

## MILLENNIUM MINERALS LTD (MOY)

### Nullagine set for production growth to +100kozpa

Millennium's (MOY) plans to commence construction of the sulphide processing circuit for the Nullagine (sulphide) ores in Q3 CY18 for targeted commissioning in Q1 CY19.

The modification of the processing circuit to better recover sulphide ores is one of the key enablers for the Company to increase and sustain production at Nullagine to over 100kozpa. Group reserves and resources were recently updated and highlight a mine life of over 2.5 years on oxide feed alone and well over 5 years after the sulphide ore processing route is introduced.

The processing plant expansion includes the installation of a gravity sulphide scavenging circuit on the existing CIL tails stream which will then undergo an ultrafine grind and intense cyanidation to improve overall gold recoveries for increased production and improved cash flows. The anticipated capex for the processing expansion is considered light at only A\$15M, with the additional processing costs of A\$3.6/t on the current A\$18.4/t costs for the current CIL plant (total processing costs of ~A\$22/t), seen as a very good outcome. MOY is forecasting overall gold recoveries of 85% on a blended oxide and sulphide ore feed, with met-testwork ongoing expected to improve recoveries further.

Next steps for the sulphide plant works include: re-optimisation of the sulphide resource and reserve inventory (JunQ and SepQ), plant equipment procurement (JunQ), mine plan update (JunQ), plant construction (SepQ) for commissioning Q1 CY19.

### Solid MarQ, CY18 target is 75-80koz at A\$1280-1350/oz AISC

MOY has exceeded MarQ guidance with reported production of 20,323oz (18-20koz guidance) with AISC yet to be reported, but expected to be within the CY18 guidance range (A\$1,280-1,350/oz). Lower production at higher costs are forecast for the JunQ (16-18koz at an AISC range of A\$1,500-1,600/oz) due largely to the pre-stripping requirement to re-open Golden Eagle.

The Company's production and cost guidance for CY18 is 75-80koz at A\$1,280-1,350/oz AISC and expects to be running at the 100kozpa run-rate in Q4 CY18. This compares to CY17 production (actuals) of 72.8koz at an AISC of A\$1,372/oz. Ore sources for CY18 include Golden Eagle (largest deposit +320koz), Redbeard (new oxide feed) and Bartons underground, with portal development now commenced with higher grade ores expected to come into the mine plan by end CY18 and stoping in Q1 CY19.

Cash and bullion increased to A\$23.3M (up from A\$22.4M DecQ), and the Company remains debt free.

### Redbeard oxide zone extending; Move to Accumulate

Latest drilling at the new oxide deposit Redbeard has highlighted resource extensions with significant results of 10.8m @ 6.20g/t Au from 13m, 9m @ 6.21g/t Au from 33m and 6m @ 6.81g/t Au from 54m. Deposit remains open. Open pit mining is set to commence at Redbeard in the SepQ, with additional mineralised zones expected to come into the mine plan in the near-term.

We move to an Accumulate recommendation (from Buy) on valuation grounds and expectation of a softer JunQ, with our latest price target of 26cps. The Company appears well poised for production growth and for mine life extensions. Exploration upside also remains strong.

10 Apr 2018

Share Price	\$0.240
Valuation	\$0.18
Price Target (12 month)	\$0.26

**Brief Business Description:**  
Gold producer in the Pilbara (Nullagine)

**Hartleys Brief Investment Conclusion**  
WA gold producer with both production and mine life growth potential. Fresh ore processing expansion expected to be commissioned in early CY19. Significant exploration upside. Bartons first underground mine now being developed.

**Chairman & CEO**  
Greg Bittar (Non-Exec Chairman)  
Peter Cash (CEO)

**Top Shareholders**  
IMC Resource Investment Pty Ltd 47.8%  
Board & Management 1.9%

**Company Address**  
Ground Floor, 10 Kings Park Road  
West Perth, WA 6873

**Issued Capital** 791.7m  
- fully diluted 837.3m

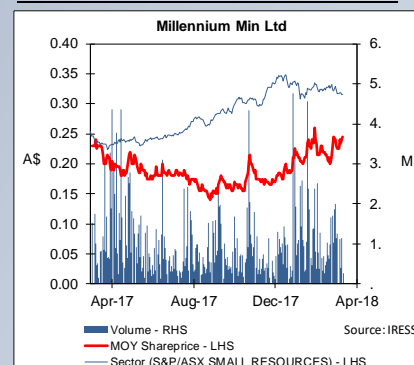
**Market Cap** A\$190.0m  
- fully diluted A\$201.0m

**Cash and Bullion (31 Mar 18a)** A\$23.3m  
**Debt (31 Mar 18a)** A\$0.0m

**EV** A\$166.7m  
**EV/Resource Au oz** 148.6  
**EV/Reserve Au oz** 752.3

Prelim. (A\$m)	CY17a	CY18e	CY19e
Prod (koz Au)	72.9	79.4	100.6
Op Cash Flw	30.8	31.1	46.0
Norm NPAT	-7.3	8.3	21.6
CF/Share (cps)	3.9	3.8	5.3
EPS (cps)	-0.7	0.8	1.9
P/E	-33.6	30.7	0.0

	Au
<b>Resources (Moz)</b>	1.12
<b>Reserves (Moz)</b>	0.22



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

## SUMMARY MODEL

Millennium Min Ltd MOY		Share Price \$0.240				10 April 2018 Accumulate	
<b>Key Market Information</b>							
Share Price		\$0.240				<b>Directors</b>	
Market Capitalisation - ordinary		A\$190m				<b>Company Information</b>	
Net Debt (cash)		-A\$23m				Ground Floor, 10 Kings Park Road	
Market Capitalisation - fully diluted		A\$201m				West Perth, WA 6873	
EV		A\$178m				+61 8 9216 9011	
Issued Capital		791.7m				+61 8 9481 0288	
Options & Rights		45.6m				www.millenniumminerals.com.au	
Issued Capital (fully diluted inc. all options)		837.3m					
Issued Capital (fully diluted inc. all options and new capital)		897.3m					
Valuation		\$0.18					
12month price target		\$0.26					
<b>Top Shareholders</b>							
						m shares	%
IMC Resource Investment Pty Ltd						378.5	47.8%
Board & Management						15.0	1.9%
<b>Reserves &amp; Resources</b>							
		Mt	g/t Au	Koz			
<b>TOTAL RESOURCE &amp; RESERVE</b>							
Measured		4.7	1.4	211			
Indicated		9.9	1.7	527			
Inferred		8.2	1.5	384			
<b>Resource (Total)</b>		<b>22.8</b>	<b>1.5</b>	<b>1,122</b>	<b>Dec-17</b>		
Bartons UG		0.63	4.9	98	Jan-18		
<b>Reserve</b>		<b>4.1</b>	<b>1.7</b>	<b>222</b>	<b>Dec-17</b>		
Reserve (UG) - Bartons		0.3	4.5	39	Jan-18		
<b>Production Summary</b>							
	Unit	Dec 16	Dec 17	Dec 18	Dec 19		
Mill Throughput	Mt	2.0	1.9	1.7	1.6		
Strip Ratio	x	4.2	8.2	5.6	6.0		
Mined grade	g/t	1.6	1.3	1.6	2.3		
Combined Recovery & Payability	%	85%	88%	90%	85%		
Gold Prod	(Koz)	86.3	72.9	79.4	100.6		
Gold Sold	(Koz)	84.4	70.2	79.4	100.6		
M & I Resource Conversion	Mt	35.3%	35.2%	34.5%	30.1%		
Modelled Mining Inventory	Mt	11.9	10.0	8.1	6.4		
Modelled Mine Life	yr	6.3	5.5	5.5	4.5		
<b>Costs</b>							
	Unit	Dec 16	Dec 17	Dec 18	Dec 19		
Cost per milled tonne	\$/t	44.8	47.8	55.0	71.0		
EBITDA / tonne milled ore	\$/t	21.5	11.1	19.3	29.6		
Total cash costs	\$/oz	1,153	1,293	1,299	1,254		
<b>C1: Operating Cash Cost = (a)</b>	\$/oz	1,037	1,303	1,161	1,129		
(a) + Royalty = (b)	\$/oz	1,092	1,359	1,216	1,186		
<b>C2: (a) + depreciation &amp; amortisation = (c)</b>	\$/oz	1,297	1,663	1,486	1,435		
(a) + actual cash for development = (d)	\$/oz	1,348	1,484	1,765	1,289		
<b>C3: (c) + Royalty</b>	\$/oz	1,352	1,719	1,542	1,492		
(d) + Royalty	\$/oz	1,211	1,540	1,216	1,186		
<b>All In Sustaining Cost (AISC)</b>	\$/oz	<b>1,228</b>	<b>1,372</b>	<b>1,325</b>	<b>1,289</b>		
<b>Price Assumptions</b>							
	Unit	Dec 16	Dec 17	Dec 18	Dec 19		
AUDUSD	\$/US\$	0.75	0.77	0.78	0.76		
Gold	US\$/oz	1227	1277	1323	1313		
Gold	\$/oz	1632	1649	1700	1724		
<b>Hedging</b>							
		Dec 16	Dec 17	Dec 18	Dec 19		
Hedges maturing?		No	Yes	Yes	No		
<b>Sensitivity Analysis</b>							
		Valuation			FY18 NPAT		
<b>Base Case</b>		<b>0.18</b>			<b>6.4</b>		
Spot Prices		0.22 (23.5%)			4.0 (-37.0%)		
Spot USD/AUD 0.77, Gold \$1335/oz.							
AUDUSD +/-10%		0.10 / 0.28 (-46.1% / 55.4%)			-5.5 / 20.9 (-186.4% / 227.8%)		
Gold +/-10%		0.27 / 0.09 (49.9% / -50.8%)			19.5 / -6.7 (205.1% / -205.1%)		
Production +/-10%		0.25 / 0.10 (40.5% / -41.6%)			19.9 / -7.2 (212.0% / -212.0%)		
Operating Costs +/-10%		0.12 / 0.24 (-35.2% / 34.9%)			-2.8 / 15.6 (-144.3% / 144.3%)		
<b>Unpaid Capital</b>							
Options and Rights							
<b>Year Expires</b>		No. (m)	\$m	Avg price	% ord		
31-Dec-17		0.0	0.0	0.00	0%		
31-Dec-18		9.8	0.0	0.00	1%		
31-Dec-19		21.2	1.7	0.08	3%		
31-Dec-20		14.6	0.4	0.03	2%		
31-Dec-21		0.0	0.0	0.00	0%		
<b>TOTAL</b>		<b>45.6</b>	<b>2.1</b>	<b>0.05</b>	<b>6%</b>		
<b>Share Price Valuation (NAV)</b>							
		Risked Est. A\$m			Est. A\$/share		
100% Nullagine (pre-tax NAV at disc. rate of 8%)		158.2			0.18		
Other Exploration		60.0			0.07		
Forwards		0.0			0.00		
Corporate Overheads		-38.2			-0.04		
Net Cash (Debt)		23.3			0.03		
Tax (NPV future liability)		-43.7			-0.05		
Options & Other Equity		1.1			0.00		
Hedges		-0.2			0.00		
<b>Total</b>		<b>160.4</b>			<b>0.18</b>		
1.2x NAV					<b>0.21</b>		
<b>Balance Sheet</b>							
	Unit	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19		
<b>Cash</b>	A\$m	<b>25.2</b>	<b>17.9</b>	<b>16.0</b>	<b>47.7</b>		
Other Current Assets	A\$m	20.6	21.5	11.5	14.7		
<b>Total Current Assets</b>	A\$m	<b>45.7</b>	<b>39.3</b>	<b>27.5</b>	<b>62.4</b>		
Property, Plant & Equip.	A\$m	23.1	19.5	21.6	-1.2		
Exploration	A\$m	37.2	50.9	70.9	78.9		
Investments/other	A\$m	0.0	0.0	0.0	0.0		
<b>Tot Non-Curr. Assets</b>	A\$m	<b>60.3</b>	<b>70.3</b>	<b>92.5</b>	<b>77.7</b>		
<b>Total Assets</b>	A\$m	<b>106.0</b>	<b>109.7</b>	<b>120.0</b>	<b>140.1</b>		
Short Term Borrowings	A\$m	-	-	-	-		
Other	A\$m	11.1	21.0	9.5	11.4		
<b>Total Curr. Liabilities</b>	A\$m	<b>11.1</b>	<b>21.0</b>	<b>9.5</b>	<b>11.4</b>		
Long Term Borrowings	A\$m	-	-	-	-		
Other	A\$m	19.2	17.5	17.5	17.5		
<b>Total Non-Curr. Liabil.</b>	A\$m	<b>19.2</b>	<b>17.5</b>	<b>17.5</b>	<b>17.5</b>		
<b>Total Liabilities</b>	A\$m	<b>30.3</b>	<b>38.6</b>	<b>27.0</b>	<b>28.9</b>		
<b>Net Assets</b>	A\$m	<b>75.7</b>	<b>71.1</b>	<b>92.9</b>	<b>111.2</b>		
Net Debt	A\$m	-25.2	-17.9	-16.0	-47.7		
<b>Cashflow</b>							
	Unit	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19		
Operating Cashflow	A\$m	41.9	30.5	31.1	46.0		
Income Tax Paid	A\$m	0.0	0.0	0.0	0.0		
Interest & Other	A\$m	0.1	0.3	0.0	0.0		
<b>Operating Activities</b>	A\$m	<b>42.0</b>	<b>30.8</b>	<b>31.1</b>	<b>46.0</b>		
Property, Plant & Equip.	A\$m	-0.1	-2.1	-28.0	-8.0		
Exploration and Devel.	A\$m	-16.1	-23.3	-20.0	-8.0		
Other	A\$m	-10.0	-12.8	0.0	0.0		
<b>Investment Activities</b>	A\$m	<b>-26.2</b>	<b>-38.1</b>	<b>-48.0</b>	<b>-16.0</b>		
Net Borrowings	A\$m	-4.0	0.0	0.0	0.0		
Equity or "tbc capital"	A\$m	2.0	0.1	15.0	1.7		
Dividends Paid	A\$m	0.0	0.0	0.0	0.0		
<b>Financing Activities</b>	A\$m	<b>-2.0</b>	<b>0.0</b>	<b>15.0</b>	<b>1.7</b>		
<b>Net Cashflow</b>	A\$m	<b>13.8</b>	<b>-7.3</b>	<b>-1.9</b>	<b>31.7</b>		
<b>Shares</b>							
	Unit	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19		
Ordinary Shares - End	m	780.9	787.5	848.5	879.5		
Ordinary Shares - Weighted	m	761.8	784.2	818.0	864.0		
Diluted Shares - Weighted	m	761.8	783.5	816.0	846.0		
<b>Ratio Analysis</b>							
	Unit	31 Dec 16	31 Dec 17	31 Dec 18	31 Dec 19		
Cashflow Per Share	A\$ cps	5.5	3.9	3.8	5.3		
Cashflow Multiple	x	0.0	0.0	0.0	0.0		
Earnings Per Share	A\$ cps	2.2	-0.7	0.8	1.9		
Price to Earnings Ratio	x	10.7	-33.6	30.7	0.0		
Dividends Per Share	AUD	-	-	-	-		
Dividend Yield	%	0.0%	0.0%	0.0%	0.0%		
Net Debt / Net Debt + Equity	%	-50%	-34%	-21%	-75%		
Interest Cover	X	6.5	na	-	-		
Return on Equity	%	16%	na	9%	19%		

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\*"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: 10/04/2018

*The modification of the processing circuit to better recover sulphide ores is one of the key enablers for the Company to increase and sustain production at Nullagine to over 100kozpa*

*Expansion involves the installation of a gravity sulphide scavenging circuit on the existing CIL tails stream which will then undergo an ultrafine grind and intense cyanidation to improve overall gold recoveries*

*The anticipated capex for the processing expansion is only A\$15M, with the additional processing costs of A\$3.6/t for total processing costs of ~A\$22/t, seen as a good outcome*

## SULPHIDE EXPANSION STUDY

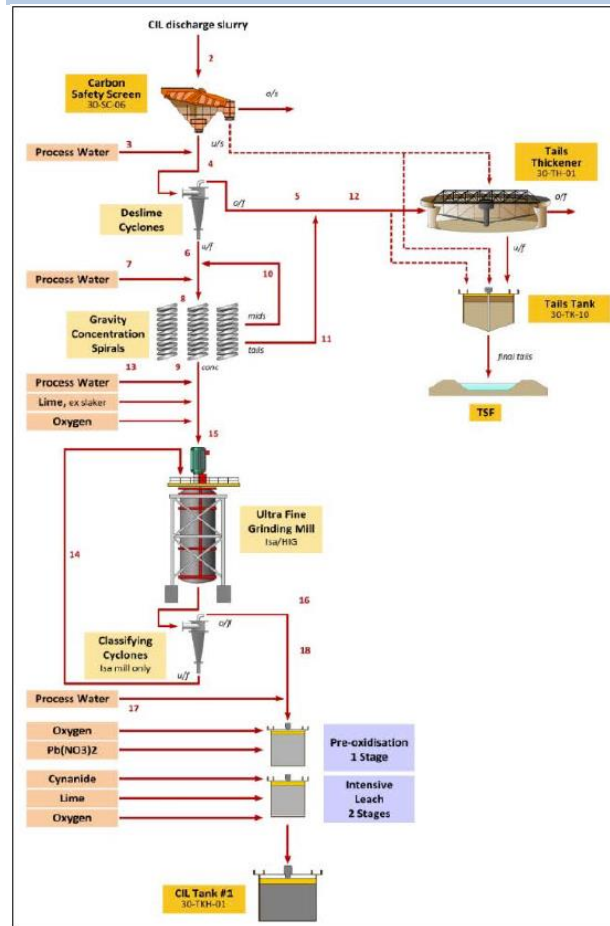
The current Nullagine processing plant has nameplate capacity of 1.5Mtpa, but continues to operate well above this operating level at ~1.9Mtpa (from predominantly oxide ore feed). The plant has a crusher, SAG mill, gravity circuit and CIL circuit, designed to process free-milling ores.

MOY has now selected the optimal processing flowsheet to treat the sulphide ores within the field. This involves the installation of a gravity sulphide scavenging circuit on the existing CIL tails stream which will then undergo an ultrafine grind and intense cyanidation to improve overall gold recoveries and in turn increase production and improve cash flows.

The anticipated capex for the processing expansion is considered light at only A\$15M, with the additional processing costs of A\$3.6/t on the current A\$18.4/t costs for the current CIL plant (total processing costs of ~A\$22/t), seen as a very good outcome. MOY is forecasting overall gold recoveries of 85% on a blended oxide and sulphide ore feed, with met-testwork ongoing expected to improve recoveries further. We have now adjusted our model to the latest CY18 guidance and expectation of the sulphide processing circuit will be integrated into the existing processing infrastructure.

Next steps for the sulphide plant works include: re-optimisation of the sulphide resource/reserve inventory (JunQ and SepQ), plant equipment procurement (JunQ), mine plan update (JunQ), plant construction (SepQ) for commissioning Q1 CY19.

**Fig. 1: Sulphide Expansion Flowsheet**



Source: Millennium Minerals Ltd

## EARNINGS CHANGES

**Fig. 2: Earnings Changes**

Financial Performance	Unit	CY16a	CY17a	CY18e			CY19e		
		Actual	Actual	Old	New	% chg	Old	New	% chg
<b>Production</b>	<b>(koz)</b>	<b>86.3</b>	<b>72.9</b>	<b>95.0</b>	<b>79.4</b>	<b>-16.4%</b>	<b>115.8</b>	<b>100.6</b>	<b>-13.1%</b>
<b>Net Revenue</b>	<b>A\$m</b>	<b>141.6</b>	<b>115.6</b>	<b>159.8</b>	<b>135.4</b>	<b>-15.3%</b>	<b>199.6</b>	<b>173.5</b>	<b>-13.1%</b>
<b>Total Costs</b>	<b>A\$m</b>	<b>(99.5)</b>	<b>(94.3)</b>	<b>(111.9)</b>	<b>(103.2)</b>	<b>-7.8%</b>	<b>(120.6)</b>	<b>(126.1)</b>	<b>4.6%</b>
<b>EBITDA</b>	<b>A\$m</b>	<b>42.1</b>	<b>21.3</b>	<b>47.9</b>	<b>32.2</b>	<b>-32.7%</b>	<b>79.1</b>	<b>47.4</b>	<b>-40.1%</b>
- margin		<b>0.3</b>	<b>0.2</b>	<b>0.3</b>	<b>0.2</b>	<b>-20.5%</b>	<b>0.4</b>	<b>0.3</b>	<b>-31.1%</b>
Depreciation/Amort	<b>A\$m</b>	<b>(21.9)</b>	<b>(25.3)</b>	<b>(24.2)</b>	<b>(25.9)</b>	<b>7.0%</b>	<b>(28.6)</b>	<b>(30.8)</b>	<b>7.6%</b>
<b>EBIT</b>	<b>A\$m</b>	<b>20.1</b>	<b>(4.0)</b>	<b>23.7</b>	<b>6.4</b>	<b>-73.1%</b>	<b>50.5</b>	<b>16.6</b>	<b>-67.2%</b>
Net Interest	<b>A\$m</b>	<b>(3.1)</b>	<b>(1.6)</b>	-	-	<b>na</b>	-	-	<b>na</b>
<b>Pre-Tax Profit</b>	<b>A\$m</b>	<b>17.1</b>	<b>(5.6)</b>	<b>23.7</b>	<b>6.4</b>	<b>-73.1%</b>	<b>50.5</b>	<b>16.6</b>	<b>-67.2%</b>
Tax Expense	<b>A\$m</b>	-	-	-	-	<b>0.0%</b>	<b>(6.6)</b>	-	<b>0.0%</b>
<b>Normalised NPAT</b>	<b>A\$m</b>	<b>11.9</b>	<b>(7.3)</b>	<b>30.9</b>	<b>8.3</b>	<b>-73.1%</b>	<b>52.5</b>	<b>21.6</b>	<b>-58.9%</b>
Abnormal Items	<b>A\$m</b>	<b>(5.1)</b>	<b>1.7</b>	<b>(7.1)</b>	<b>(1.9)</b>	<b>0.0%</b>	<b>(8.6)</b>	<b>(5.0)</b>	<b>0.0%</b>
Reported Profit	<b>A\$m</b>	<b>17.1</b>	<b>(5.6)</b>	<b>23.7</b>	<b>6.4</b>	<b>-73.1%</b>	<b>43.9</b>	<b>16.6</b>	<b>-62.2%</b>
Minority	<b>A\$m</b>	-	-	-	-	<b>0.0%</b>	-	-	<b>0.0%</b>
<b>Profit Attrib</b>	<b>A\$m</b>	<b>17.1</b>	<b>(5.6)</b>	<b>23.7</b>	<b>6.4</b>	<b>-73.1%</b>	<b>43.9</b>	<b>16.6</b>	<b>-62.2%</b>

Source: Hartleys Estimates; Millennium Minerals Ltd (actuals)

MOY reported a net loss after tax of A\$5.6M (A\$17.1M PCP) for CY17. We had anticipated a small profit ~A\$6M, with the difference in D&A expense and unrealised loss on gold forward, along with an exploration impairment.

## VALUATION – UPDATED

Our sum of parts valuation for MOY assumes a further conversion of the current +1Moz resource to reserve over the coming years, and we assume a +5 year mine life can be achieved. To achieve the additional mine-life (above the current reserve position) we expect the Company to have further exploration success within the extensive shallow oxide prospects and underground options (such as Bartons and Shearers) to be added to the processing mix throughout the Nullagine region. The Bartons deposit is expected to be the first underground for MOY, which should come into the mine plan in early CY19. We have updated our Nullagine model for the integration of a sulphide plant based largely on indicative costs from the study updates.

We value the exploration potential for MOY at a nominal \$60M, which we believe is conservative given regional exploration is in its early stages and the majority of exploration to date has been brownfields, focussed on outcropping mineralisation and old workings.

## PRICE TARGET

Our price target is based on our sum of parts valuation for the Nullagine project. We have included weighting for the base case at Consensus and Spot pricing.

**Fig. 3: MOY Price Target Methodology**

Price Target Methodology	Weighting	Spot	12 mth out
NAV Base Case	55%	\$0.18	\$0.23
NAV Base Case at Spot commodity and FX prices	30%	\$0.22	\$0.29
NAV 1.2x	15%	\$0.21	\$0.31
<b>Risk weighted composite</b>			<b>\$0.20</b>
<b>12 Months Price Target</b>			<b>\$0.26</b>
Shareprice - Last		\$0.240	
<b>12 mth total return (% to 12mth target + dividend)</b>			<b>9%</b>

Source: Hartleys Estimates

*Adjustments to our earnings forecasts from CY17 actuals, Company guidance for CY18 and changes to our Nullagine model going forward*

*The Company's production and cost guidance for CY18 is 75-80koz at A\$1,280-1,350/oz AISC and expects to be running at the 100kozpa run-rate in Q4 CY18*

*Hartleys sum of parts valuation for MOY is 18cps*

*Current spot NAV is 22cps*

*Hartleys 12 month price target is 26cps*

## RISKS

Cashflows continue to be generated from the Nullagine gold operation. With cash of ~A\$23M and no debt, financial risks appear low. Gold prices are volatile but fundamentals remain favourable.

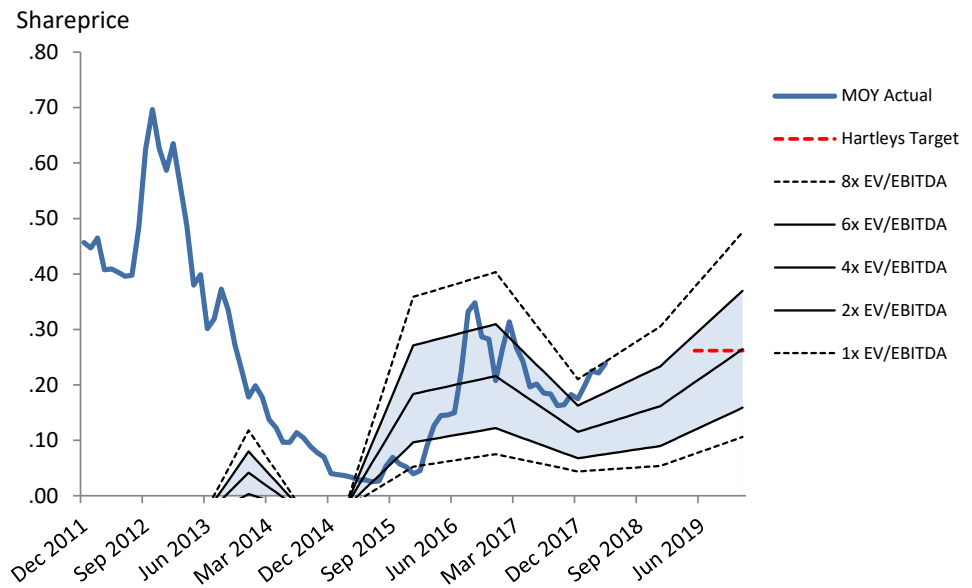
*Fig. 4: Key assumptions and risks for valuation*

Assumption	Risk of not realising assumption	Risk to valuation if assumption is incorrect	Comment
Increased production over a longer mine life	Moderate	Meaningful	We assume further exploration success at Nullagine to further convert the current +1Moz resources to reserves. We now model to upper end of Company guidance in CY18 and increased production in CY19. With the introduction of Bartons underground mill grades should lift, we now forecast ~100koz at AISC of ~A\$1,290/oz in CY19 (this forecast is subject to change)
Metallurgy	Moderate	Meaningful	Metallurgy is a key risk within the Nullagine fresh rock and further study work will guide us on the significant potential that exists within the fresh ore material at Nullagine
Exploration Upside	Moderate	Small	We assume exploration upside for MOY. We have assumed a relatively small value (\$60M) compared to the significant exploration potential of the region
Gold Price	High	High	Our gold price forecasts are in line with sell side consensus
<i>Conclusion</i>	<i>Our assumptions have associated meaningful risks. Processing of fresh ore has metallurgical risks which will be mitigated through development study work.</i>		

Source: Hartleys Research

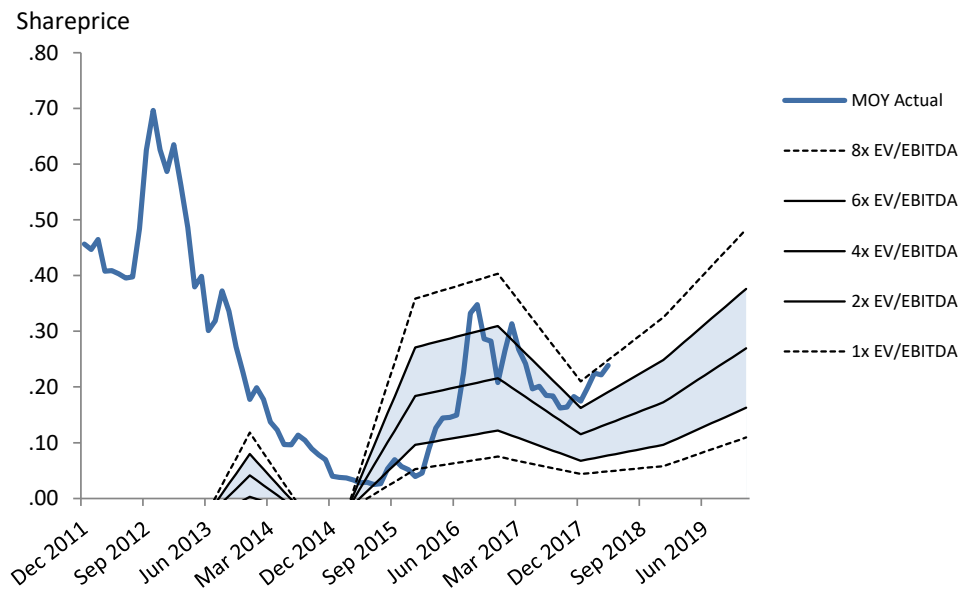
## EV/EBITDA BANDS

**Fig. 5: Using Hartleys base case commodity forecasts**



Source: Hartleys Research Estimates, IRESS

**Fig. 6: Using spot commodity prices**



Source: Hartleys Research Estimates, IRESS

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## 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 Buy	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.

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