: MGV

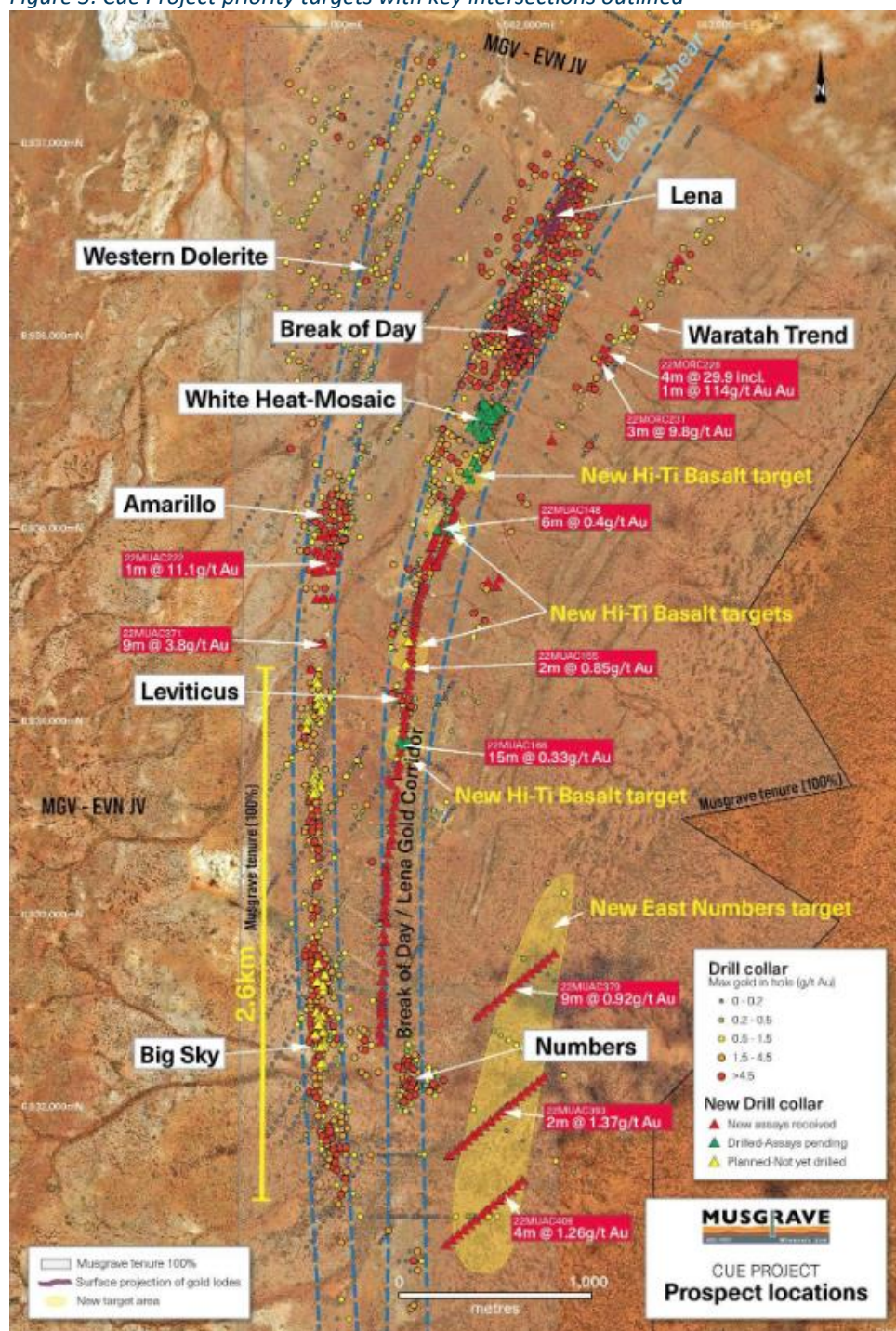
Musgrave has a track record of discovery and conversion into estimated Resources

Significant exploration upside remains at the Cue project. Numerous early-stage targets have been identified and overall drilling has only scratched the surface. As an example, White Heat was only discovered in November 2020, with the maiden Resource estimated 18 months later. White Heat has only been drilled to ~160 m and remains open at depth. Drilling is ongoing following up high-grade hits within the Waratah trend and Amarillo targets, and regional aircore has identified priority targets along the Break of Day/White Heat trend, drill testing also ongoing. Another potential mineralised trend has also been

identified running parallel to the east of the southern extent of the Lena-Break of Day trend.

The Cue project hosts many exploration targets at varying levels of development

Figure 3: Cue Project priority targets with key intersections outlined



Source: MGJV

Cue is a target rich environment that has already demonstrated potential to host both high-grade deposits, and broader but more consistent low-grade orebodies. Of equal importance, Musgrave's exploration team continues to take a measured approach to exploration investment ensuring efficient allocation of capital to both early-stage data acquisition and Resource development drilling.

Argonaut's Mining Scenario and Valuation

Musgrave has PFS level studies underway with no timeframe committed to at this stage. If we were to set the threshold to warrant development at what appears to be the industry preferred eight to ten years at 100kozpa the Resource base at Cue is not yet large enough to support this scale of development. A smaller scale standalone scenario would likely generate significant free-cash, but in the current inflationary environment we prefer a low capex option until further exploration success can support a longer mine-life after investment.

Three processing facilities in the region all have the capacity to treat excess ore, especially oxide ore. Gascoyne's (ASX:GKY) Dalgara, Westgold's (ASX:WGX) Tuckabianna, Ramelius' (ASX:RMS) Checkers. Checkers the closest at ~55 km by road, Tuckabianna ~60 km by road and Dalgara ~125 km by road.

For our valuation purposes we have assumed toll treating of the existing Cue deposits. We've selected Dalgara as the most likely destination due to it having the largest annual throughput, lowest current head grade, and cheapest operating cost, even when factoring in transport charges. We assume a 125 km truck at 14c/t/km from Cue to Dalga, and a flat \$30/t processing fee. We've assumed 500ktpa mined, trucked and processed with ore sourced from White Heat, Break of Day, Lena and Big Sky, with higher-grade ore front ended.

We assume mining from Lena, Break of Day, Big Sky and White Heat-Mosaic. For mining inventory we've assumed the entirety of the existing Indicated Resource plus 20% of the Inferred Resource at the more shallowly drilled Big Sky and White Heat. This is potentially a bit high for the current level of exploration but we think this inventory will be back-filled as drilling continues. Table 2 outlines our assumed inventory and contribution from each deposit:

Table 2: Argonaut assumed mining inventories by deposit at Cue utilised in Argonaut's Mining scenario as basis for project level valuation.

	Mt	Grade	Oz	Strip
Lena	2.3	2.0	145	7
Break of Day	0.5	10.0	145	20
Big Sky	1.9	1.1	66	8
White Heat	0.1	10.0	45	15
Total	4.7	2.6	401	-

Source: Argonaut

We assume \$5M in early works at each deposit, plus \$15M in pre-production capex for a total of \$35M. Assumed mining plus trucking costs vary by deposit but average to \$50/t, heavily weighted down by higher tonnage/lower-strip mining at Big Sky and Lena.

We assume metallurgical recovery of 92%, conservative in our view. Preliminary work at Lena and Break of Day has demonstrated +95% recovery using gravity plus cyanide leach. Samples from Big Sky White Heat have been submitted for testing with results expected November. On our modelling the first four years of mining/processing produce 58kozpa, dropping to 25kozpa as ore from the high-grade pits is depleted and the mill is fed solely from Lena/Big Sky. For our valuation purposes we assume first gold early 2024, noting that

Standalone development is likely the preferred option for Musgrave but in our view further exploration success is required to justify

Three processing facilities in the region all have the capacity to treat excess ore

For our valuation purposes we have assumed toll treating of the existing deposits at Cue

We assume a 125 km truck at 14c/t/km from Cue to Dalga, and a flat \$30/t processing fee

We assume \$35M in pre-production capex

We assume metallurgical recovery of 92%, conservative in our view. Preliminary work at Lena and Break of Day has demonstrated +95% recovery

Using an 8% real after-tax discount rate, we value the Cue Gold Project at \$204M, or \$0.38 per share

Exploration upside remains a key value driver for Musgrave

As a sum of parts Argonaut values Musgrave at \$207M, or \$0.38 per share

We see limited downside risk to Musgrave in the short to medium term

this would be an aggressive timeline, although not impossible from a permitting standpoint.

Argonaut has used internal gold price estimates which average to US\$1750 across the life of the project, and an AUD to USD currency conversion rate of \$0.725.

Using our admittedly rubbery assumptions and an 8% real after-tax discount rate, we value the Cue Gold Project at \$204M, or \$0.38 per share.

In our view exploration upside remains a key value driver for Musgrave, whilst some exploration success will be required to shore up our assumed mining scenario, we apply a nominal exploration value equal to 20% of the Cue Gold Projects current valuation, or \$41M.

At this stage we assume the start-up to be fully funded by equity raised, although no doubt the project could carry some debt if warranted. We assume \$40M raised at 22cps next year. In our model this raise sees Musgrave through to first cashflow. The equity raise plus the small amount of in-the-money options outstanding result in equity dilution in net present value terms of \$32M.

As a sum of parts Argonaut values Musgrave at \$207M, or \$0.38 per share. This valuation includes Argonaut's mining scenario for the Cue Gold Project, plus a nominal exploration valuation, current cash and equivalents, and future tax benefit. Corporate overheads and equity dilution are also included.

Table 3: Argonaut's Musgrave Valuation Summary

Valuation summary	A\$M	A\$/sh
Cue Gold Project 8% real after tax	204	0.38
Exploration	41	0.08
Corporate Overheads	-24	-0.05
Cash and bullion	11	0.02
Debt	0	0.00
Tax benefit	9	0.02
Hedging	0	0.00
Option/equity dilution	-32	-0.06
NAV	207	0.38

Source: Argonaut

Key Risks to Valuation

As a gold developer with potential for a low-capex start-up in the current inflationary environment, we see limited downside risk to Musgrave in the short to medium term. The main headwind Musgrave will face will be overall gold sentiment, although as one of few developers with near-surface, high-grade ounces, we think Musgrave should weather these headwinds better than most.

Our project level valuation and assumptions are at this stage low confidence estimates based on a toll-treating arrangement that differs to Musgrave's probable base-case. We suggest this is an appropriate valuation methodology as it estimates a price-floor should the project be sold today. We see significant exploration upside at Cue so expect the project to grow in scope and scale with time, which will likely improve project economics.

We use an 8% real after-tax discount rate to value the Cue Gold Project at \$204M, if a higher discount rate of 10% were used our valuation drops to \$190M, at a 5% discount rate our valuation improves to \$227M.

At spot gold and exchange rate (US\$1700/oz, \$0.65) our project level valuation improves to \$342M

We consider our 92% recovery rate conservative due to historical work demonstrating +95% recoveries from Lena/Break of Day. If we were to assume 95% recovery our project level valuation would improve to \$218M.

Gold price and AUD:USD exchange rate impact our valuation. We use our long term USD gold price estimate of US\$1750/oz and exchange rate of 0.725 AUD:USD. At spot gold and current exchange rate (US\$1700/oz, \$0.65) our project level valuation improves to \$240M which would result in NAV of \$0.44 per share.

Table 4: Argonaut's Cue project level valuation under varying gold price/exchange rate assumptions.

		Gold Price (US\$)				
		-10%	-5%	Base	+5%	+10%
		1575	1662.5	1750	1837.5	1925
AUD:USD	0.80	123	143	163	183	202
	0.75	147	168	189	210	231
	0.725	161	182	204	225	247
	0.70	174	197	219	242	264
	0.65	205	229	254	278	302
	0.60	242	268	294	320	346

Source: Argonaut

Summary

- High-grade gold near surface plus larger bulk-tonnage baseload
- Significant discovery upside plus an exploration team with a track record
- Under-utilised infrastructure in the region

Directors and Management

Rob Waugh – Managing Director

Geologist. Prior exploration and management roles at WMC and BHP Billiton Exploration Ltd. Multi-commodity experience.

Graham Ascough – Non-Executive Chairman

Geophysicist. Previously Managing Director at Mithril Resources 2006-2012. Currently Non-Executive Chair at Sunstone Metals (ASX:STM), Black Canyon (ASX:BCA), and PNX Metals (ASX:PNX).

Kelly Ross – Non-Executive Director

Accountant. Prior Executive Director at IGO Limited (ASX:IGO).

John Percival – Non-Executive Director

Prior Investment Manager of Barclays Bank New Zealand.

Brett Lambert – Non-Executive Director

Mining Engineer. Currently Non-Executive Chair at Mincor Resources (ASX:MCR), Saturn Metals (ASX:STN), Metal Hawk (ASX:MHK).

Table 5: Musgrave's board and management holdings

	Position	Opts M	Perf. rights M	Shares M	Exposure M	%
Graham Ascough	Non Exec Chair	2.25		3.3	5.6	1.0
Rob Waugh	MD	3		8.3	11.3	2.1
Kelly Ross	NED	1.5		1.6	3.1	0.6
John Percival	NED	1.3		1.0	2.3	0.4
Brett Lambert	NED	1.5			1.5	0.3
Total		9.6		14.2	23.8	

Source: MGV

Anthony Buckingham – General Manager-Development

Mining Engineer. Multi-commodity experience in Western Australia, most recently COO at Westgold Resources, currently driving Musgrave's mining study work.

Jonathan Gough – Exploration Manager

Geologist. Experience in exploration/mining in Western Australia. Prior roles with Northern Star, Kin Resources, Barrick Gold.

In our view, Musgrave's board and management has the requisite skills to advance the project. The exploration team has demonstrated success and the more recent appointments of personnel with mining focus demonstrates MGV's intent to advance the project.

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Information Disclosure

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