

## Diligence and Valuation Report

Arrowhead Code: 19-15-04  
 Coverage initiated: October 17, 2017  
 This document: December 27, 2018  
 Fair share value bracket: USD 14.55 to USD 14.79<sup>i</sup>  
 Share price (Dec. 26., 2018): USD 5.17<sup>ii</sup>

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### Market Data

	CAL (CAD)	CMCL (USD)
52-Week Range <sup>iii</sup>	6.82 – 12.55	5.01 – 9.94
Average Daily Volume <sup>iv</sup>	4,744	8,809
Market Cap. on date <sup>v</sup>	75.9 mn	54.8 mn

### Financial Forecast (in USD) (FY Ending – Dec.)

USD mn	'18E	'19E	'20E	'21E	'22E	'23E	'24E
High NI (mn)	11.7	13.7	19.3	22.7	23.7	24.9	24.3
High EPS	1.1	1.3	1.8	2.1	2.2	2.3	2.3
Low NI (mn)	11.2	13.3	18.4	22.0	23.3	24.4	23.8
Low EPS	1.1	1.3	1.7	2.1	2.2	2.3	2.2

**Company Overview:** Caledonia Mining Corporation Plc. ('Caledonia' or 'the company') is primarily involved in mining, development and exploration of minerals. The company's current strategic focus is on the implementation of its investment plan at the Blanket gold mine (Blanket) in Zimbabwe. Caledonia produced 56,135 ounces of gold in 2017. For the nine months ended September 2018, it produced 39,558 ounces of gold. The company is currently on track to meet its production guidance of 55,000-59,000 ounces of gold for 2018.

**9M 2018:** For the nine-months ended September 30, 2018, Caledonia's revenue recorded an increase from USD 50.2 mn to USD 50.9 mn. Operating profit rose by 11.6% from USD 13.8 mn to USD 15.4 mn, benefitted by the increase in Export Credit Incentive (ECI) from 2.5% to 10%. Basic adjusted earnings per share (EPS) rose from USD 0.87 in 9M 2017 to USD 1.08 in 9M 2018. However, in Q3 2018, revenue declined to USD 16.65 mn from USD 18.23 mn in Q3 2017 due to a



Company: Caledonia Mining Corporation Plc.  
 Ticker: TSX: CAL, NYSE: CMCL, LSE-AIM: CMCL  
 Headquarters: St Helier, Jersey  
 Chief Executive Officer: Steve Curtis  
 Website: [www.caledoniamining.com](http://www.caledoniamining.com)

2.9% decrease in ounces sold and a 5.9% decrease in the average realized price of gold. Consequently, operating profit saw a decline of 30% and basic adjusted EPS slid from USD 0.40 in Q3 2017 to USD 0.33 in Q3 2018.

Arrowhead is updating coverage on Caledonia Mining with a fair value bracket of USD 14.55 in the low bracket and USD 14.79 in the high bracket scenario using the Discounted Cash Flow (DCF) Valuation Method.

**Key Highlights:** (1) Caledonia is increasing its shareholding in the Blanket mine from 49% to 64%, pursuant to a definitive agreement with Fremiro. (2) In line with its investment plan, the company is on track to reach a production level of 80,000 ounces of gold per year by 2021. (3) 2018 earnings guidance, in the range of USD 0.14 to USD 0.15 per share, is 3%-12% higher than the earnings achieved in 2017. (4) The company is in its seventh successive year of sustained resource growth at the Blanket mine. (5) Inferred gold resources at Blanket increased by 9%, resulting in Blanket extending its life of mine by 3 years from 2031 to 2034. (6) The company's Central Shaft Project has been revised from a depth of 1,330 meters (mtr) to a 1,204 mtr, with three new production levels below 750 mtr. The shaft is currently at a depth of 1,148 mtr.

**Key Risks:** Key risks include exploration and development risks; country and political risks; credit risk; risk associated with currency fluctuation and commodity price risk (hedged to some extent).

**Valuation and Assumptions <sup>vi</sup>:** Given due diligence and valuation estimates, Arrowhead believes that Caledonia Mining's fair share value lies in the USD 14.55 to USD 14.79 bracket, calculated using the DCF method.

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## Summary and Outlook

We are updating coverage on Caledonia Mining. The company, headquartered in Jersey, is primarily involved in mining, development and exploration of minerals. Currently, the company is focused on mining and development at the over 100-year-old Blanket gold mine in Zimbabwe. The company's fair value is USD 14.55 in the low bracket scenario and USD 14.79 in the high bracket scenario (DCF Valuation Method).

## Key Highlights

- 1) Caledonia Mining is an exploration, development and mining company focused on Southern Africa. Caledonia's strategic focus is the implementation of the investment plan at Blanket, the main component of which is the Central Shaft project.
- 2) Caledonia's primary asset is the Blanket mine in Zimbabwe. The mine re-started production in April 2009 with a production capacity of 40,000 ounces of gold per annum. The company already has a 49% stake in the Blanket mine and is acquiring an additional 15% shareholding for a gross consideration of USD 16.667 mn from Fremiro Investments (Private) Limited (Fremiro) pursuant to a legally binding sale agreement signed on November 6, 2018. The transaction is expected to be completed by December 31, 2018.
- 3) Caledonia expects production at Blanket to increase to approximately 80,000 ounces of gold by 2021 following its revised investment plan of approximately USD 70 mn, all of which is expected to be funded from internal cash generation and existing cash resources.
- 4) The directors of Caledonia have taken a decision to marginally reduce and narrow the range of 2018 production guidance from 55,000 to 59,000 ounces to a range of between 54,000 and 56,000 ounces.
- 5) The company is in its 7th successive year of sustained resource growth at Blanket. The resources at Blanket have grown by approximately 86% since 2011 despite mining over 300,000 ounces during this period.
- 6) The total measured and indicated gold ounces at Blanket increased by 13% from 714,000 ounces, in August 2017, to 805,000 ounces, in July 2018. Inferred gold resources at Blanket increased by 9% from 887,000 ounces, in August 2017, to 963,000 ounces, in July 2018. Considering the consequent increase in proven reserves and indicated resources. Blanket has extended its life of mine plan by a further three years to 2034. Progress on implementing the Central Shaft plan has been adversely affected by an increase in the incidence of power interruptions due to the instability of the incoming grid power. Due to these delays and to ensure that the completion of the shaft does not delay the planned production build-up, the vertical shaft sinking will terminate at 1,204 mtr and will add three new production levels below 750 mtr. A fourth production level will be added via a decline which will start at the end of 2021. The decline is expected to allow production from below 34 Level to commence in mid-2024, which is the same as the shaft being extended to 38 Level. The shaft is currently at a depth of 1,148 mtr.
- 7) Financial Overview: Gold produced for the 9 months to September 30, 2018, was 39,559 ounces, marginally behind the 39,710 ounces produced in the corresponding period in 2017. The improvement in production in Q3 2018 is expected to continue into the fourth quarter. Production costs increased by 8.4% over 9M 2018. However, net profit increased by 10.8%.
- 8) The company entered into a hedge in respect of 8,000 ounces of gold over a period of 4 months. The hedge protects the Company if the gold price falls below USD 1,150 per ounce and gives Caledonia full participation if the price of gold exceeds USD 1,195 per ounce.

## Company Overview

Caledonia is a mining exploration and development company in Southern Africa. The company's primary asset is a 49% ownership in the Blanket gold mine in Zimbabwe. Caledonia acquired the Blanket mine from Kinross Gold Corporation in April 2006. During 2012, to comply with Zimbabwean law, Caledonia sold 51% of ownership interest to indigenous Zimbabweans. The funding for this was facilitated by Caledonia, which was to be repaid by way of dividends from the Blanket mine to Caledonia (80% of dividend being used to repay loans). This resulted in Caledonia's effective ownership much higher than 49% on a temporary basis until the loan is repaid. Additionally, on November 6, 2018, Caledonia entered into a sale agreement with Fremiro to purchase Fremiro's 15% shareholding in Blanket. Caledonia will acquire Fremiro's shareholding in Blanket for a gross consideration of USD 16.667 mn to be settled through a combination of:

- The cancellation of the loan between the two entities which stood at USD 11.467 mn on June 30, 2018; and
- The issue of 727,266 new shares in Caledonia at an issue price of USD 7.15 per share.

On completion of the transaction, Caledonia will have a 64% shareholding in Blanket and Fremiro will hold 6.42% of Caledonia's diluted equity.

On November 3, 2014, the company announced the Investment plan for the Blanket mine to improve underground infrastructure and logistics to facilitate sustainable and increased production. The infrastructure improvements included the development of a tramming loop, deepening the No. 6 Winze and sinking a new 6-mtr diameter central shaft of 1,080 mtr depth. The tramming loop and the sinking of the No. 6 Winze were both completed before the target date. On November 10, 2017, the company announced that it had decided to deepen the central shaft to 1,330 mtr, instead of the earlier plan of 1,080 mtr. During 2018, however, increased incidence of power interruptions, delayed progress on the company's central shaft plan. So, to avoid any delays in the planned production build-up, on November 13, 2018, the company announced that it had decided to terminate the vertical shaft sinking at 1,204 mtr, with three new production levels below 750 mtr. Towards the end of 2021, the company also intends to add a fourth production level via a decline which should allow production from below 34 level by mid-2024. Current depth of the shaft is estimated at 1,148 mtr. The company expects to complete the Central Shaft by Q1 2020. Once completed, a ramp-up in production up to 80,000 ounces of gold is expected by 2021.

## Company Milestones

Caledonia Milestones <sup>vii</sup>	
Year	Event
1992	<ul style="list-style-type: none"> <li>• Incorporated in February, under the securities laws in Canada, with the name Caledonia Mining Corporation Plc.</li> </ul>
2001	<ul style="list-style-type: none"> <li>• In June, Caledonia signed an agreement with Sutherland Services Limited to acquire 50% of Sutherland's interests in the Pruissen and Vier-En-Twintig Rivier, properties that are highly prospective for platinum and diamond deposits.</li> <li>• In July, the company entered into a joint venture (JV) with Ashton Mining of Canada to drill the Kikerk Lake property consists of 15 mineral claims covering approximately 15,400 hectares.</li> <li>• In September, the company announced the discovery of Potentilla kimberlite on the Kikerk Lake property.</li> </ul>
2002	<ul style="list-style-type: none"> <li>• The company completed its geological re-evaluation of the Taylor's section of its 100% owned Barbrook Mine located in the Mpumalanga Province of South Africa.</li> <li>• In September, the company reported the recovery of commercial-sized diamonds from</li> </ul>

	Potentilla kimberlite on its Kikerk Lake property.
<b>2005</b>	<ul style="list-style-type: none"> <li>Caledonia Mining was successfully admitted to the London Stock Exchange's AIM market on Monday, June 27, 2005, under the ticker symbol CMCL.L</li> <li>In November, Caledonia announced the completion of the 2005 drill program on the Mulonga Plain in western Zambia, a JV with Motapa Diamonds Inc.</li> </ul>
<b>2006</b>	<ul style="list-style-type: none"> <li>In March, the company acquired additional properties adjoining its Rooipoort Project, South Africa, virtually doubling its Rooipoort Project area.</li> <li>In June, the company purchased the Blanket Mine in Zimbabwe from Kinross Gold Corporation. The transaction closed on July 5, 2006.</li> </ul>
<b>2008</b>	<ul style="list-style-type: none"> <li>Caledonia sold its Barbrook Mine to Eastern Goldfields SA (Proprietary) Limited, South Africa.</li> <li>The company sold its Eersteling Mine to Oretch Resources Inc., Canada.</li> </ul>
<b>2009</b>	<ul style="list-style-type: none"> <li>In May, the company's Blanket Mine commenced production and export of gold.</li> </ul>
<b>2011</b>	<ul style="list-style-type: none"> <li>Caledonia Mining shares moved from OTCBB to the OTCQX marketplace of the US over-the-counter market</li> </ul>
<b>2012</b>	<ul style="list-style-type: none"> <li>In February, the company signed a Memorandum of Understanding with the Minister of Youth, Development, Indigenization and Empowerment of the Government, pursuant to which Caledonia agreed to sell 51% of the Blanket Mine in Zimbabwe to Indigenous Zimbabweans for a paid transactional value of USD 30.09 mn.</li> </ul>
<b>2016</b>	<ul style="list-style-type: none"> <li>In March, the company successfully completed the re-domicile of the company into Jersey, Channel Islands. The International Securities Identification Number (ISIN) of the Depositary Interests (DIs) in common shares changed to JE00BD35H902 and the new SEDOL of the DIs in common shares changed to BD35H90.</li> <li>In October, the company successfully installed a new ball mill. The new mill is expected to increase the daily throughput by 20% to 1,850 tons per day (tpd) from 1,500 tpd, which will allow Blanket to meet its plan to reach the gold production of 80,000 ounces by 2021.</li> </ul>
<b>2017</b>	<ul style="list-style-type: none"> <li>In June, the company successfully completed a one-for-five shares consolidation, in order to satisfy the listing requirements of the NYSE.</li> <li>On July 24, the company received approval from the NYSE for listing of its shares and trading commenced on July 27, 2017. The company remains listed on the Toronto Stock Exchange (TSX: CAL) and depositary interests in the common shares will be traded on AIM of the London Stock Exchange (CMCL). Trading of shares on OTCQX ceased upon commencement of trading on NYSE.</li> </ul>
<b>2018</b>	<ul style="list-style-type: none"> <li>In November, Caledonia entered into a sale agreement with Fremiro for the purchase of Fremiro's 15% shareholding in Blanket Mine, increasing its shareholding in Blanket Mine to 64%.</li> </ul>

## Premiums

**Increasing stakes from 49% to 64%:** The company is increasing its shareholding in Blanket to a majority stake, moving from 49% to 64% following a sale agreement with Fremiro to purchase Fremiro's 15% shareholding in Blanket Mine (1983) (Private) Limited.

**Higher free cash-flow generation:** The capital investments are funded through cash flow from operations. Once the central shaft is operational, Caledonia expects linear production ramp-up up to 80,000 ounces of gold by 2021. This will lead to excess cash from 2020. The company has no debt outstanding and only a small USD 1 mn working capital facility in Zimbabwe.

**Higher dividends and potential for further increase:** Caledonia has been paying dividend since the beginning of 2014. It paid quarterly dividend of 1.125 US cents in January and April 2016, following which the dividend was increased to 1.375 US cents. After the consolidation of the company's shares, it announced a quarterly dividend of 6.875 US cents. The company has further scope to increase the dividend once the central shaft is completed in 2020.

**Opportunities to increase resources and production:** Caledonia is engaged in further development of the Blanket mine and its surrounding properties. Drill drive development has advanced to improve access to test the potential for more resources at a depth where only limited drilling has been completed. On November 2, 2017, the company updated and increased the measured and inferred resources of the Blanket mine by 6% to 5.62 Metric tons (Mt) @ 3.95 Gram per ton (g/t) and indicated resources by 47% to 5.53 Mt @ 4.99 g/t. The company believes there is further scope to increase the resource estimate based on the ongoing exploration. The greenstone belt that hosts the Blanket mine is considered highly prospective and the company is well-funded to define additional resources and develop the mine to its full potential.

**Strong and experienced management team:** Caledonia has an experienced management team with a wealth of knowledge and expertise in Zimbabwe. The management team has diverse and relevant experience in the fields of exploration, mining operations, project development and also in corporate finance and investment banking.

Infrastructure	Location of mine
	

## Portfolio and Risks

**Commodity price risk:** Caledonia is primarily involved in exploration and mining of gold. The company's revenues have a direct exposure to the prices of gold, making revenues susceptible to gold price fluctuations. However, on August 17, 2018, the company entered into a hedge in respect of 8,000 ounces of gold over a period of 4 months. The hedge protects the company if the gold price falls below USD 1,150 per ounce and gives Caledonia full participation if the price of gold exceeds USD 1,195 per ounce.

**Credit risk:** Since January 2014, as per the regulations introduced by the Zimbabwean Ministry of Finance, all the gold produced in Zimbabwe must be sold to Fidelity Printers and Refiners Limited, at a spot price less than that of the early settlement discount. Presently, all payments from Fidelity have been cleared in full and on time. However, the rules that restrict gold sales only to Fidelity increase the company's credit risk.

*Exploration and development risk:* Over the long-term, Caledonia needs to identify new resources to replace ore depleted by mining activities and to commence new projects on time. There is no assurance that the exploration will result in identification of mineral resources sufficient for further development or production. The current revenue and cash generation of the company are exposed to development of the Blanket mine. Long-term growth of the company will depend on the exploration and development of additional resources. However, the company has expertise and a competitive advantage of developing and exploring mines in Zimbabwe, which reduces the risk.

*Country and political risk:* Caledonia's operations are located in Zimbabwe, which exposes the company to various political and economic risks. In 2009, the government abolished the Zimbabwe dollar and adopted US dollar as the functional currency. The company faces the risk of reintroduction of Zimbabwe dollar.

*Foreign currency risk:* Following an engagement entered on November 12, 2018, between Caledonia, other Zimbabwean gold miners, the Government of Zimbabwe and the Reserve Bank of Zimbabwe (RBZ), gold miners will receive 55% of their revenues into their foreign currency accounts (FCAs). Accordingly, 55% of Caledonia Mining's revenues being received in foreign currency exposes the company to substantial currency risk in the form of adverse currency movements.

## Corporate Strategy

*Execution of the Investment plan:* On November 3, 2014, the company announced the investment plan for further development and exploration of the Blanket mine. The plan covers the undertaking of several initiatives to access and exploit measured, indicated and inferred resources between 750 mtr – 1,000 mtr below the surface. It is expected that, the plan will improve Blanket's long-term operational efficiency, flexibility and sustainability. The key objective of the plan is to develop a 1,204 mtr central shaft to improve the underground infrastructure and logistics to allow an efficient and sustainable production build-up. The other improvements include the development of a tramming loop and the deepening of the No. 6 Winze, which are completed and contributing to its overall operations. Once completed, a linear ramp-up in the gold production up to 80,000 ounces per year is expected in 2021. Delivering the investment plan and further extension of the central shaft have constituted the key strategic focus of the company.

*Development of other mines:* The Blanket mine has numerous smaller satellite deposits or prospects in the exploration stage within the surrounding Gwanda greenstone terrain. Some of these properties have been operated historically and have shaft infrastructure facilities for rapid underground access for exploration and development of mining activity.

The company is also actively looking for acquisitions of various other mines and projects that meet its investment criteria. Once the investment plan is successfully delivered, the company expects significant excess cash flows from 2019 onwards; this, in turn, is expected to increase the company's scope to consider the acquisition of new properties for exploration and mine development.

The Gwanda greenstone terrain and the greater Zimbabwe region is considered highly prospective and underexplored and can be developed utilizing modern exploration techniques. With the company's operating success in Zimbabwe and its expertise and excellent relationship with the Zimbabwean government, the company holds a competitive edge to develop new projects.

## News

- **Revised Central Shaft project:** On November 13, 2018, the company published its financial results for the 9-month period ended September 2018, including important updates to its central shaft project. The company decided to terminate the vertical shaft sinking at 1,204 mtr, with three new production levels below 750 mtr. Towards the end of 2021, the company also intends to add a fourth production level via a decline which should allow production from below 34 level by mid-2024. Current depth of the shaft is estimated at 1,148 mtr.
- **Caledonia increases its shareholding in Blanket Mine to 64%:** On November 6, 2018, the company announced that it has entered into a sale agreement with Fremiro, to purchase Fremiro's 15% shareholding in Blanket. The transaction remains subject to approvals from various Zimbabwean regulatory authorities. The company has announced the transaction to buy one of its local Zimbabwean partners for approximately 6% dilution in its shareholder base, thus increasing its shareholding in the asset from 49% to 64%.
- **Blanket mine resource update:** On September 20, 2018, Caledonia announced a further upgrade to the resource base at Blanket. Total measured and indicated gold ounces at Blanket increased by 13% to 805,000 ounces in July 2018. Inferred gold resources at Blanket increased by 9% to 963,000 ounces, in July 2018. The resource upgrade marks the seventh successive year of sustained resource growth at Blanket. Blanket's resources have grown by approximately 86% since 2011; over 300,000 ounces have been mined over this period.
- **Announcement of Q3 2018 and 9M 2018 results:** On August 9, 2018, the company announced its Q3 2018 and 9M 2018 results. In Q3 2018, revenues decreased 8.7% year-on-year (YoY) to USD 16.65 mn due to a 2.9% year-on-year (YoY) decrease in total gold produced and a 5.9% YoY decrease in average realized gold price during the period. The company produced 13,978 ounces of gold in Q3 2018; 39,558 ounces for the nine months ended September 30, 2018. The average realized gold price was reported at USD 1,190 for Q3 2018 and USD 1,259 for 9M 2018. On-mine cost per ounce increased from USD 638 in Q3 2017 to USD 670 in Q3 2018, representing a 5.0% YoY increase, due to higher equipment maintenance costs and increases in the cost of certain consumables.
- **Monetary Environment in Zimbabwe:** On November 6, 2018, Caledonia confirmed that despite the reduction of foreign exchange in Zimbabwe, production continued without any disruption.
- **Update on production and earnings guidance for 2018:** The directors of Caledonia have decided to marginally reduce and narrow the range of 2018 production guidance from 55,000 to 59,000 ounces to a range of between 54,000 and 56,000 ounces. Caledonia remains on track to achieve its production target of 80,000 ounces in 2021. Assuming no material change in gold price and the company's operating costs, adjusted earnings are expected to fall in the USD 0.14 to USD 0.15 per share range in 2018.
- **Caledonia declared quarterly dividend:** On October 02, 2018, the company declared a quarterly dividend of 6.875 US cents on each of the company's common shares.
- **Purchase of securities by Director:** On August 10, 2018, the company announced that Leigh Wilson, a director and the chairman, had purchased a total of 4,000 common shares of no-par value each in the company at an average price per share of USD 8.435. Following this transaction, Mr. Wilson held 52,000 shares in the company, representing approximately 0.49% of the issued share capital of Caledonia.
- **Accident at Blanket Mine:** On July 12, 2018, the company announced a fatality at the Blanket mine in Zimbabwe in a mining-related accident. The accident occurred in a development area at the Blanket ore body section of the mine.

- **Production update for Q2 2018:** On July 12, 2018, the company announced that approximately 12,657 ounces of gold were produced during Q2 2018. Gold produced in H1 2018 was 25,582 ounces, marginally ahead of the 25,316 ounces produced in H1 2017. Caledonia maintained its 2018 full-year production guidance of 55,000 ounces to 59,000 ounces and remained on track with progress towards its long-term target of 80,000 ounces by 2021.
- **Caledonia declared quarterly dividend:** On July 3, 2018, the company declared a quarterly dividend of 6.875 US cents on each of the company's common shares.
- **Notice for change of auditor:** On May 18, 2018, the company announced change of its auditor from KPMG to Grand Thornton, effective from the next annual general meeting scheduled on June 27, 2018.
- **Increase to Zimbabwean Export Credit Incentive:** On April 4, 2018, the company announced that following the 2018 Monetary Policy Statement by the governor of the RBZ in February 2018, relating to an increase in the ECI paid to all gold miners from 2.5% to 10%, the Blanket Gold Mine received funds commensurate with the increased level of ECI for gold produced in February 2018.
- **Caledonia declared quarterly dividend:** On April 3, 2018, the company declared a quarterly dividend of 6.875 US cents on each of the company's common shares.
- **Announcement of FY 2017 results:** On March 21, 2018, the company announced its FY 2017 results. Revenues increased 12.5% YoY to USD 69.8 mn due to an 11.5% increase in the ounces of gold sold and a 0.9% increase in the average realized gold price. The on-mine cost per ounce for the year decreased by 0.4% from USD 636 per ounce in FY 2016 to USD 633 per ounce in FY 2017. The EPS stood at USD 0.88 per share.
- **Release of technical report:** On March 2, 2018, the company released an updated version of the 'National Instrument 43-101 Technical Report' on the Blanket Mine in Gwanda Area of Zimbabwe. The report pertained to the detailed description of the mine along with its location, feasibility and various types of risks.
- **Accident at Blanket Mine:** On February 26, 2018, the company announced a fatality at the Blanket Mine in Zimbabwe in a mining-related accident. The accident occurred in the Blanket Quartz Reef area of the mine.

## Listing Information

Caledonia is listed on the TSX (CAL) in Canada and on NYSE (CMCL) in the US. The depositary interests in shares are traded on London's AIM (CMCL). The company's headquarters are at Saint Helier, Jersey.

## Contacts

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## Major Shareholders

Equity Holder	Market Value of the Shares (USD) (mn)	Percentage shareholding (%)
Allan Gray International Proprietary Ltd	8.86	12.47%
Auwarter Heinrich	6.29	8.85%
Sales promotion Services SA	6.29	8.85%
TD Ameritrade	5.93	8.34%
Orbis Allan Gray Ltd	5.42	7.63%
UBS AG	3.83	5.40%
Sloane Robinson LLP	2.14	3.01%
Hillsdale Investment Management Inc.	0.83	1.17%
<i>Source: Bloomberg</i>		

## Management and Governance

Personnel	Designation	Current and total experience
<b>Steve Curtis</b>	<b>Chief Executive Officer (Caledonia Mining South Africa Proprietary Ltd)</b>	Curtis, a Chartered Accountant, has 30 years of experience and has held a number of senior financial positions in the manufacturing industry. He is a member of the South African Institute of Chartered Accountants and has graduated from the University of Cape Town. Previously, he served as Financial Director and then Managing Director of Jackstadt GmbH's South African operation. He has also been Director of Finance and Supply Chain for Avery Dennison South Africa, before joining Caledonia in March 2006. He was appointed to the Caledonia board in July 2008. He was Caledonia's Chief Financial Officer and later, in November 2014, was appointed as Caledonia's Chief Executive Officer.
<b>Dana Roets</b>	<b>Chief Operating Officer (Caledonia Mining South Africa Proprietary Ltd)</b>	Dana Roets, a qualified Mining Engineer, holds a B.Sc. in Mining Engineering from Pretoria University (1986) and an MBA from the University of Cape Town (1995). He has over 26 years of operational and managerial experience in the South African gold and platinum industry. He started his career with Gold Fields at the St Helena Gold mine as a graduate trainee and later went on to become Vice President and Head of Operations at Kloof Gold mine in January 1999. Later, he was the Chief Operating Officer at Great Basin Gold which had gold mining operations in the US and South Africa.
<b>Mark Learmonth</b>	<b>Chief Financial Officer</b>	Learmonth holds a graduate degree from Oxford University and is a Chartered Accountant. He has over 17 years of experience in corporate finance and investment banking, predominantly in the resources sector in Africa. Previously, he has held the position of a Division Director of Investment Banking at Macquarie First South in South Africa. He joined Caledonia in July 2008 and was appointed Caledonia's Chief Financial Officer in November 2014.
<b>Caxton Mangezi</b>	<b>General Manager and Director, Blanket Mine</b>	Mangezi, a qualified miner and mine manager, has worked at Blanket gold mine since 1969 in a range of roles, including geological technician, overseer miner and underground manager. He has been General Manager of Blanket mine since 1993.
<b>Maurice Mason</b>	<b>VP Corporate Development &amp; Investor Relations</b>	Maurice, an engineer, holds an MBA from Henley Reading University. He worked for six years with Anglo American in its Platinum and Coal operations based in both the Johannesburg and London offices. Prior to joining Caledonia, he was a securities analyst at Stifel, a US investment bank, where he focused on the mining sector.
<b>Adam Chester</b>	<b>General Counsel, Company Secretary and Head of Risk and Compliance</b>	Chester, a dual qualified lawyer (England and Jersey, Channel Islands), has worked as a solicitor of the Supreme Court of England and as an advocate of the Royal Court of Jersey at an international offshore law firm in which he has been a partner. He has extensive experience in advising businesses and individuals on a variety of commercial and corporate legal issues. He was appointed General Counsel, Company Secretary and Head of Risk and Compliance in January 2017.

## Assets and Projects

Caledonia is primarily involved in the exploration and development of mineral properties. Currently, the company is focused on exploration of the Blanket mine, a gold mine located in the southern region of Zimbabwe. Caledonia acquired the Blanket mine from the Kinross Gold Corporation in April 2006. In August 2018, Caledonia announced that an agreement had been reached to swap the 15% shareholding in Blanket held by local partners for a 6.4% interest in CMC Plc. Once this transaction has been legally completed, Caledonia is going to hold 64% of Blanket.

On November 3, 2014, the company announced an investment plan with an objective to improve the underground infrastructure and logistics, along with an efficient and sustainable production build-up. The Investment plan will improve the company's long-term operational efficiency, flexibility and sustainability. This is expected to lead to increased production, reduced operating costs and increased flexibility to undertake further exploration and development, thereby safeguarding and enhancing Blanket's long-term future. Following the successful implementation of the investment plan, the company expects to ramp-up the production capacity to approximately 80,000 ounces of gold by 2021.

This plan has undergone revisions in November 2017 and in September 2018. In Q4 2017, the company announced extension of the investment plan, at a capital cost of USD 18 mn, to extend the central shaft for an additional 250 mtr to a depth of 1,330 mtr. In Q3 2018, the company revised the Central Shaft project such that vertical shaft sinking will terminate at 1,204 mtr and will add three new production levels below 750 mtr. The decision was made to ensure that the completion of the shaft does not delay the planned production build-up, given that increased incidences of power interruptions had been adversely affecting progress. A fourth production level will be added via a decline which will start at the end of 2021. The decline is expected to allow production from below 34 Level to commence in mid-2024, which is the same as if the shaft had been extended to 38 Level. The shaft is currently at a depth of 1,148 mtr. Inferred resource upgrades during this period have also resulted in the extension of Blanket's life of mine plan by three years from 2031 to 2034.

## Company's Asset Portfolio

Project locations	Project overview
	<div style="text-align: center; background-color: #4F81BD; color: white; padding: 5px; font-weight: bold; font-size: 1.2em;">Blanket Mine</div> <div style="text-align: right; font-weight: bold; font-size: 1.2em;">Zimbabwe</div> <ul style="list-style-type: none"> <li>•Target Commodity: Gold</li> <li>•Area: ~2,500 hectares</li> <li>•Production:             <ul style="list-style-type: none"> <li>•2016: 50,351 ounces</li> <li>•2017: 56,133 ounces</li> <li>•9M 2018: 39,558 ounces</li> </ul> </li> <li>•Depth: 750 mtr below surface</li> <li>•Interest: 64%</li> <li>•All-in Sustaining Cost:             <ul style="list-style-type: none"> <li>•2016: USD 912 per ounce</li> <li>•2017: USD 847 per ounce</li> <li>•9M 2018: USD 812 per ounce</li> </ul> </li> </ul>
<p>Source: Company filings</p>	<p>Source: Company filings</p>

## Blanket Gold Mine

**Target commodities:** Gold

### Company's interest: 64%

In order to comply with Zimbabwean law, which requires that indigenous Zimbabweans should own at least 51% of the Blanket mine, the

company entered into an agreement to transfer 51% of interest in Blanket mine to the following:

- 16% interest to the National Indigenization and Economic Empowerment Fund ("NIEEF")
- 15% interest to Fremiro
- 10% interest to Blanket Employee Trust Services Limited ("BETS") for the benefit of present and future managers and employees
- 10% ownership interest to the Gwanda Community Share Ownership Trust ("Community Trust").

Now, the company has announced that it has entered into a sale agreement with Fremiro, to purchase Fremiro's 15% shareholding in Blanket Mine. The transaction remains subject to approval from various Zimbabwean regulatory authorities. Caledonia will acquire Fremiro's shareholding in Blanket for a gross consideration of USD 16.667 mn to be settled through a combination of:

- The cancellation of the loan between the two entities which stood at USD 11.467 mn as on June 30, 2018; and
- The issue of 727,266 new shares in Caledonia at an issue price of USD 7.15 per share.

On completion of the transaction, Caledonia will have a 64% shareholding in Blanket with the constituent Blanket shareholders as follows:

- 64% interest to wholly-owned subsidiaries of Caledonia,
- 10% to the National Indigenization and Economic Empowerment Fund,
- 10% interest to Blanket Employee Trust Services Limited for the benefit of present and future managers and employees, and
- 10% ownership interest to the Gwanda Community Share Ownership Trust.

Caledonia has funded the above-mentioned transaction by giving loans to indigenous Zimbabweans. The loans will be repaid by the dividends received from Blanket mine. Caledonia will receive 49% of the dividend from the Blanket mine and it will also receive 80% of the remaining 51% of the dividends paid to the indigenous Zimbabweans as a repayment towards the loan. a result of this transaction, the effective interest in

the dividends from Blanket mine to Caledonia is much higher than 49% on a temporary basis.

**Asset summary:** The Blanket mine is a well-established Zimbabwean gold mine with a gold production of 56,135 ounces in 2017 and 25,582 ounces in H1 2018. Blanket also holds extensive exploration properties both on the existing mine area and on its satellite projects, including the GG and Mascot projects. Caledonia acquired the Blanket mine from Kinross Gold Corporation with effect from April 2006.

Since the acquisition, Caledonia has made considerable capital investments in the mine underground facility, its surface area and the township facilities. The Blanket Gold Plant consists of crushing, milling, carbon-in-leach and batch elution electrowinning circuits.

The company has installed a new ball mill which has increased daily throughput by 20%, from 1,500 tpd to 1,850 tpd.

**Location:** The Blanket mine is located in the south-west of Zimbabwe, approximately 15 km west of Gwanda - the provincial capital of Matabeleland South. Gwanda is 150 km south east of Bulawayo (Zimbabwe's second-largest city) and 196 km northwest of the Beit Bridge Border post with South Africa, and 560 km from Harare, the capital of Zimbabwe.

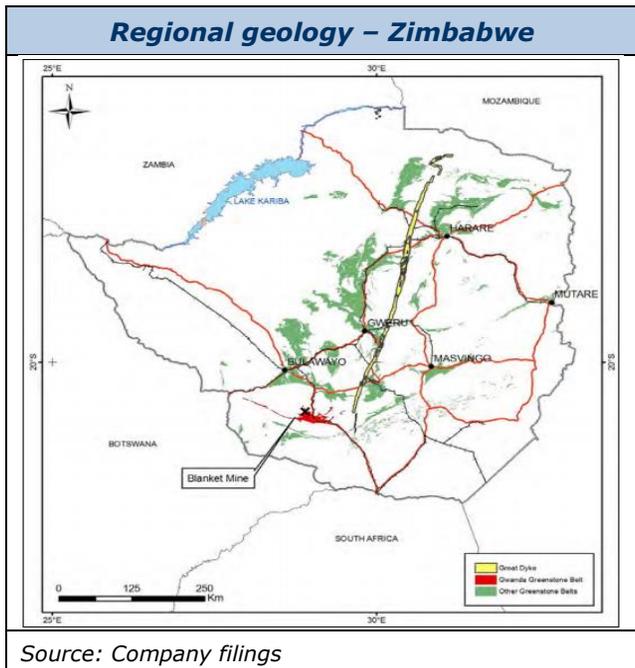
Access to the mine is via a road from Gwanda, which is linked from Beit Bridge to Bulawayo and Harare by a national highway. The road is accessible in all weather conditions. The company has also entered into an uninterrupted power supply agreement with the state-owned electricity supplier.

Availability of adequate infrastructure facilities, power backups and easy accessibility through roads enable effective functioning of the mine.

**Regional geology:** The Blanket mine is located in the northwest part of the Gwanda greenstone belt, an Archaean greenstone-hosted gold deposit. The Blanket gold deposit is the largest producing mine in the belt. The Gwanda greenstone Belt consists predominantly of basaltic rocks - greenstones with minor felsic and ultramafic units. The gold ore in the area has vertical orientation and is the result of the basaltic rocks.

Given the long history of gold production in the current region, the company has avenues for

greater exploration opportunities through modern exploration techniques.



**Property geology:** As the rock units of the Gwanda greenstone Belt are tilted towards the side, and strike north-south of the Blanket mine, the stratigraphic sequence is exposed to the oldest in the east to the youngest in the west.

Blanket mine is a part of the North Western Mining Camp, also referred to as the Sabiwa group of mines. These mines include Jethro in the south, Blanket, Feudal, AR South, AR Main, Sheet, Eroica and Lima in the north. Active mining occurs over a 3 km strike that includes 8 discrete vertical ore shoots along the north-south axis.

Gold mineralization takes place at ductile tensional high-strain areas of the shear zone, when rising hot fluids come in contact and react with iron rich minerals. Gold gets transported by the fluids and becomes attached to the arsenopyrite to form gold ore.

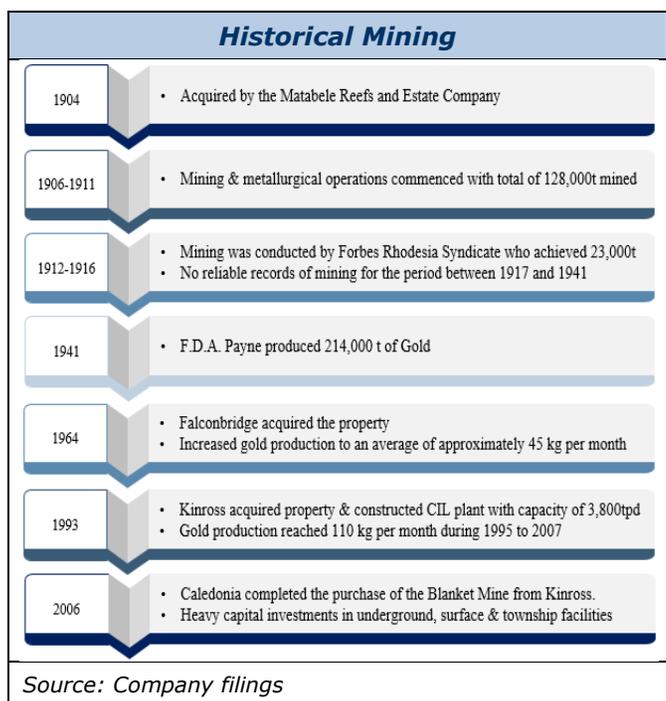
**Potential mineralization:**

On July 31, 2018, the company upgraded its mineral resource estimates for Blanket mine based on the recent exploration and diamond drilling activities. Currently, the project has a measured and indicated resource of 6.74 mn tons (at average grade of 3.72 g/t), and an inferred resource of 6.63 mn tons (at avg. grade of 4.52 g/t). The gold production for measured and

indicated resource increased by 13% to 805 kilotons (kt) compared to 714kt in August 2017, and the inferred resources increased by 9% to 963kt compared to 887kt in August 2017.

Resource estimate	Mn Tons	Grade g/t	Gold (Ounces)
Measured	2.01	3.80	245,000
Indicated	4.73	3.68	560,000
<b>M+I</b>	<b>6.74</b>	<b>3.72</b>	<b>805,000</b>
Inferred	6.63	4.52	963,000

**Historical mining:** Given below are the key highlights of historical events of Blanket mine.



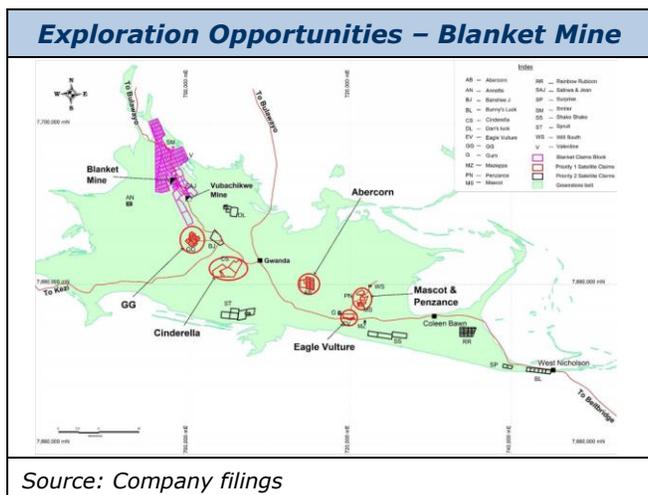
In late 2010, Blanket mine successfully completed an expansion project which increased the production capacity from 24,000 ounces of gold per annum to 40,000 ounces of gold per annum.

**Mining operations and explorations:** The Blanket mining area covers total eight ore shoots in the producing section of the mine. Out of this, AR Main and AR South are up to 30 mtr wide and are the largest ore bodies, while the other Blanket ore bodies are tabular shaped ores. Due to this, AR Main and AR South are ideally suited for the long-hole open stope mining method, while the others are suited for underhand stoping methods.

The Jethro & Eroica Shafts and the No. 5 & No. 6 Winzes are used for transporting personnel and materials underground.

Currently, most of the gold production is sourced from the AR Main Ore bodies. Blanket, AR Main and Eroica were the main attraction for drilling in 2016. In 2017, the company was focused towards AR South, with only limited drilling below 22 level.

In 2016, the company drilled 19,768 mtr compared to 14,948 mtr in 2015, an increase of 32.2% primarily because of purchase of new drill machines during the first half of 2016. In 2017, the company completed 19,035 mtr of drilling and this entailed a total drilling of 66,665 mtr by the end of 2017.



Source: Company filings

**Metallurgical process:** Ore fed into the belt is crushed to minus 50 mmtr using Telsmith jaw crushers. Ore from stockpile conveyor, having live capacity of 2,000 tons, is further reduced to minus 12 mmtr by one of the two 38H Telsmith Gyrasphere crushers.

The 12 mmtr ore is then fed into 600-ton Mill Bin, where it is milled to 70% passing microns. Later, it is passed through Knelson Concentrators where 49% of the total gold production is recovered.

The Knelson Concentrator tails are pumped into a regrind ball mill. The insoluble particles from the mill are injected into the carbon-in-leach plant where assimilation of dissolved gold onto activated carbons takes place. The carbon-in-leach plant has over capacity of 3,800 tpd.

Gold solids from steel wool cathodes are heated in an induction furnace to produce gold bullion of

90% purity. With the setting up of an automated liquid sodium cyanide facility and effective functioning of CIL agitators, gold recovery rates increased to 94% from 85% since the acquisition of Caledonia.

The current crushing and milling capacity of 1,850 tpd meets the requirements of the Blanket mine. There is spare Carbon-in-leach capacity up to 3,800 tpd required at the Blanket mine so there is potential to treat more ore if new supplies can be identified in the future. In 2016, the company completed a few capital development projects in the metallurgical process:

1. Commissioned the new conveyor system from the secondary crushers to the new fine ore bin;
2. A new No. 8 ball mill was installed to increase the milling capacity to 90 tph, sufficient to mill the 650,000 tons per annum which would be required to produce 80,000 ounces of gold per annum by 2021
3. The refurbishment of the carbon-in-leach tanks

**Investment plan:** On November 3, 2014, the company announced the investment plan and the production projections for the Blanket mine. This plan was further revised in November 2017, following the resource upgrade announced on July 31, 2018. With this, the company targeted to improve the underground infrastructure and logistics, while allowing an efficient and sustainable production build-up. This is also expected to bring down unit costs, thus, leading to an increase in margins.

The investment plan includes the development of a tramming loop, deepening the No. 6 Winze and sinking a new 6 mtr diameter Central Shaft of 1,204 mtr.

- **No. 6 Winze Project** - The No. 6 Winze project has enabled the company to get access to the four Blanket resources below 750 mtr level. The company completed this project at the end of Q1 2016 and currently has access to the ore below 750 mtr.

The company plans to get further access, deepening down to 980 mtr and expects to commence the operations after the completion of central shaft.

- **Tramming Loop** - The development of Tramming loop has resulted in better underground logistics along with increase in

mine production. Loop work commenced during October 2014 and was completed in the second half of 2015. Since the completion, the company has consistently increased mine production.

- **Central Shaft** - is the key to the investment plan. The project comprises a new 6 mtr diameter, four-compartment shaft from the surface to 1,204 mtr below the surface that will transport men, equipment and materials with a capacity of 3,000 tpd. The shaft will be located between the AR Main and AR South ore bodies, in the middle of the Blanket's mining area.

Permanent sinking of the central shaft started in May 2016 and is currently 1,148 mtr deep with 42 mtr of sinking achieved during Q3 2018. Currently, a horizontal development is being done on 26 level with the station being cut and 70 mtr of level development up to the tipping area.

The total capital cost of the expansion project is expected to be approximately USD 70 mn. The figure includes the central shaft, horizontal development, the new ball mill and additional surface and underground infrastructure.

After the development of central shaft and the deepening of No. 6 Winze, the company will have access to the inferred mineral resources below 750 mtr. This will also provide further exploration and development of mines in other ore sections.

The investment plan is expected to increase the resource production to 80,000 ounces by 2021. This will also have a positive impact on the company's operational efficiency and sustainability.

**Extension of Central Shaft:** On November 10, 2017, the company announced the deepening of the central shaft by an additional 250 mtr to a target depth of 1,330 mtr. The 6 Winze sub-shaft located close to 5 Winze sub-shaft is used to access the Blanket complex below 750 mtr level and will provide secondary access to the new central shaft. However, progress on sinking the shaft was adversely affected by several factors, which included - the raise boring of the ventilation hole from 870 mtr to 750mtr, power trips due to the unstable incoming supply from the grid, the installation of mid-shaft loading,

which took longer than expected, and the requirement to progress horizontal development on the 26 and 30 levels. Production in 2017 was disrupted by an inconsistent supply of electricity from the national grid. Incidences of power interruptions increased in 2018. Hence, to ensure that the completion of the shaft does not delay the planned production build-up, the company further revised the central shaft project on November 13, 2018. Accordingly, the vertical shaft sinking will terminate at 1,204 mtr with three new production levels below 750 mtr. A fourth production level will be added via a decline which will start at the end of 2021. The decline is expected to allow production from below 34 Level to commence in mid-2024, which is the same as the shaft having been extended to 38 Level. The shaft is currently at a depth of 1,148 mtr.

Approximately USD 51 mn of capital investment is expected to occur from 2018 to 2022, and, Caledonia is planning to fund the capital cost from the internally generated cash flow without affecting the current dividend policy.

The Preliminary Economic Assessment of the extension project indicates an NPV of USD 193 mn, considering a 10% discount rate for an average gold price of USD 1,260 per ounce.

Caledonia is also developing a mid-shaft loading system at the Blanket mine, using the central shaft infrastructure, to better manage the waste and to reduce the logistics constraints. The mid-shaft loading system is expected to improve the overall project's waste management system and will also provide operational and production flexibility.

The development will also enable the company to commence the horizontal development on 26 and 30 levels, 10 months earlier than the original planned. Once operational, the No. 6 Winze will be capable to hoist more ore, rather than hoisting ore and waste.

**AR South Decline:** In addition to the Investment plan, Caledonia is involved in the development of AR South Ore body below 750 mtr. Currently, the company is extending the exploration of AR South to 870 mtr to have access to further mineral deposits below 750 mtr.

**AR Main Decline:** During Q2 2017, the company commenced the development of AR Main ore

body below 750 mtr and planned to extract the resources from 750 mtr to 780 mtr.

**Development of Non-Producing Claims:** In the area surrounding existing mines, the company has 18 other brownfield projects, many of which have been mined commercially from the early 1900s until the 1960s. Although historical operations, these mines have shaft infrastructure facilities for rapid underground access for exploration and development of mining activity.

Out of these projects, the company has commenced exploration of GG and Mascot properties to assess their potential. If successful, the extracted ore will be processed at the Blanket plant.

**GG project:** GG project is located 7km south east of Blanket mine. 4,751 mtr of drilling has been carried out, which includes 17 diamond-cored holes. Two economic gold mineralization zones at a depth of 200 mtr each having a strike length of 150 mtr have been established.

An existing shaft is present to a depth of 120 mtr and mineralization below 60 mtr of the surface has returned an average grade of 6.0g/t gold. The sulfide intensity has reduced between 60 mtr and 90 mtr levels with the shear structure remaining intact.

Horizontal development has commenced at 60 mtr, 90 mtr and 120 mtr levels to allow for diamond drilling of the identified zones. Four holes totaling 400 mtr have been drilled to investigate the North Main Shear and three holes have intersected mineralization with grades and thickness of 4g/t over about 2 mtr.

Given below are the mineral resource estimates for the GG property:

Resource estimate	Tons	Grade (g/t)	Gold (Ounces)
Measured (M)	127,178	3.79	15,486
Indicated (I)	55,123	5.86	10,386
<b>M + I</b>	<b>182,301</b>	<b>4.41</b>	<b>25,872</b>
Inferred	110,242	2.87	10,173

## GG Project



Source: Company filings

**Mascot Project:** The Mascot project area has three existing shafts - Mascot, Penzance and Eagle Vulture extending to 450 mtr depth. Production has ceased due to political issues and limited technology, and hence requires extensive rehabilitation. The company has prioritized Mascot and work at Penzance and Eagle Vulture will commence after completion of underground development at Mascot.

The management believes that the application of modern exploration and processing techniques may allow some or all of these shafts to operate profitably for a period of time. After installation of ZESA electricity, the shaft was re-accessed to 120 mtr below the surface.

Below are the mineral resource estimates for the Mascot property:

Resource estimate	Tons	Grade g/T	Gold (Ounces)
Measured (M)	66,532	2.60	5,571
Indicated (I)	69,006	4.83	10,716
<b>M + I</b>	<b>135,538</b>	<b>3.74</b>	<b>16,288</b>
Inferred	69,587	8.23	18,416

Due to high capital investment, works at GG and Mascot were suspended in 2016 and resources were diverted towards Blanket at the AR South. The company believes that there will be better returns on the capital investment in the Blanket. During Q2 2018, 1,346 tons of low-grade material from Mascot was treated at the pilot plant over a 28-day period. This work indicated that the material from Mascot is amenable to be processing at the existing Blanket plant. Operations at the pilot plant were suspended at the end of Q2 2018 as there was no high-grade

material available from Mascot to allow this study to be completed.



### Financial Summary: -

**9M 2018 vs. 9M 2017:** Revenues during 9M 2018 increased by 1.5% YoY to USD 50.9 mn, reflecting a 0.4% decrease in sales volumes and 1.7% increase in sales price. The company sold 39,558 ounces during 9M 2018 at an average price of USD 1,259 per ounce, compared to 39,710 ounces at a price of USD 1,238 per ounce during 9M 2017.

in USD '000	9M 2018	9M 2017	Δ
Gold sales (oz)	39,558	39,710	-0.4%
Average gold price (USD/oz)	1,259	1,238	1.7%
Revenues	50,904	50,163	1.5%
Operating Profit	15,413	13,807	11.6%
Profit After Tax	10,170	7,907	29.6%
Basic Adjusted EPS (USD cents)	108.3	86.9	24.6%
Cash and cash equivalents	11,830	5,896	100.65%

The all-in sustaining cost decreased by 1.8% to USD 812 per ounce in 9M 2018 compared to USD 827 per ounce in 9M 2017, notwithstanding higher on-mine cost due to higher ECI. The increase in on-mine cost from USD 663 per ounce in 9M 2017 to USD 691 per ounce in 9M 2018 was attributable to higher equipment maintenance costs and increases in the cost of certain consumables.

### Historic unit costs for Blanket Mine



Source: Company filings

**Q3 2018 vs. Q3 2017:** In Q3 2018, revenues decreased by 8.7% from USD 18.2 mn in Q3 2017 to USD 16.6 mn. The decline was primarily due to a 2.9% decrease in gold ounces sold from 14,396 ounces in Q3 2017 to 13,978 ounces in Q3 2018 and a 5.9% decrease in the average realized price of gold from USD 1,265 per ounce in Q3 2017 to USD 1,190 per ounce in Q3 2018. Operating profit declined from USD 6.2 mn to USD 4.3 mn on a YoY basis. Profit was lower by 21.6%, from USD 3.8 mn in Q3 2017 to USD 3.0 mn in Q3 2018. Basic adjusted EPS declined from USD 0.40 to USD 0.33 over the compared periods.

in USD '000	Q3 2018	Q3 2017	Δ
Gold sales (oz)	13,978	14,396	-2.9%
Average gold price (USD/oz)	1,190	1,265	-5.9%
Revenues	16,647	18,230	-8.7%
Operating Profit	4,846	7,229	-33%
Profit After Tax	2,224	3,120	-28.7%
Basic Adjusted EPS (USD cents)	33.1	39.9	-17.0%

The all-in sustainability cost per ounce declined by 2.5%, notwithstanding the higher on-mine cost, primarily due to the higher ECI. The operating profit decreased sharply in the quarter owing to lower revenues and increased production costs.

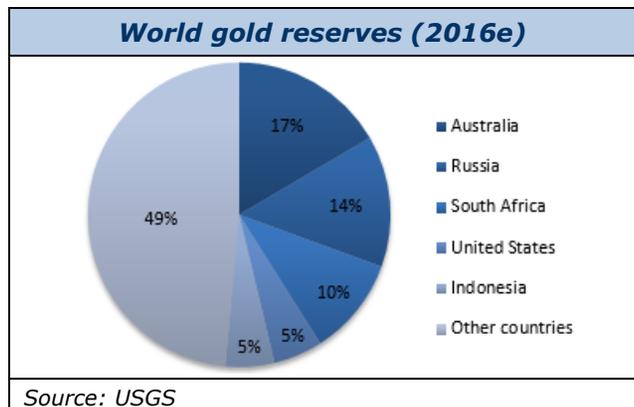


**Technologies and Markets**

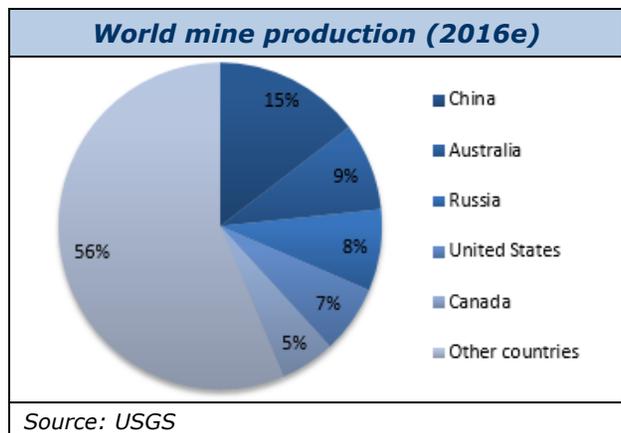
**Gold**

**Chemistry and Properties:** Gold (Au) with an atomic number of 79 is a dense, soft and shiny metal. It is the most malleable and ductile of all metals; it is bright yellow in color and luster. It is a transition metal and can form trivalent and univalent cations in solutions. Pure gold is chemically least reactive and is solid under standard conditions.

**Sources**<sup>viii</sup>: Mostly, Gold occurs in native forms as nuggets or grains in rocks, veins, and alluvial deposits. According to a US Geological Survey (USGS) report, the global gold reserves stood at 57,000 MMT in 2015.



**Supply and Production**<sup>ix</sup>: Gold production involves comparatively long lead times, with new mines taking up to 10 years to come onstream. As a result, its output is relatively inelastic to change in price outlook. The global mine production in 2016 remained constant at 3.10 MT when compared with that in 2015.



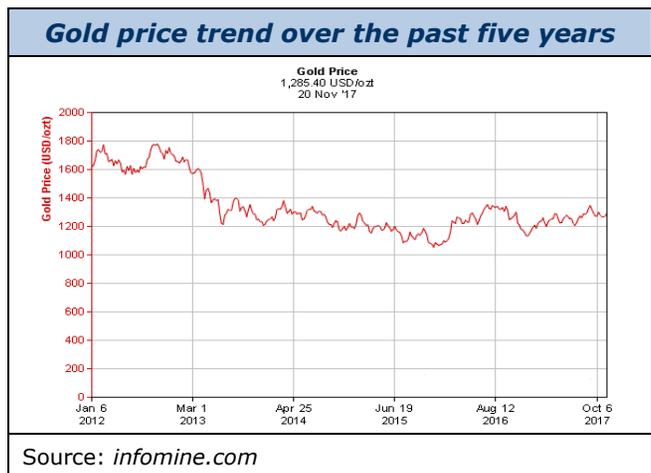
**Applications:** Gold is a precious metal used as coins or bars, as an investment, jewelry and for technological purposes. It also has industrial uses, including medicine, food and beverages and electronics due to its good resistance to oxidative corrosion and excellent quality as a conductor of electricity.

**Demand:** Gold demand is mainly driven by the need for preservation of value. The bullion's modest price recovery, as compared with other commodities, resulted in a reduction in spending on exploration to less than USD 4 bn from almost USD 10 bn in 2012.

Such a scenario has left many companies in the gold industry forecasting a supply shortage by the end of the decade. Across the world, miners have instead spent their cash in expanding existing deposits, improving efficiency or cautiously looking at acquisitions.

**Commodity Pricing**<sup>x</sup>: Gold prices have been rising since 2001, when price was around USD 250/oz, and reached record levels in September 2011 driven by an increase in money supply in the US.

However, during 2015, the average gold price declined by 7% YoY due to the Fed tightening and consequent strengthening of the USD, low global inflationary pressure, and lower demand from India and China. Currently, gold prices are at USD 1,222.90/oz.



**Zimbabwe's Mineral Scenario<sup>xi</sup>**: A leading gold producer, Zimbabwe's gold production reached a peak of 29.7 tons in 1999. Though in 2008, the production fell drastically to just 3.5 tons as all gold mines in Zimbabwe were shut down due to the RBZ's inability to pay for gold (as per the prior to February 2009 regulations, the RBZ was the sole buyer of gold produced in Zimbabwe). Post-liberalization, most of the Zimbabwean gold

mines reopened, leading to an increase in gold production to 13 tons in 2013.

After realizing the contribution of the mining industry to the economy, particularly gold mining, the Zimbabwean government relaxed restrictions over foreign payments in February 2009. Recently, currency exchange controls have been reintroduced with restrictions on the payment of foreign currency out of the country.

## Project Risk Profile Analysis

Based on our analysis of the project stage, resource characteristics and management expertise, we believe that the Blanket mine has a low risk profile.

### Blanket Mine Project – LOW

#### Project Stage Risk – LOW

- Caledonia acquired the Blanket mine in April 2006, and since then, has made significant developments in the mine. The mine is currently fully operational and has produced 39,558 ounces of gold with a revenue of USD 50.9 mn so far in 2018 (9M 2018).
- On November 4, 2014, the company announced 'the investment plan' to further improve the underground infrastructure and logistics thereby allowing sustainable gold production below 750 mtr level. In Q4 2017, the company revised the deepening of central shaft to 1,330 mtr. In Q3 2018, the company further revised the central shaft project such that the vertical shaft sinking will terminate at 1,204 mtr. Three new production levels are expected to be added below 750 mtr, and a fourth will be added via a decline towards the end of 2021. Accordingly, the company should be able to secure production from below the 34 Level commencing mid-2024.
- The company is currently on track to complete the development of central shaft by 2020. This will further increase the production to 80,000 ounces by 2021.
- As of July 31, 2018, the mine had measured and indicated resources of 6.74Mt @ 3.72 g/t and inferred resources of 5.63Mt @ 4.52 g/t. As a result of the resource upgrade, Blanket has extended its life of mine plan by a further three years to 2034.
- Based on the above factors, we consider the Blanket mine to have a low project risk.

#### Financing/Capex Risk – LOW

- Since its acquisition in 2006, the company has invested significant capital to increase the mine's production capacity.
- As per the current investment plan, the company is currently focused on the development of central shaft to gain further

access to resources below 750 mtr. The total estimated capital expenditure for the expansion is expected to be approximately USD 70 mn and is expected to be funded from its projected cash flow.

- Since the implementation of the investment plan, the company has successfully funded the required capital expenditure from the internally generated cash flows.
- Once the development of central shaft is completed in 2020, the company expects significant excess cash flow, which can be used to fund any further mine developments.
- Based on the above factors, we consider Blanket mine to have a low financing risk profile.

#### Operational Risk – LOW

- Blanket has been in operation since it was acquired by the company in 2006. It is well-connected to the road from Gwanda, which is linked from Beit Bridge to Bulawayo and Harare by a national highway.
- The company is well-positioned to complete the development of the Central Shaft. Once operational, it will lead to linear ramp-up in the gold production from current level of 55,000 to 80,000 ounces by 2021.
- All the gold production is currently sold to Fidelity, a subsidiary of RBZ, at spot price less an early settlement discount of 1.25%. The company is always paid within 24 hours of the delivery of the gold and has never experienced a late payment.
- Furthermore, the project has no known regulatory or environmental interferences which will hamper the development.
- Considering the above factors, we believe that the project has attractive operational characteristics. As such, we believe the project has a low operational risk profile.

#### Key Personnel Risk – LOW

- The current management has operational and managerial experience in exploration, mining operations, project development, and also in the finance and investment banking functions.
- A member of the management team is also involved in development of Blanket gold mine since 1969 with experience as a geological

technician, overseer miner and underground manager.

- Considering the diversified experience of the management, we consider the project to have a low-key personnel risk profile.

## Risk Parameters – Definition

### Project Stage Risk

The following are the various stages of a project:

- **Early-stage exploration:** In this stage, the exploration location is decided using a combination of various techniques such as sampling, drilling, geophysics, and other extensive geological and exploration services.
- **Pre-feasibility study:** A preferred base-case option is identified from the possible options available to the company. The preferred base-case option provides some level of confidence in the production capacity, ore grades, metal recovery, capital and operating costs, project schedule, and project risks/opportunities. A financial analysis is also carried out to assess the economic viability of the project.
- **Feasibility study:** This includes a collection of more detailed information, additional designs, and project-specific cost information to refine the project cost and schedule. It also addresses information gaps, issues of concern, risks, and opportunities identified in the advanced exploration stage.
- **Detailed engineering:** Detailed designs based on the project scope, concept designs, and the purchase of key plant equipment are completed.
- **Site construction:** Site construction starts as per the field engineering designs and is expected to confirm adherence to appropriate quality-control practices.
- **Commissioning and start of operations:** After the completion of construction, operability testing, and acceptance, the owner is asked to confirm if the project construction and performance are as per the design and meet the required plant performance and safety requirements. The final operating control programs are then completed, installed, and tested for functional efficiencies.

*High risk:* We consider a project to have high risk when it is in the initial stages of development and is yet to report a resource estimate on the prospect.

*Medium risk:* On the completion of a pre-feasibility report having initial evaluations of mine characteristics and other operational estimates

such as capex and opex, project stage risk is reduced from high to medium.

*Low risk:* As the project advances to site construction and commissioning, the project stage risk is reduced further to the low risk category.

### Project Financing Risk

Initial stages of project development, including exploration and resource estimation, require higher levels of capital investment. Investments in the exploration stage can be riskier as the economic viability of deposit is not established. The risk level of the capital reduces as it advances through various exploration stages.

Initial stages of exploration and development of the project attract high-risk capital investors. As the project stages proceed, the company has varied options such as equity (IPO) and debt financing, among others.

*High risk:* Companies in the initial stages of project development, without proper estimates on fund requirement and clear view on financing options, are considered to have high financing risk.

*Medium risk:* When a company has established reasonable estimates on fund requirement and has visibility on early funding for planned project milestones, it is estimated to have medium financing risk.

*Low risk:* When the company's fund requirements are clearly stated and has already secured adequate funding, the company has low financing risk.

### Operational Risk

The following are the various parameters considered to measure operational risk:

- **Geopolitical and Regulatory factors:** The location of projects and their regulatory environment are key factors in acquiring licence and the subsequent development of the project. Obtaining necessary approvals can be time consuming, the delay of which could result in monetary losses, and operational delay.
- **Environmental factors:** The potential for environmental damage caused by mining activity and the likely cost to be covered by

the company contribute to the economic viability of the project.

- **Mining technique:** The development plan for the mines, including the extraction methodology and the corresponding capex estimates, together define the operational efficiency of the project. The high quality of ore reserves (grade) and the ease for extraction provide higher return on investment and reduce the operational risk involved.
- **Geotechnical and other factors:** Mining machinery transportation, implementation of new technology for operations, and availability of power supply in areas with complicated geological and climatic conditions determine operational risks. Other risks include chances of flooding, pit slope, rim slide and accidents caused by the use of mining transport equipment in adverse weather conditions.

We consider a project based on all the above parameters and assign high-/medium-/low-risk profiles in comparison with their peers. Also, as the company moves to advanced stages, operational risk is reduced considerably.

*High risk:* The company has a high operational risk profile with assets that are in an early stage of development and located in countries with regulatory uncertainties.

*Medium risk:* As the company progresses towards the acquisition of necessary licenses and environmental clearances, regulatory risks are reduced. Also, depending on the resource grade and the possible methodologies of extraction, an operational risk profile is assigned in comparison with peers.

*Low risk:* A company that is in the advanced stages of development has attractive project characteristics, such as ore grade, capex, opex. NPV and IRR too have low operational risk profiles.

### **Key Personnel Risk**

We consider a project to be of a lower risk profile if the management team is highly qualified, has good experience in the resource sector and has lower dependability on a few people. It is desirable that the company has independent directors on its board and does not rely heavily on a few individuals.

## Value

The Fair Market Value of Caledonia shares stands between USD 154.23 mn and USD 156.79 mn.

The Fair Market Value for one Caledonia's publicly traded share stands between USD 14.55 to USD 14.79.

### Caledonia Mining Corporation Plc. Balance Sheet Forecast

#### CONSOLIDATED BALANCE SHEET

All figures in  
'000 USD,  
unless stated  
differently

High bracket estimates

Year ending Dec 31	2018E	2019E	2020E	2021E	2022E	2023E	2024E
Total Current Assets	29,680	31,385	44,143	64,566	89,369	1,18,093	1,48,280
Total Non-Current Assets	97,704	1,12,764	1,20,189	1,25,261	1,28,109	1,30,800	1,31,399
<b>TOTAL ASSETS</b>	<b>1,27,385</b>	<b>1,44,149</b>	<b>1,64,332</b>	<b>1,89,826</b>	<b>2,17,477</b>	<b>2,48,893</b>	<b>2,79,678</b>
Total Current Liabilities	16,037	16,698	13,042	9,963	7,600	7,399	7,373
Total Non-Current Liabilities	29,189	29,189	29,189	29,189	29,189	29,189	29,189
<b>TOTAL LIABILITIES</b>	<b>45,226</b>	<b>45,887</b>	<b>42,231</b>	<b>39,152</b>	<b>36,789</b>	<b>36,588</b>	<b>36,562</b>
Total Shareholders' Equity	82,159	98,262	1,22,101	1,50,674	1,80,688	2,12,306	2,43,116
<b>TOTAL LIABILITIES and EQUITY</b>	<b>1,27,385</b>	<b>1,44,149</b>	<b>1,64,332</b>	<b>1,89,826</b>	<b>2,17,477</b>	<b>2,48,893</b>	<b>2,79,678</b>

#### CONSOLIDATED BALANCE SHEET

All figures in  
'000 USD,  
unless stated  
differently

Low bracket estimates

Year ending Dec 31	2018E	2019E	2020E	2021E	2022E	2023E	2024E
Total Current Assets	28,965	30,198	41,687	61,286	85,453	1,13,465	1,42,975
Total Non-Current Assets	97,704	1,12,764	1,20,189	1,25,261	1,28,109	1,30,800	1,31,399
<b>TOTAL ASSETS</b>	<b>126,669</b>	<b>142,962</b>	<b>161,876</b>	<b>186,546</b>	<b>213,561</b>	<b>244,265</b>	<b>274,374</b>
Total Current Liabilities	16,037	16,775	13,115	10,140	7,832	7,628	7,605
Total Non-current Liabilities	29,189	29,189	29,189	29,189	29,189	29,189	29,189
<b>TOTAL LIABILITIES</b>	<b>45,226</b>	<b>45,964</b>	<b>42,304</b>	<b>39,329</b>	<b>37,021</b>	<b>36,817</b>	<b>36,794</b>
Total Shareholders' Equity	81,443	96,998	119,572	147,217	176,540	207,448	237,580
<b>TOTAL LIABILITIES and EQUITY</b>	<b>126,669</b>	<b>142,962</b>	<b>161,876</b>	<b>186,546</b>	<b>213,561</b>	<b>244,265</b>	<b>274,374</b>

### Important information on Arrowhead methodology

The principles of the valuation methodology employed by Arrowhead BID are variable to a certain extent, depending on the sub-sectors in which the research is conducted. However, all Arrowhead valuation researches possess an underlying set of common principles and a generally common quantitative process.

With Arrowhead commercial and technical due diligence, the company researches the fundamentals, assets and liabilities of a company, and builds estimates for revenue and expenditure over a coherently determined forecast period.

Elements of past performance such as price/earnings ratios, indicated as applicable, are mainly for reference. Still, elements of real-world past performance enter the valuation through their impact on the commercial and technical due diligence.

## Arrowhead BID Fair Market Value Bracket

The Arrowhead Fair Market Value is given as a bracket. This is based on quantitative key variable analyses such as key price analysis for revenue and cost drivers or analysis and discounts on revenue estimates for projects, especially relevant to projects estimated to provide revenue near the end of the chosen forecast period. Low and high estimates for key variables are produced as a valuation tool.

In principle, an investor comfortable with high brackets of our key variable analysis will align with the high bracket in the Arrowhead Fair Value Bracket, and, likewise, in terms of low estimates. The investor will also note the company's intangibles to analyze the strengths and weaknesses, and other essential company information. These intangibles serve as supplementary decision factors for adding or subtracting a premium in investor's own analysis.

The bracket should be taken as a tool by Arrowhead BID for the reader of this report and the reader should not solely rely on this information to make his decision on any particular security. The reader must also understand that while on the one hand global capital markets contain inefficiencies, especially in terms of information, on the other, corporations and their commercial and technical positions evolve rapidly. This present edition of the Arrowhead valuation is for a short- to medium-term alignment analysis (one to twelve months). The reader should refer to important disclosures on page 25 of this report.

## Information on the Caledonia Mining Corporation Plc. valuation

**Caledonia mining valuation methodology:** The Arrowhead fair valuation of Caledonia is based on the DCF valuation method of Blanket mine.

**Time horizon:** The Arrowhead fair valuation for Caledonia is based on the DCF method. The time period chosen for the valuation is as per the Blanket mine's life. We expect revenues and cash flow from operations to ramp up significantly after 2020 as it is expected that the company would successfully deliver the investment plan.

**Underlying business plan:** Caledonia is currently focused on exploration and development of its flagship project Blanket mine.

**Terminal value:** The terminal value is estimated to depend on a terminal growth rate of 0%, representing the maturity, technology change, and prospective competitiveness in the business.

**Prudential nature of valuation:** This Arrowhead Fair Value Bracket estimate is a relatively prudential estimate, as it is based on the company's current flagship project – Blanket mine – and excludes the value of other projects – GG and Mascot.

## Key variables in Caledonia revenue estimations

### Variable 1 – Hypothesis for production

We believe the company will be able to achieve the production as per the life-of-mine plan. Grade and recovery rate are based on the company's estimates.

Tons Milled in '000 Tons	2018E	2019E	2020E	2021E
Low	554.0	560.0	635.0	715.0
High	564.0	570.0	640.0	720.0

Gold Head (Feed) Grade (g/t Au)	
Low	3.7
High	3.8

Gold Recovery (%)	
Low	93.0 %
High	93.5 %

Resource Estimate	Measured + Indicated	Inferred
Low	800,000.0	960,000.0
High	805,000.0	963,000.0

### Variable 2 – Metal prices

Forecast prices are based on the estimates from Bloomberg

Average realized gold price USD/ounce	2018E	2019E	2020E	2021E
Low	1,275.0	1,290.0	1,310.0	1,320.0
High	1,280.0	1,295.0	1,315.0	1,330.0

## Valuation

### WACC

Risk-free rate	8.7%	xii
Beta	0.6	xiii
Risk premium	1.6%	xiv
Additional risk premium	0.5%	
Cost of equity	10.1%	
Terminal Growth Rate	0.0%	

	Production capacity	Commodity price	Exchange rate
Max value	Please refer to the Key Variables Section		
Min value			

## Cumulative Cash Flows and Valuation

### FCFE (High) Time Period ->

	2018E	2019E	2020E	2021E	2022E	2023E	2024E
EBITDA	28,566	33,439	42,132	48,666	47,599	47,704	46,853
Tax	(4,206)	(5,183)	(6,730)	(8,338)	(8,097)	(10,715)	(10,465)
Capital Expenditure	(20,614)	(21,000)	(14,000)	(12,000)	(10,000)	(10,000)	(8,000)
<b>Free Cash Flow</b>	<b>3,746</b>	<b>7,256</b>	<b>21,401</b>	<b>28,328</b>	<b>29,502</b>	<b>26,989</b>	<b>28,388</b>
<b>Caledonia Share of FCF</b>	<b>3,139</b>	<b>6,081</b>	<b>17,934</b>	<b>23,739</b>	<b>24,723</b>	<b>22,617</b>	<b>23,789</b>
<b>Discount Factor</b>	<b>1.00</b>	<b>0.91</b>	<b>0.82</b>	<b>0.75</b>	<b>0.68</b>	<b>0.62</b>	<b>0.56</b>
<b>PV of FCF</b>	<b>3,136</b>	<b>5,518</b>	<b>14,785</b>	<b>17,779</b>	<b>20,072</b>	<b>16,681</b>	<b>15,940</b>

### FCFE (Low) Time Period ->

	2018E	2019E	2020E	2021E	2022E	2023E	2024E
EBITDA	27,540	32,652	40,457	47,437	46,749	46,873	46,058
Tax	(4,021)	(5,034)	(6,412)	(8,092)	(7,927)	(10,495)	(10,254)
Capital Expenditure	(20,614)	(21,000)	(14,000)	(12,000)	(10,000)	(10,000)	(8,000)
<b>Free Cash Flow</b>	<b>2,905</b>	<b>6,619</b>	<b>20,045</b>	<b>27,345</b>	<b>28,822</b>	<b>26,379</b>	<b>27,804</b>
<b>Caledonia Share of FCF</b>	<b>2,434</b>	<b>5,546</b>	<b>16,798</b>	<b>22,915</b>	<b>24,153</b>	<b>22,105</b>	<b>23,299</b>
<b>Discount Factor</b>	<b>1.00</b>	<b>0.91</b>	<b>0.82</b>	<b>0.75</b>	<b>0.68</b>	<b>0.62</b>	<b>0.56</b>
<b>PV of FCF</b>	<b>2,432</b>	<b>5,033</b>	<b>13,848</b>	<b>17,162</b>	<b>19,610</b>	<b>16,304</b>	<b>15,611</b>

In the model, the valuation is continued till FY 2034.

## Arrowhead Fair Value Bracket

In USD '000	Low	High
Implied Enterprise Value	<b>144,406</b>	<b>146,961</b>
+ Cash <sup>xv</sup>	9,827	9,827
<b>Equity Value Bracket</b>	<b>154,233</b>	<b>156,788</b>
Shares Outstanding (in '000) <sup>xvi</sup>	10,603.2	10,603.2
<b>Fair Value Bracket (USD)</b>	<b>14.55</b>	<b>14.79</b>
Current Market Price (USD)	<b>5.17</b>	<b>5.17</b>
Current Market Capital (mn USD)	54.8	54.8
<b>Target Market Capital (mn USD)</b>	<b>154.23</b>	<b>156.79</b>

## **Analyst Certifications and Important Disclosures**

### **Analyst Certifications**

I, Sumit Wadhwa, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security and the subject company.

I, Natasha Agarwal, certify that all of the views expressed in this research report accurately reflect my personal views about the subject security and the subject company.

### **Important disclosures**

Arrowhead Business and Investment Decisions, LLC received fees in 2017 and 2018 and will receive fees in 2019 from Caledonia Mining for researching and drafting this report and for a series of other services to Caledonia Mining, including distribution of this report, investor relations and networking services. Neither Arrowhead BID nor any of its principals or employees own any long or short positions in Caledonia Mining.

Aside from certain reports published on a periodic basis, the large majority of reports are published by Arrowhead BID at irregular intervals as appropriate in the analyst's judgment. Any opinions expressed in this report are statements of our judgment to this date and are subject to change without notice.

This report was prepared for general circulation and does not provide investment recommendations specific to individual investors. As such, any of the financial or other money-management instruments linked to the company and company valuation described in this report, hereafter referred to as "the securities", may not be suitable for all investors.

Investors must make their own investment decisions based upon their specific investment

objectives and financial situation utilizing their own financial advisors as they deem necessary. Investors are advised to gather and consult multiple information sources before making investment decisions. Recipients of this report are strongly advised to read the information on Arrowhead Methodology section of this report to understand if and how the Arrowhead Due Diligence and Arrowhead Fair Value Bracket integrate alongside the rest of their stream of information and within their decision-making process.

Past performance of securities described directly or indirectly in this report should not be taken as an indication or guarantee of future results. The price, value of, and income from any of the financial securities described in this report may rise as well as fall and may be affected by simple and complex changes in economic, financial and political factors.

Should a security described in this report be denominated in a currency other than the investor's home currency, a change in exchange rates may adversely affect the price of, value of, or income derived from the security.

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Arrowhead Business and Investment Decisions, LLC is not responsible for any loss, financial or other, directly or indirectly linked to any price movement or absence of price movement of the securities described in this report.

## Notes and References

- i Arrowhead Business and Investment Decisions (ABID) Fair Value Bracket. See information on valuation on pages 26-29 of this report and important disclosures on page 30 of this report*
- ii Bloomberg as on 27-Dec-2018*
- iii Bloomberg as on 27-Dec-2018*
- iv 3 months average volume from Bloomberg as on 27-Dec-2018*
- v Bloomberg as on 27-Dec-2018*
- vi Arrowhead Business and Investment Decisions Fair Value Bracket – AFVBTM. See information on valuation on pages 26-29 of this report and important disclosures on page 30 of this report.*
- vii Source: Company website, Q3 2018 Results*
- viii <https://minerals.usgs.gov/minerals/pubs/commodity/gold/mcs-2017-gold.pdf>*
- ix <https://minerals.usgs.gov/minerals/pubs/commodity/gold/mcs-2017-gold.pdf>*
- x <http://www.infomine.com/investment/metal-prices/gold/5-year/>*
- xi <http://www.caledoniamining.com/index.php/operations/blanket-gold-mine?limitstart=0>*
- xii Bloomberg as on 27-Dec-2018*
- xiii Arrowhead Estimate*
- xiv Bloomberg as on 27-Dec-2018*
- xv Company's cash and cash equivalents as on September 30, 2018*
- xvi Bloomberg as on 27-Dec-2018*