

# **Carbine Resources Ltd**

### INITIATION REPORT

# **Unlocking the value at Mount Morgan**

### **Overview**

Carbine Resources is re-developing the historical Mount Morgan gold and copper tailings project in Queensland, and if the Scoping Study results are confirmed in upcoming studies (PFS), Mount Morgan could once again become one of Australia's cheapest gold operations.

Carbine released a positive Scoping Study in late 2014 that forecasted production of 36,000oz pa over an initial 8 year mine life. However the most attractive aspect of the project are the low *AISC that are forecasted to be less than US\$400/oz Au*, mainly due to by-product credits.

The historical Mount Morgan operation, was one of Australia most profitable mines as it produced over 8Moz of gold and 400,000t of copper. A successful tailings operation also ran during the 1980's for 10 years, however closed due to a falling gold price and high operating costs due to metallurgical issues.

Since the closure of the tailings operation, metallurgical technology has advanced and Carbine believes they have unlocked the significant value that still exists at Mount Morgan, through a *commonly used technology called Ion Exchange* — which is used on numerous mining operations throughout the world today, including Rio Tinto and Barrick Gold operations.

A misconception many investors have regarding Mount Morgan is related to the ownership of the *historical environmental legacy*, with many believing it is the responsibility of the Mining Lease holder. However this legacy is 100% owned by the Queensland Government through the Department of Natural Resources and Mines. The proposed development of Mount Morgan will actually assist the Queensland government in the rehabilitation process as the tailings which is a major part of the environmental burden will be reprocessed and correctly disposed of.

### **Catalysts**

Key share price catalysts over the next 12 months include:

- Pre-Feasibility Study Mid-2015;
- Further information regarding a potential offtake agreement for the Pyrite concentrate – on-going;
- Project Finance 2H15 / early 16;
- Bankable Feasibility Study late 15 / early 16; and
- Decision to mine 1H16.

### **Investment View**

We have determined a base case valuation of \$0.17 per share. However, we believe there is significant upside potential in our valuation as we believe there is scope for an increase in the resource (confidence level, size & grade), as well as a reduction in capital and operating costs.

This could see our valuation increase up to \$0.46 per share.

## **Mining - Development**

### February 2015

Share Price	A\$0.04
Intrinsic Value per share	A\$0.17
Implied Return	325%

### Company Information

ASX Code	CRB
Ord Shares	140.0M
Options	28.0M
Market Cap	A\$5.6M
Cash (Dec 14)	A\$4.2M
Total Debt (Dec 14)	A\$0.0M
Market Cap Cash (Dec 14)	A\$5.6M A\$4.2M

### **Board & Management**

Patrick Walta	ED
Evan Cranston	NED
Tom Bahen	NED
Rod Smith	Consult.

### **Substantial Shareholders**

Kingslane Pty Ltd	9.0%
Blu Bone Pty Ltd	4.3%
MJ & MP Bahen	4.3%
Ablett Pty Ltd	3.0%

### **Share Price**

52 week High	A\$0.051
52 week Low	A\$0.025
3m avg dail vol	50k
3m avg dailv value	A\$3k

### **Initiation Video**





ompany Ticker				CRB.ASX	Cash - TSI Estimate (A\$)				4.2
nares on issue - current (m)				140.0	Debt (A\$)				0.0
nare Price (A\$)				0.040	EV (A\$m)				1.4
					11				
arket Cap (A\$m)				5.6	Valuation/share (\$A)				0.17
dustry				Mining - Gold	Intrinsic Value - TSI (A\$m)				119.6
age of Development				Scoping Study	Implied Return (%)				325%
oject Location				QLD, Australia	P/NAV (x)				0.24
ar end: 31 December									
aluation	Disc' rate	Ownership	Valuation (A\$m)	Val/share (A\$)*	Price Assumptions	2017	2018	2019	2020
: Morgan - Base Case**	10%	100%	\$73.4	\$0.10	Gold (A\$ / oz)	\$1,635	\$1,656	\$1,678	\$1,700
J	10%	100%							
paid cap. & new equity			\$42.0	\$0.06	Copper - (A\$/ t)	\$7,066	\$7,158	\$7,252	\$7,34
rrent Cash			\$4.2	\$0.01	Pyrite - (A\$/ t)	\$103	\$104	\$105	\$107
al NAV Fully diluted for options & proje	act develonment		\$119.6	<b>\$0.17</b> 709.2 M shares	FX (A\$:USD\$)	\$0.78	\$0.77	\$0.76	\$0.75
				703.2 WI SHALES	Production Profile	2017	2018	2019	2020
Inclusive of tax & corporate co	sts								
0	Scenario	o Analysis			Tonnes Processed (Mt pa )	0.85 1.64	1.00 1.70	1.00 1.60	1.00 1.40
0					Grade - Au (g/t)				
15					Gold Produced (oz)	34,983	42,632	40,124	35,10
10					Grade - Cu (%)	0.13%	0.13%	0.13%	0.139
10					Copper Produced (t)	619	728	728	728
5					Pyrite Produced (t)	204,000	240,000	240,000	240,00
0					C. J	2047	2040 -	2040	
5					Cash costs (A\$) / Au oz	2017	2018	2019	2020
.0		_			C1 Cash costs	\$760	\$733	\$779	\$891
			_		Other Costs	\$417	\$352	\$345	\$356
.5					By Product Credit	(-\$723)	(-\$707)	(-\$761)	(-\$882
0					Total Operating Cost /oz	\$454	\$379	\$364	\$366
5									
,5									
	anno Cutand mina	Paduas 100% acuit		Doduce	Resource		Gold (g/t)	Contained Gold (oz)	As at (dat
- Base Case** Reduce Reduce		Reduce 100% equi						(oz)	As at (dat
- Base Case** Reduce Reduce	no life - 10 yrs ca	Reduce 100% equi	ty Lower Increa recoveries opex (1 (10%)		Indicated	2,487,000	1.6	(oz) 127,135	As at (dai
Base Case** Reduce Reduce capex (15%),	no life - 10 yrs ca	pex, opex,	recoveries opex (1	15%) pyrite price	Indicated Inferred	2,487,000 5,861,000	1.6 1.1	(oz) 127,135 201,626	31 - Dec 31 - Dec
Base Case** Reduce Reduce capex (15%),	no life - 10 yrs ca	pex, opex, by; extend	recoveries opex (1	15%) pyrite price	Indicated	2,487,000	1.6	(oz) 127,135	As at (da 31 - Dec
Base Case** Reduce Reduce capex (15%),	no life - 10 yrs ca	pex, opex, by; extend	recoveries opex (1	15%) pyrite price	Indicated Inferred	2,487,000 5,861,000	1.6 1.1 <b>1.2</b>	(oz) 127,135 201,626 328,760 Copper Conten	31 - Dec 31 - Dec 31 - Dec
Base Case** Reduce Reduce capex (15%), (\$60m) royalt	no life - 10 yrs ca ies ro	pex, opex, py; extend LOM	recoveries opex (10%)	(US\$50/t)	Indicated Inferred Total  Resource	2,487,000 5,861,000 <b>8,348,000</b> Tonnes	1.6 1.1 1.2	(oz) 127,135 201,626 328,760 Copper Conten (kt)	As at (da 31 - Dec 31 - Dec 31 - Dec t As at (da
Base Case** Reduce Reduce capex (15%), (\$60m) royalt	no life - 10 yrs ca ies ro 2017 \$0.04	pex, opex, by; extend LOM 2018 \$0.04	recoveries (10%) opex (1	2020 \$0.04	Indicated Inferred Total  Resource Indicated	2,487,000 5,861,000 <b>8,348,000</b> Tonnes 2,487,000	1.6 1.1 1.2 Copper %	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979	As at (da 31 - Dec 31 - Dec t As at (da 31 - Dec
Base Case** Reduce Reduce capex (15%), (560m) royalt	no life - 10 yrs ca ro 2017 \$0.04 \$0.05	pex, opex, yy; extend LOM 2018 \$0.04 \$0.06	recoveries (10%) opex (1	2020 \$0.04 \$0.06	Indicated Inferred Total  Resource Indicated Inferred	2,487,000 5,861,000 <b>8,348,000</b> Tonnes 2,487,000 5,861,000	1.6 1.1 1.2 Copper % 0.16% 0.14%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec 31 - Dec t As at (da 31 - Dec 11 - Dec
Base Case** Reduce Reduce capex (15%), (\$60m) royalt	2017 \$0.04 \$0.05 0.9	2018 \$0.04 \$0.06 0.9	recoveries opex (1 (10%) opex	2020 \$0.04 \$0.06 1.1	Indicated Inferred Total  Resource Indicated	2,487,000 5,861,000 <b>8,348,000</b> Tonnes 2,487,000	1.6 1.1 1.2 Copper %	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979	As at (da 31 - Dec 31 - Dec t As at (da 31 - Dec 11 - Dec
Base Case** Reduce capex (1.5%), (\$60m) royalt  Tios  (A\$) PS (A\$) ratio (x) CF (x)	2017 \$0.04 \$0.05 0.9 0.7	2018 \$0.04 \$0.06 0.9 0.7	2019 \$0.04 \$0.06 0.9 0.7	2020 \$0.04 \$0.06 1.1 0.7	Indicated Inferred Total  Resource Indicated Inferred	2,487,000 5,861,000 <b>8,348,000</b> Tonnes 2,487,000 5,861,000	1.6 1.1 1.2 Copper % 0.16% 0.14%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec 31 - Dec t As at (da 31 - Dec 11 - Dec
Base Case** Reduce capex (1.5%), (\$60m) royalt  royalt  (A\$) PS (A\$) ratio (x) CF (x)	2017 \$0.04 \$0.05 0.9	2018 \$0.04 \$0.06 0.9	recoveries opex (1 (10%) opex	2020 \$0.04 \$0.06 1.1	Indicated Inferred Total  Resource Indicated Inferred	2,487,000 5,861,000 <b>8,348,000</b> Tonnes 2,487,000 5,861,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec 31 - Dec t As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  itos  (A\$) PS (A\$) ratio (x) CF (x) res on issue (m)	2017 \$0.04 \$0.05 0.9 0.7	2018 \$0.04 \$0.06 0.9 0.7	2019 \$0.04 \$0.06 0.9 0.7	2020 \$0.04 \$0.06 1.1 0.7	Indicated Inferred Total  Resource Indicated Inferred	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  tios  (A\$) PS (A\$) ratio (x) CF (x) res on issue (m) rnings (A\$ m) enue & other Inc.	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9	2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4	Indicated Inferred Total  Resource Indicated Inferred Total  45,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec 31 - Dec t As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  Tios  (A\$) P\$ (A\$) ratio (x) CF (x) res on issue (m)  rnings (A\$ m) enue & other Inc. erating Costs	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2	2018 2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1	Indicated Inferred Total  Resource Indicated Inferred Total	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  Tios  (A\$) P\$ (A\$) ratio (x) CF (x) res on issue (m)  rnings (A\$ m) enue & other Inc. erating Costs	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9	2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4	Indicated Inferred Total  Resource Indicated Inferred Total  45,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (1.5%), (\$60m) royalt  Reduce capex (1.5%), royal	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2	2018 2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1	Indicated Inferred Total  Resource Indicated Inferred Total  45,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  cios  (A\$) PS (A\$) ratio (x) CF (x) res on issue (m)  rnings (A\$ m) enue & other Inc. erating Costs er Expenses & Eval	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0	pex, opex, opex, opy; extend LOM  2018  \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0	\$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0	Indicated Inferred Total  Resource Indicated Inferred Total  45,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (1.5%), (560m) royalt  tios  (A\$) PS (A\$) Pratio (x) CF (x) res on issue (m)  rnings (A\$ m) enue & other Inc. erating Costs er Expenses & Eval	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0	pex, opex, opex, opy; extend LOM  2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0	Indicated Inferred Total  Resource Indicated Inferred Total  45,000  40,000  35,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  tios  (A\$) PS (A\$) ratio (x) CF (x) res on issue (m) rnings (A\$ m) enue & other Inc. erating Costs er Expenses & Eval TDA preciation	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$44.0 \$0.0 \$48.7	2018 2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2	Indicated Inferred Total  Resource Indicated Inferred Total  45,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  Reduce capex (15%), (\$60m) royalt  Reduce capex (15%), capex (15%), royalt  Reduce capex (15%),	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0	2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$66.3 \$16.3 \$1.6	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2 \$17.6 \$0.6	Indicated Inferred Total  Resource Indicated Inferred Total  45,000  40,000  35,000  30,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (S60m) Reduce capex (15%), royalt (15%),	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3	2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2 \$17.6	Indicated Inferred Total  Resource Indicated Inferred Total  45,000  40,000  35,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  tios  (A\$) PS (A\$) ratio (x) CF (x) res on issue (m) rnings (A\$ m) enue & other Inc. erating Costs ere Expenses & Eval TDA oreciation erest Expense  fit (loss) after tax	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6	2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1 \$30.3	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2 \$17.6 \$0.6 \$10.0 \$26.0	Indicated Inferred Total  Resource Indicated Inferred Total  45,000  40,000  35,000  30,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (S60m) royalt  tios  (A\$) PS (A\$) ratio (x) CF (x) res on issue (m)  rnings (A\$ m) enue & other Inc. erating Costs er Expenses & Eval TDA reciation erest Expense fit (loss) after tax lance Sheet (A\$ m)	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8	2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0	\$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2 \$17.6 \$0.6 \$10.0	Indicated Inferred Total  Resource Indicated Inferred Total  45,000  40,000  30,000  25,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  tios  (A\$) PS (A\$) ratio (x) CF (x) rres on issue (m) rnings (A\$ m) renue & other Inc. erating Costs ter Expenses & Eval TDA oreciation erest Expense fit (loss) after tax lance Sheet (A\$ m)	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6 2017	2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5	2019 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1 \$30.3	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2 \$17.6 \$0.6 \$10.0 \$26.0	Indicated Inferred Total  Resource Indicated Inferred Total  45,000  40,000  30,000  25,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (S60m) Reduce (15%), (S60m) Reduce (15%), royalt (15%)	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6 2017	pex, opex, opex, opy; extend LOM  2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5 2018	\$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1 \$30.3 2019	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.06 \$1.1 \$0.0 \$54.2 \$17.6 \$0.6 \$10.0 \$26.0 2020	Indicated Inferred Total  Resource Indicated Inferred Total  45,000 40,000 35,000 30,000 25,000 215,000 15,000 15,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (1.5%), (S60m) Reduce (1.5%), royalt (1.5%), royalt (1.5%), royalt (1.5%), royalt (1.5%), royalt (1.5%), ratio (x) CF (x) res on issue (m) rnings (A\$ m) enue & other Inc. erating Costs er Expenses & Eval TDA oreciation rerest Expense fit (loss) after tax lance Sheet (A\$ m) ets h & Exp. & Dev.	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6 2017	pex, opex, opex, opy; extend LOM  2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5 2018	\$0.04 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1 \$30.3 2019	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2 \$17.6 \$0.6 \$10.0 \$26.0 2020	Indicated Inferred Total  Resource Indicated Inferred Total  45,000 40,000 35,000 30,000 25,000 20,000 20,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (S60m) royalt  tios  (A\$) PS (A\$) ratio (x) CF (x) res on issue (m)  rnings (A\$ m)  enue & other Inc. rerating Costs rer Expenses & Eval TDA oreciation orerest Expense fit (loss) after tax  lance Sheet (A\$ m)  ets h i & Exp. & Dev. al Assets	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6 2017	pex, opex, opex, opy; extend LOM  2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5 2018	\$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1 \$30.3 2019	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.06 \$1.1 \$0.0 \$54.2 \$17.6 \$0.6 \$10.0 \$26.0 2020	Indicated Inferred Total  Resource Indicated Inferred Total  45,000 40,000 35,000 25,000 215,000 110,000 10,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt  cios  (A\$)  PS (A\$)  ratio (x)  CF (x)  res on issue (m)  rnings (A\$ m)  enue & other Inc.  rerating Costs  er Expenses & Eval  TDA  oreciation  rerest Expense  fit (loss) after tax  lance Sheet (A\$ m)  ets  h & Exp. & Dev.  al Assets  sillities	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6 2017	pex, opex, opex, opy; extend LOM  2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5 2018	\$0.04 \$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1 \$30.3 2019	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2 \$17.6 \$0.6 \$10.0 \$26.0 2020	Indicated Inferred Total  Resource Indicated Inferred Total  45,000 40,000 35,000 30,000 25,000 215,000 15,000 15,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec 31 - Dec t As at (da 31 - Dec
Base Case** Reduce capex (15%), (560m) royalt  Graph (A\$) PS (A\$) Pratio (x) CF (x) Person issue (m) Prinings (A\$ m) Penue & other Inc. Prating Costs Per Expenses Per Expenses Per Expense Per Expens	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6 2017	pex, opex, opex, opy; extend LOM  2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5 2018  \$73.5 \$62.4 \$136.0	\$0.04 \$0.06 \$0.9 \$0.7 \$709.2 \$2019 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1 \$30.3 \$2019 \$\$102.8 \$50.1 \$152.9	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2 \$17.6 \$0.6 \$10.0 \$26.0 2020 \$129.0 \$36.4 \$165.6	Indicated Inferred Total  Resource Indicated Inferred Total  45,000 40,000 35,000 25,000 215,000 110,000 10,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205	As at (da 31 - Dec 31
Base Case** Reduce capex (15%), (S60m) Reduce (15%), (S60m) Reduce (15%), royalt (15%)	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6 2017 \$44.0 \$73.6 \$117.8 \$40.0 2017	pex, opex, opex, opy; extend  2018  \$0.04 \$0.06 0.9 0.7 709.2  2018  \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5  2018  \$73.5 \$62.4 \$136.0 \$26.7  2018	\$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1 \$30.3 2019 \$102.8 \$50.1 \$152.9 \$13.3 2019	\$0.04 \$0.06 \$1.1 0.7 \$709.2 \$2020 \$93.4 \$35.1 \$4.0 \$0.06 \$17.6 \$0.6 \$10.0 \$26.0 \$2020 \$129.0 \$36.4 \$165.6 \$0.0 \$2020	Indicated Inferred Total  Resource Indicated Inferred Total  45,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000 Production vs. C	1.6 1.1 1.2 Copper % 0.16% 0.14% 0.15% ash Costs	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205 12,185	As at (da 31 - Dec
Base Case** Reduce capex (1.5%), (S60m) royalt  tios  (A\$) PS (A\$) ratio (x) CF (x) res on issue (m) rnings (A\$ m) enue & other Inc. erating Costs her Expenses & Eval TDA orceiation erest Expense fit (loss) after tax lance Sheet (A\$ m) ets h & & Exp. & Dev. al Assets bilities ior Debt Facility sh flow Generation h flow generated	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6 2017 \$44.0 \$73.6 \$117.8 \$40.0 2017 \$39.0	pex, opex, opex, opy; extend  2018 \$0.04 \$0.06 0.9 0.7 709.2 2018 \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5  2018  \$73.5 \$62.4 \$136.0 \$26.7 2018 \$29.5	2019	2020 \$0.04 \$0.06 1.1 0.7 709.2 2020 \$93.4 \$35.1 \$4.0 \$0.0 \$54.2 \$17.6 \$0.6 \$10.0 \$26.0 2020 \$129.0 \$36.4 \$165.6 \$0.0 2020 \$26.3	Indicated Inferred Total  Resource Indicated Inferred Total  45,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000 Production vs. C	1.6 1.1 1.2  Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205 12,185	As at (da 31 - Dec
Base Case** Reduce capex (15%), (\$60m) royalt (15%), royal	2017 \$0.04 \$0.05 0.9 0.7 709.2 2017 \$82.9 \$30.2 \$4.0 \$0.0 \$48.7 \$12.3 \$3.0 \$2.8 \$30.6 2017 \$44.0 \$73.6 \$117.8 \$40.0 2017	pex, opex, opex, opy; extend  2018  \$0.04 \$0.06 0.9 0.7 709.2  2018  \$102.0 \$35.7 \$4.0 \$0.0 \$62.4 \$15.3 \$2.6 \$13.0 \$31.5  2018  \$73.5 \$62.4 \$136.0 \$26.7  2018	\$0.04 \$0.06 0.9 0.7 709.2 2019 \$99.9 \$35.5 \$4.0 \$0.0 \$60.3 \$16.3 \$1.6 \$12.1 \$30.3 2019 \$102.8 \$50.1 \$152.9 \$13.3 2019	\$0.04 \$0.06 \$1.1 0.7 \$709.2 \$2020 \$93.4 \$35.1 \$4.0 \$0.06 \$17.6 \$0.6 \$10.0 \$26.0 \$2020 \$129.0 \$36.4 \$165.6 \$0.0 \$2020	Indicated Inferred Total  Resource Indicated Inferred Total  45,000	2,487,000 5,861,000 8,348,000 Tonnes 2,487,000 5,861,000 8,348,000 Production vs. C	1.6 1.1 1.2  Copper % 0.16% 0.14% 0.15%	(oz) 127,135 201,626 328,760  Copper Conten (kt) 3,979 8,205 12,185	As at (da 31 - Dec



#### **About Us**

The Sophisticated Investor (www.thesophisticatedinvestor.com.au) is a new equity investment tool which seeks to assist investors in becoming more informed in their investment decision making. We show and tell investors about a company in a series of short, informative videos. We possess specialist equity analyst skills and are complemented by video professionals. We conduct site visits and interview management, in a way most investors simply aren't able to access. Finally, we promote long term value creation for investors by employing detailed financial analysis and intrinsic value calculations.

### **Customer Caution Notice**

This report was produced by Adam Kiley (AR No. 458224) trading as TSI Capital Pty Ltd, which is an authorised representative of Intelligent Financial Markets Pty Ltd (AFSL 426359). Whilst TSI Capital Pty Ltd endeavours to keep the information up-to-date and correct, TSI Capital Pty Ltd make no representations or warranties of any kind, express or implied, about the completeness, accuracy, reliability, suitability or availability with respect to the website or the information, products, services, or related graphics contained in this report for any purpose. Any reliance you place on such information is therefore strictly at your own risk.

Users of this report do so entirely at their own risk and are responsible for performing their own due diligence. In no event will TSI Capital Pty Ltd be liable for any loss or damage including without limitation, indirect or consequential loss or damage, or any loss or damage whatsoever arising from loss of data or profits arising out of, or in connection with, the use of this report.

**WARNING**: This report is intended to provide general financial product advice only. It has been prepared without having regarded to or taking into account any particular investor's objectives, financial situation and/or needs. All investors should therefore consider the appropriateness of the advice, in light of their own objectives, financial situation and/or needs, before acting on the advice. Where applicable, investors should obtain a copy of and consider the product disclosure statement for that product (if any) before making any decision.

TSI Capital Pty Ltd and/or its directors, associates, employees or representatives may not effect a transaction upon its or their own account in the investments referred to in this report or any related investment until the expiry of 24 hours after the report has been published. Additionally, TSI Capital Pty Ltd may have, within the previous twelve months, provided advice or financial services to the companies mentioned in this report.