



**MANAGEMENT'S DISCUSSION AND ANALYSIS**

**FOR THE THREE AND NINE MONTHS ENDED  
SEPTEMBER 30, 2019**

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## MANAGEMENT'S DISCUSSION AND ANALYSIS FOR THE THIRD QUARTER ENDED SEPTEMBER 30, 2019

*This Management's Discussion and Analysis ("MD&A") should be read in conjunction with the condensed interim consolidated financial statements for the three and nine months ended September 30, 2019, and the annual audited consolidated financial statements and MD&A for the year ended December 31, 2018 and related notes thereto which have been prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board (IASB). For further information on Jaguar Mining Inc., reference should be made to its public filings (including its most recently filed annual information form ("AIF") which is available on SEDAR at [www.sedar.com](http://www.sedar.com)). Information on risks associated with investing in the Company's securities and technical and scientific information under National Instrument 43-101 concerning the Company's material properties, including information about mineral resources and reserves, are contained in the Company's most recently filed AIF and technical reports.*

*All amounts included in this MD&A are in United States dollars ("\$"), unless otherwise specified. References to C\$ are to Canadian dollars and R\$ are to Brazilian Reals. This report is dated as at November 13, 2019.*

The Company has included certain non-GAAP financial measures, which the Company believes, that together with measures determined in accordance with IFRS, provide investors with an improved ability to evaluate the underlying performance of the Company. Non-GAAP financial measures do not have any standardized meaning prescribed under IFRS, and therefore they may not be comparable to similar measures employed by other companies. The data is intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. The non-GAAP financial measures included in this MD&A include:

- Cash costs (per ounce sold);
- All-in sustaining costs (per ounce sold);
- Average realized gold price (per ounce of gold sold);
- Adjusted operating cash flow;
- Adjusted EBITDA;
- Free cash flow (per ounce sold);
- Sustaining capital expenditures; and
- Non-sustaining capital expenditures.

Definitions and reconciliations associated with the above metrics can be found in Non-GAAP Performance Measures section of this MD&A.

*Where we say "we," "us," "our," the "Company" or "Jaguar," we mean Jaguar Mining Inc. or Jaguar Mining Inc. and/or one or more or all of its subsidiaries, as it may apply. The following abbreviations are used to describe the periods under review throughout this MD&A:*

Abbreviation	Period	Abbreviation	Period
<b>YTD 2019</b>	January 1, 2019 – September 30, 2019	<b>YTD 2018</b>	January 1, 2018 – September 30, 2018
<b>Q1 2019</b>	January 1, 2019 – March 31, 2019	<b>Q1 2018</b>	January 1, 2018 – March 31, 2018
<b>Q2 2019</b>	April 1, 2019 – June 30, 2019	<b>Q2 2018</b>	April 1, 2018 – June 30, 2018
<b>Q3 2019</b>	July 1, 2019 – September 30, 2019	<b>Q3 2018</b>	July 1, 2018 – September 30, 2018

## OUR BUSINESS

Jaguar Mining Inc. (“Jaguar” or the “Company”) is a Canadian-listed junior gold mining, development, and exploration company operating in Brazil with three gold mining complexes, and a large land package with significant upside exploration potential. The Company’s principal operating assets are located in the state of Minas Gerais and include the Turmalina Gold Mine Complex (“Turmalina Gold mine and plant”) and Caeté Gold Mine Complex (“Pilar Gold mine”, “Roça Grande Gold mine” and “Caeté plant”). The Company also owns the Paciência Gold Mine Complex (“Paciência”), which has been on care and maintenance since 2012. Jaguar’s Brazilian assets and operations are held by Jaguar’s wholly-owned subsidiary Mineração Serras dos Oeste EIRELI. (“MSOL”).

## Q3 2019 FINANCIAL & OPERATING SUMMARY

(\$ thousands, except where indicated)	For the three months ended		For the nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
<b>Financial Data</b>				
Revenue	\$ 22,999	\$ 25,426	\$ 68,338	\$ 73,541
Operating costs	13,906	12,809	43,152	40,564
Depreciation	3,425	4,919	10,533	14,211
Gross profit	5,668	7,698	14,653	18,766
Net income (loss)	1,141	2,208	(2,835)	(904)
Per share (“EPS”)	0.00	0.01	(0.01)	0.00
EBITDA <sup>1</sup>	5,528	7,889	10,761	16,309
Adjusted EBITDA <sup>1,2</sup>	5,646	8,909	15,551	19,805
Adjusted EBITDA per share <sup>1</sup>	0.01	0.03	0.02	0.06
Cash operating costs (per ounce sold) <sup>1</sup>	798	627	817	713
All-in sustaining costs (per ounce sold) <sup>1</sup>	1,389	1,142	1,393	1,233
Average realized gold price (per ounce) <sup>1</sup>	1,320	1,244	1,293	1,292
Cash generated from operating activities	4,676	6,566	14,704	16,004
Sustaining capital expenditures <sup>1</sup>	7,865	7,864	23,334	21,493
Non-sustaining capital expenditures <sup>1</sup>	772	641	1,205	2,241
Total capital expenditures	8,637	8,505	24,539	23,734
Free cash flow <sup>1</sup> - Operational Cash Flow less Sustaining Capital	(3,189)	(1,298)	(8,630)	(5,489)
Free cash flow (per ounce sold) <sup>1</sup>	(183)	(63)	(163)	(96)

<sup>1</sup> Average realized gold price, sustaining and non-sustaining capital expenditures, cash operating costs and all-in sustaining costs, adjusted operating cash flow, free cash flow, EBITDA and adjusted EBITDA, adjusted EBITDA per share, and gross profit (excluding depreciation) are non-IFRS financial performance measures with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A.

<sup>2</sup> Adjusted EBITDA excludes non-cash items such as impairment and write downs. For more details refer to the Non-IFRS Performance Measures section of the MD&A.

	For the three months ended		For the nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
<b>Operating Data</b>				
Gold produced (ounces)	19,324	20,320	54,055	58,004
Gold sold (ounces)	17,417	20,441	52,836	56,908
Primary development (metres)	1,516	1,436	3,987	3,782
Secondary development (metres)	1,011	727	2,341	1,751
Definition, infill, and exploration drilling (metres)	7,842	11,716	22,705	29,917

## Financial and Operational Summary

### *Private Placement, Repayment of Bridge Facility*

- On July 8, 2019, the Company closed a non-brokered private placement equity offering for aggregate net proceeds of \$24.6 million. In the three months ended September 30, 2019, the private placement proceeds supported the Company in reducing \$14.3 million in financing liabilities, whereas the Company (i) fully repaid its \$7.9 million bridge facility loan due to Auramet, (ii) repaid \$2.1 million in Brazil bank indebtedness, (iii) paid \$0.6 million in right-of-use lease liabilities, and (iv) delivered \$3.9 million in gold product in fulfillment of its customer advance agreement with Auramet. The remaining \$10.3 million funds are planned for (i) capital improvements and infrastructure, (ii) advancing mineral exploration activities in order to increase reserves, (iii) general corporate and working capital improvement purposes and to meet the Company's commitments.

### *Revenue, Gold Ounces Sold, Operating Costs and Adjusted EBITDA<sup>1</sup>*

- Revenue for Q3 2019 decreased 10% to \$23 million, compared with \$25.4 million in Q3 2018, due to a 15% decrease in gold sales, offset by a 6% increase in the average realized gold price of \$1,320 per ounce in Q3 2019 as compared to \$1,244 per ounce for Q3 2018. The average realized gold price of \$1,320 per ounces during the quarter was lower than the average market price of gold (London PM Fix) of \$1,472 per ounces, mainly due to the hedge program linked with the bridge and gold loans that were entered in 2018 and early part of 2019.
- Gold ounces sold in Q3 2019 were 17,417 ounces, compared with 20,441 ounces sold for the comparative periods.
- Operating costs increased 9% in Q3 2019, compared with \$12.8 million in Q3 2018, primarily due to an 18% decrease in average head grade (grams per tonne).
- Adjusted EBITDA for Q3 2019 was \$5.6 million compared to \$8.9 million for Q3 2018.

### *Cash Operating Costs, Capital Expenditures, All-In-Sustaining Costs ("AISC"), Operating Cash Flow<sup>1</sup>*

- Cash operating costs increased 27% to \$798 per ounce of gold sold for Q3 2019, compared to \$627 per ounce sold during Q3 2018, primarily due to an 18% decrease in average head grade (grams per tonne).
- In Q3 2019, the sustaining capital investment of \$7.9 million was in line compared with the same period of 2018.
- AISC were \$1,389 per ounce of gold sold in Q3 2019, compared to \$1,142 per ounce sold during Q3 2018, due primarily to the decrease in gold sales.
- Operating cash flow was \$4.7 million for Q3 2019, compared to \$6.6 million in Q3 2018, mainly as a result of the decrease in ounces sold.

### *Cash Position, Working Capital and Derivatives Position*

- As at September 30, 2019, the Company had a cash position of \$12.2 million, compared to \$6.3 million as at December 31, 2018. The September 30, 2019, cash balance excludes a \$2 million restricted cash deposit held with Auramet, and a \$0.4 million margin deposit associated with the Company's Brazil bank indebtedness.
- As at September 30, 2019, working capital was \$5.5 million, compared to negative \$2.4 million as at December 31, 2018, which includes \$4.3 million (December 31, 2018 - \$7.3 million) in loans from Brazilian banks, which mature every six months and are expected to be rolled forward.
- As at November 13, 2019, the Company's outstanding gold forward contracts covered 6,100 ounces hedged at a weighted average price of \$1,417 per ounce (December 31, 2018 - 8,801 ounces hedged at a weighted average price of \$1,260 per ounce). Also, the Company is counterparty to gold call options agreements issued to Auramet of 3,400 ounces at \$1,400 and 1,000 ounces at \$1,450 expiring in Q4 2019, and 5,000 ounces at \$1,350 expiring on January 31, 2020. These gold call forwards and options are linked to the Auramet gold loan and bridge loan drawn in 2018 and 2019, respectively.

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<sup>1</sup> This is a non-GAAP financial performance measures with no standard definition under IFRS.  
MD&A – Quarter Ended September 30, 2019

### **Tonnes Processed and Average Grade, Gold Production**

- Consolidated gold production decreased to 19,324 ounces in Q3 2019, compared to 20,320 ounces in Q3 2018. Gold recovery was 87.8% in Q3 2019 compared to 89.8% in Q3 2018.
- Total processing was 208,000 tonnes in Q3 2019 (Q3 2018 – 175,000 tonnes) at an average head grade of 3.30 g/t (Q3 2018 – 4.01 g/t).
  - In Q3 2019, Turmalina Gold mine (“Turmalina”) processed 94,000 tonnes (Q3 2018 – 88,000 tonnes) at an average head grade of 3.05 g/t (Q3 2018 – 3.62 g/t).
  - Pilar Gold mine (“Pilar”) processed 114,000 tonnes in Q3 2019 (Q3 2018 – 87,000 tonnes) at an average head grade of 3.50 g/t (Q3 2018 – 4.40 g/t).
- Pilar production was in line with the same period of 2018, producing 11,044 ounces in Q3 2019 compared to 11,068 ounces in Q3 2018. Turmalina produced 8,280 ounces in Q3 2019, compared to 9,252 ounces in Q3 2018.

## **REVIEW OF OPERATING AND FINANCIAL RESULTS**

### **Turmalina Gold Mine Complex**

#### Turmalina Quarterly Production

(\$ thousands, except where indicated)	<b>Q3 2019</b>	Q2 2019	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018	Q4 2017
Tonnes of ore processed ('000)	<b>94,000</b>	75,000	65,000	75,000	88,000	77,000	81,000	95,000
Average head grade (g/t) <sup>1</sup>	<b>3.05</b>	3.55	3.96	3.56	3.62	3.46	3.57	4.41
Average recovery rate (%)	<b>90%</b>	91%	90%	90%	90%	91%	91%	91%
Gold (oz.)								
Produced	<b>8,280</b>	7,823	7,525	7,743	9,252	7,824	8,442	12,245
Sold	<b>7,399</b>	7,999	8,006	8,206	8,609	7,610	8,414	12,142
Cash operating cost (per oz. sold) <sup>2</sup>	<b>\$ 827</b>	\$ 766	\$ 868	\$ 787	\$ 722	\$ 761	\$ 749	\$ 646
All-in sustaining cost (per oz. sold) <sup>2</sup>	<b>\$ 1,455</b>	\$ 1,465	\$ 1,347	\$ 1,298	\$ 1,181	\$ 1,316	\$ 1,238	\$ 784
Cash operating cost (R\$ per tonne) <sup>2</sup>	<b>\$ 258</b>	\$ 320	\$ 264	\$ 328	\$ 279	\$ 184	\$ 252	\$ 268

<sup>1</sup> The 'average head grade' represents the recalculated head-grade milled.

<sup>2</sup> Cash operating costs, average realized cost and All-in sustaining costs are a non-IFRS financial performance measure with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A.

During the third quarter of 2019, Turmalina produced 8,280 ounces of gold compared to 9,252 ounces in the corresponding 2018 period, a decrease of 11% or 972 ounces. The decrease in ounces produced was a result of a 16% decrease in the average head grade (grams per tonne) from 3.62 (g/t) in Q3 2018 to 3.05 (g/t) in Q3 2019. The cash operating cost per ounce sold for the third quarter of 2019 increased by 15%, or \$105 per ounce, as compared to the same period in 2018.

## Turmalina Capital Expenditures

(\$ thousands)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Sustaining capital <sup>1</sup>				
Primary development	\$ 3,967	\$ 3,451	\$ 10,856	\$ 10,523
Brownfield exploration	79	206	416	464
Mine-site sustaining	597	295	2,791	1,307
<b>Total sustaining capital<sup>1</sup></b>	<b>4,643</b>	<b>3,952</b>	<b>14,063</b>	<b>12,294</b>
<b>Total non-sustaining capital<sup>1</sup></b>	<b>413</b>	<b>592</b>	<b>588</b>	<b>1,496</b>
<b>Total capital expenditures</b>	<b>\$ 5,056</b>	<b>\$ 4,544</b>	<b>\$ 14,651</b>	<b>\$ 13,790</b>

<sup>1</sup> Sustaining and non-sustaining capital are non-IFRS financial measures with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A. Capital expenditures are included in our calculation of all-in sustaining costs and all-in costs.

(metres)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Primary development	1,001	780	2,357	2,167
Secondary development	436	558	1,087	951
<b>Total development</b>	<b>1,437</b>	<b>1,338</b>	<b>3,444</b>	<b>3,118</b>
Definition drilling	1,026	844	2,772	1,509
Infill drilling	1,539	3,791	7,805	8,160
Exploration drilling	1,526	3,568	2,767	9,701
<b>Total definition, infill, and exploration drilling</b>	<b>4,091</b>	<b>8,203</b>	<b>13,344</b>	<b>19,370</b>

### Mining

Located 1.5 hours west of Belo Horizonte, Turmalina is an underground mine that predominantly utilizes sub-level stoping as a mining method. Backfilling is completed using loose rockfill or paste depending upon the situation. Mining rates at Turmalina have been low for the first half of 2019 and the later part of 2018. Mine flexibility and realized head grade have been low due to the limited access to core mining areas. The situation evolved out of rock mechanic issues experienced in 2017. Current development and mining practice will provide access to the full orebody, providing a sustainable mining sequence, and providing for the maintenance of stable ground conditions. Moving to a 4 shift per day schedule (to deal with legally limited underground working hours of six) was accomplished earlier this year, providing the mine more flexibility to increase production and development.

Currently development is being completed by both Jaguar crews and the mining contractor – Toniolo Busnella (TBSA). Contractor development is targeted at deepening A-zone access, which should open a new mining panel at the end of 2019. Jaguar development is focused on accessing C-zone ore, which will open up a new panel higher in the mine in the third quarter of 2020. Development rates have accelerated since the beginning of the year to 1,437 metres (up from a low in Q4 2018 of 653; 894 metres in Q1 2019; and 1,113 metres in Q2). Turmalina demonstrated the needed capacity to move tonnes and complete development at levels that will allow the mine to bring on the sustainable mining panels that will provide adequate stoping options. The new panels will allow the mine to bring the grade back toward the global reserve grade.

Mining has been challenging all year as access to an adequate mining sequence of stoping blocks has not been available. Mining challenges induced significant dilution in Q3 and YTD on what was already a low grade queue of mineable blocks. Turmalina crews have adapted and with modification of drilling, blasting, cablebolting, and sill development are bringing all issues into line with normal mining practice. Paste fill is expected to provide a significant advantage in mining the core portion of the orebody in Panel 12 of A-zone. Modifications and additions to the paste fill system will allow improved stope

sequencing, and maintain good geotechnical conditions as these ore blocks are removed. Systematic stope sequencing with two new panels (A-zone Panel 12, and C-zone Panel 5) will provide for a solid compliance to plan and mine head grades closer to the historical realized grades. Identification that C-central had potential to extend to depth occurred at the end of the first quarter. The first stope initiated production in September, a good indication of the mine's ability to adjust and quickly go after new opportunities. Turmalina started 2019 with 1,408,000 tonnes of reserves at 5.05 grams per tonne. In-mine Diamond Drilling has been maintained during the year and is expected to replace any reserves mined in 2019.

### Processing

The processing plant at Turmalina is onsite and the C-zone portal is within 200 metres of the crusher grizzly. The plant begins with primary and secondary crushing which feeds a crushed ore bin. The ore bin can feed any of three ball mill circuits. Total milling capacity exceeds 3,000 tonnes per day. The plant currently operates only Mill #3 that can easily handle current and next year's expected mined tonnage rates. The ball mills provide ground ore to the carbon-in-pulp ("CIP") circuit. Recoveries have historically been at 90% plus or minus. The plant is making ongoing improvements to ensure operating confidence as well as minimizing costs at the best recovery possible. Tails are sent to a filtration system from which they can be provided to the paste plant for backfill, or they can go to the dry stack area. The plant is seen as an opportunistic asset for Jaguar, because with limited capital it can significantly up throughput. When mine ounce production is raised and maintained at sustainable rates, this will allow the Company to look for additional opportunities in the mine, on its current property and within a reasonable distance.

### Turmalina Free Cash Flow<sup>1</sup>

(\$ thousands, except where indicated)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
<b>Turmalina Complex</b>				
Revenue	\$ 9,773	\$ 10,709	\$ 30,271	\$ 31,835
Less cash operating costs	6,122	6,218	19,204	18,309
Less sustaining capital expenditures	4,643	3,952	14,063	12,294
<b>Free Cash Flow</b>	<b>\$ (992)</b>	<b>\$ 539</b>	<b>\$ (2,996)</b>	<b>\$ 1,232</b>

<sup>1</sup> This is a non-GAAP financial performance measure with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A.

The free cash flow for the three and nine months ended September 30, 2019, decreased compared to the same period in 2018, primarily as a result of the decrease in ounces sold and the increase in sustaining capital expenditures.

## Caeté Gold Mine Complex

### Caeté Complex Quarterly Production

The Caeté Mining Complex (“Caeté”) includes the Pilar mine and the Caeté Processing Plant. On March 22, 2018, the Roça Grande mine was placed on care and maintenance. Ore from Pilar is trucked a total distance of approximately 40 kilometres by road to the Caeté plant. The Caeté plant has a capacity of 2,200 tonnes per day and includes gravity, flotation and CIP processing.

(\$ thousands, except where indicated)	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018	Q4 2017
Tonnes of ore processed (t)	<b>114,000</b>	109,000	95,000	103,000	87,000	94,000	93,000	95,000
Average head grade (g/t) <sup>1</sup>	<b>3.50</b>	3.44	3.34	3.25	4.40	4.03	3.93	3.33
Average recovery rate (%)	<b>86%</b>	87%	86%	87%	90%	90%	89%	89%
Gold (oz.)								
Produced	<b>11,044</b>	10,543	8,840	9,301	11,068	10,995	10,423	9,067
Sold	<b>10,018</b>	10,599	8,815	9,416	11,832	9,620	10,823	8,699
Cash operating cost (per oz. sold) <sup>2</sup>	<b>\$ 777</b>	\$ 802	\$ 871	\$ 803	\$ 557	\$ 683	\$ 841	\$ 883
All-in sustaining cost (per oz. sold) <sup>2</sup>	<b>\$ 1,099</b>	\$ 1,065	\$ 1,240	\$ 1,050	\$ 888	\$ 967	\$ 1,076	\$ 1,252
Cash operating cost (R\$ per tonne) <sup>2</sup>	<b>\$ 271</b>	\$ 306	\$ 200	\$ 280	\$ 299	\$ 171	\$ 317	\$ 256

<sup>1</sup> The 'average head grade' represents the recalculated head-grade milled.

<sup>2</sup> Cash operating costs, average realized cost and All-in sustaining costs are a non-IFRS financial performance measure with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A.

### Caeté Complex Free Cash Flow<sup>1</sup>

(\$ thousands, except where indicated)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
<b>Caeté Complex</b>				
Revenue	\$ 13,224	\$ 14,719	\$ 38,067	\$ 41,708
Less cash operating costs	7,784	6,591	23,957	22,256
Less sustaining capital expenditures	3,222	3,912	9,271	9,199
<b>Free Cash Flow</b>	<b>\$ 2,218</b>	\$ 4,216	<b>\$ 4,839</b>	\$ 10,253

<sup>1</sup> This is a non-GAAP financial performance measure with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A.

### Pilar Quarterly Production

(\$ thousands, except where indicated)	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018	Q4 2017
Tonnes of ore processed (t)	<b>114,000</b>	109,000	95,000	103,000	87,000	94,000	81,000	81,000
Average head grade (g/t) <sup>1</sup>	<b>3.50</b>	3.44	3.34	3.25	4.40	4.03	4.13	3.53
Average recovery rate (%)	<b>86%</b>	87%	86%	87%	90%	90%	89%	89%
Gold (ozs)								
Produced	<b>11,044</b>	10,543	8,840	9,301	11,068	10,995	9,553	8,156
Sold	<b>10,018</b>	10,599	8,815	9,416	11,832	9,620	9,929	7,880
Cash operating cost (per oz sold) <sup>2</sup>	<b>\$ 777</b>	\$ 802	\$ 871	\$ 803	\$ 557	\$ 683	\$ 805	\$ 835
All-in sustaining cost (per oz sold) <sup>2</sup>	<b>\$ 1,099</b>	\$ 1,065	\$ 1,240	\$ 1,050	\$ 888	\$ 967	\$ 1,062	\$ 1,198
Cash operating cost (R\$ per tonne) <sup>2</sup>	<b>\$ 271</b>	\$ 306	\$ 200	\$ 280	\$ 299	\$ 171	\$ 320	\$ 264

<sup>1</sup> The 'average head grade' represents the recalculated head-grade milled.

<sup>2</sup> Cash operating costs, average realized cost and All-in sustaining costs are a non-IFRS financial performance measure with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A.

Pilar production in Q3 2019 was in line compared with the same period of 2018. During the third quarter of 2019, were produced 11,044 ounces of gold compared to 11,068 ounces in the third quarter of 2018. The increase in the tonnes processed from 87,000 in Q3 2018 to 114,000 in Q3 2019 was offset by a 20% decrease in the average head grade (grams per tonne) from 4.40 (g/t) in Q3 2018 to 3.50 (g/t) in Q3 2019. The cash operating cost per ounce sold for the third quarter of 2019 increased by 39%, or \$220 per ounce, as compared to the same period in 2018.

#### Pilar Capital Expenditures

(\$ thousands, except where indicated)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Sustaining capital <sup>1</sup>				
Primary development	\$ 1,947	\$ 2,609	\$ 6,470	\$ 7,077
Brownfield exploration	91	141	198	449
Mine-site sustaining	1,184	1,162	2,603	1,673
<b>Total sustaining capital<sup>1</sup></b>	<b>3,222</b>	<b>3,912</b>	<b>9,271</b>	<b>9,199</b>
<b>Total non-sustaining capital<sup>1</sup></b>	<b>271</b>	<b>49</b>	<b>426</b>	<b>214</b>
<b>Total capital expenditures</b>	<b>\$ 3,493</b>	<b>\$ 3,961</b>	<b>\$ 9,697</b>	<b>\$ 9,413</b>

<sup>1</sup> Sustaining and non-sustaining capital are non-IFRS financial performance measures with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A. Capital expenditures are included in our calculation of all-in sustaining costs and all-in costs.

(metres)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Primary development	515	656	1,630	1,615
Secondary development	575	169	1,254	800
<b>Total development</b>	<b>1,090</b>	<b>825</b>	<b>2,884</b>	<b>2,415</b>
Definition drilling	1,578	1,183	5,332	3,183
Infill drilling	1,144	2,210	2,512	6,464
Exploration drilling	1,029	120	1,517	203
<b>Total definition, infill, and exploration drilling</b>	<b>3,751</b>	<b>3,513</b>	<b>9,361</b>	<b>9,850</b>

#### *Mining*

Located 2 hours east of Belo Horizonte, Pilar is an underground mine that predominantly utilizes sub-level stoping as a mining method. Backfilling is completed using loose rockfill, which is utilized exclusively in this mine. Pilar has shown consistent performance for the last two years and is continually pushing performance up. The Pilar team has shown great initiative in working to continually raise the expectation of the mine. By the end of the year, Pilar is expected to be in a position of sustainable performance of 4,000+ ounces per month. Highly competent ground conditions remain good and have allowed for fairly large stoping blocks to be removed, leaving backfilling until after long production cycles.

The development rate of 1,090 metres in Q3 helped in building the accessed reserve base, providing flexibility to adapt to mining issues, and the ability to continue meeting and exceeding ounce production targets in a sustainable manner. The development rate stepped up by 20% from the rates of Q1 and Q2. Pilar utilizes a contractor, TBSA, in the lowest portion of the mine, extending the main ramp and developing new sub-levels. Jaguar crews develop metres in the areas of active mining.

Q3 saw Pilar's best quarter this year for tonnage with 114,000 tonnes milled (109,000 in Q2; and 95,000 in Q1). Head grades were slightly higher than Q2, to also be at 2019 YTD highs. Sequenced mining has started in Panel 11. The mine team has done a good job of gradually ramping up production and adapting to the depth added with each new panel. The mine began the year with reserves of 1,784,000 tonnes at 3.68 grams per tonne. In-mine Diamond Drilling has been maintained during the year and is expected to replace any reserves mined in 2019.

## Processing

Pilar ore is processed at Jaguar's Caeté processing plant, which is located approximately 40 kilometres from Pilar mine. The plant utilizes gravity recovery which recovers about 50% of the gold, followed by a flotation circuit and leaching of the flotation concentrate in a CIP circuit. Historic recoveries have commonly been in the high 80 to 90% range. The plant has capacity for approximately 2,200 tonnes per day, and significant opportunity is available for additional feed. The non-sulphide tails (flotation tails) are dry stacked, and leach tails are sent to the Moita Dam. Currently the plant is building a filtration plant for the leach tails, which will be dry stacked with completion of the filter system in Q2 of 2020.

### Pilar Free Cash Flow<sup>1</sup>

(\$ thousands, except where indicated)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
<b>Pilar</b>				
Revenue	\$ 13,224	\$ 14,719	\$ 38,067	\$ 40,553
Less cash operating costs	7,784	6,591	23,957	21,156
Less sustaining capital expenditures	3,222	3,912	9,271	9,199
<b>Free Cash Flow</b>	<b>\$ 2,218</b>	<b>\$ 4,216</b>	<b>\$ 4,839</b>	<b>\$ 10,198</b>

<sup>1</sup> This is a non-GAAP financial performance measure with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A.

The free cash flow for the three and nine months ended September 30, 2019, decreased compared to the same period in 2018, primarily as a result of the increase in the cash operating to \$814 per ounce of gold sold for YTD 2019, compared to \$674 per ounce sold during YTD 2018.

## CONSOLIDATED FINANCIAL RESULTS

### Quarterly Financial Review<sup>1</sup>

	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018	Q2 2018	Q1 2018	Q4 2017
Revenue	\$ 22,999	\$ 23,923	\$ 21,416	\$ 21,377	\$ 25,426	\$ 22,888	\$ 25,228	\$ 26,626
Cost of sales (excluding depreciation) <sup>2</sup>	(13,906)	(14,627)	(14,630)	(14,014)	(12,809)	(12,356)	(15,399)	(15,526)
Gross profit (excluding depreciation) <sup>2</sup>	9,093	9,296	6,786	7,363	12,617	10,532	9,829	11,100
Net income (loss)	1,141	(2,137)	(1,839)	(15,065)	2,208	(1,334)	(1,781)	16,034
Cash flows from operating activities	4,676	7,505	2,523	5,180	6,566	4,079	4,979	5,387
Total assets	194,638	184,111	183,352	178,667	178,560	177,262	178,779	183,679
Total liabilities	68,613	83,887	81,205	74,811	60,145	61,471	61,783	65,293
Working Capital	5,504	(13,091)	(8,328)	(2,411)	1,590	4,025	10,978	14,132
Total Debt	5,383	13,969	14,885	9,743	8,070	9,049	14,908	17,525
Average realized gold price (per oz.) <sup>2</sup>	\$ 1,320	\$ 1,286	\$ 1,273	\$ 1,213	\$ 1,244	\$ 1,328	\$ 1,311	\$ 1,278
Cash operating cost (per oz. sold) <sup>2</sup>	\$ 798	\$ 786	\$ 870	\$ 795	\$ 627	\$ 717	\$ 800	\$ 745

<sup>1</sup> Sum of all the quarters may not add up to the annual total due to rounding.

<sup>2</sup> Average realized gold price, cost of sales (excluding depreciation), gross profit (excluding depreciation) and cash operating costs are all non-IFRS financial performance measures with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A.

The relative strength in the global gold market positively impacted the Company's revenue in Q3 2019. Current assets increased \$1.5 million as at September 30, 2019, compared to December 31, 2018, primarily as a result of the increase in cash and cash equivalents, due to the non-brokered private placement offering and issued a combined total of 394,117,647 common shares at a price of C\$0.085 per share in exchange for aggregate net proceeds of \$24.6 million. Current liabilities decreased \$6.4 million as at September 30, 2019, compared to December 31, 2018, due to the payment of the senior secured loan facility ("Auramet loan facility") agreement with lender Auramet International LLC. Non-current liabilities increase was in line compared with the same period of 2018.

### Revenue

(\$ thousands, except where indicated)	Three months ended			Nine months ended		
	September 30,			September 30,		
	2019	2018	Change	2019	2018	Change
Revenue	\$ 22,999	\$ 25,426	(10%)	\$ 68,338	\$ 73,541	(7%)
Ounces sold	17,418	20,441	(15%)	52,837	56,908	(7%)
Average realized gold price <sup>1</sup>	\$ 1,320	\$ 1,244	6%	\$ 1,293	\$ 1,292	0%

<sup>1</sup> Average realized gold price is a non-IFRS financial performance measure with no standard definition under IFRS. For further information, refer to the Non-IFRS Financial Performance Measures section of the MD&A.

Revenue for the third quarter of 2019 decreased 10%, compared to the same period in 2018, primarily as a result of a 15% decrease on gold sales in the three months ended on September 30, 2019, compared to the same period of 2018. The decrease on gold sold was offset by a 6% increase in the average realized gold price. The market price of gold is a primary driver of the Company's profitability and its ability to generate free cash flow. During the three months ended September 30, 2019, the market price of gold (London PM Fix) traded in a range of \$1,398–\$1,546, averaged \$1,472 per ounce, and closed at \$1,485 per ounce on September 30, 2019. The average market price during the third quarter of 2019 was higher compared to the average market price of \$1,213 per ounce for the third quarter of 2018. The average realized price of \$1,320 for the three months ended on September 30, 2019, was lower than the average market price of \$1,472 (London PM Fix), due to the amortization of Company's outstanding gold forward contracts.

Financial performance upside in Q3 2019 was limited by the gold loan repayments and settling of forwards/options that held the Company's realized price of gold to \$1,320 per ounce. These forward/option contracts were entered during a stressful period of operations in 2018 and earlier this year, primarily due to the bridge loan covenant requirements. Jaguar has an

obligation to deliver into the committed forward/option contracts and repayments of the gold loan that will impact the company in Q4 2019 and Q1 2020. Using a mix of spot prices, forwards/options and the residual gold loan repayments, the realized gold price sold will be more aligned to the spot gold price during the current quarter. Jaguar will be unhedged by end of Q1 2020.

## Production

A total of 208,000 tonnes were processed in Q3 2019 (Q3 2018 – 175,000 tonnes) at an average head grade of 3.30 g/t (Q3 2018 – 4.01 g/t), an 18% decrease in average head grade compared to the same period in 2018.

### Consolidated Production Costs

(\$ thousands, except where indicated)	Three months ended			Nine months ended		
	September 30,			September 30,		
	2019	2018	Change	2019	2018	Change
Direct mining and processing cost	\$ 13,192	\$ 12,123	9%	\$ 40,644	\$ 38,088	7%
Mining	8,544	7,740	10%	26,360	24,546	7%
Processing	4,648	4,383	6%	14,284	13,542	5%
Royalties, production taxes and others	714	686	4%	2,508	2,476	1%
Royalty expense and CFEM taxes	759	774	(2%)	2,450	2,412	2%
NRV adjustment and others	(45)	(88)	(49%)	58	64	(9%)
<b>Total operating expenses</b>	<b>\$ 13,906</b>	<b>\$ 12,809</b>	<b>9%</b>	<b>\$ 43,152</b>	<b>\$ 40,564</b>	<b>6%</b>
Depreciation	3,425	4,919	(30%)	10,533	14,211	(26%)
<b>Total cost of sales</b>	<b>\$ 17,331</b>	<b>\$ 17,728</b>	<b>(2%)</b>	<b>\$ 53,685</b>	<b>\$ 54,775</b>	<b>(2%)</b>

<sup>1</sup> Cash operating costs is a non-IFRS financial performance measure with no standard definition under IFRS. Refer to the Non-IFRS Financial Performance Measures section of the MD&A.

Total operating expenses increased 9% from \$12.8 million in the three months ended September 30, 2018, to \$13.9 million in 2019, primarily as a result of the decrease in average head grade from 4.01 (g/t) in Q3 2018, to 3.30 (g/t) in Q3 2019. The cash operating cost (per ounces sold) increased 27% from \$627 in Q3 2018, compared to \$798 in the same period of 2019.

## Operating Expenses

(\$ thousands)	Three months ended			Nine months ended		
	September 30,			September 30,		
	2019	2018	Change	2019	2018	Change
Changes in other provisions and VAT taxes	\$ 563	\$ 509	11%	\$ 2,546	\$ 1,990	28%
General and administrative expenses	2,348	2,258	4%	6,688	7,125	(6%)
Exploration and evaluation costs	44	125	(65%)	135	591	(77%)
Care & maintenance costs (Paciência and Roça Grande mines)	431	417	3%	958	1,824	(47%)
Stock-based compensation	70	417	(83%)	414	932	(56%)
Amortization	31	32	(3%)	99	117	(15%)
Other operating expenses	496	840	(41%)	1,716	3,388	(49%)
<b>Total operating expenses</b>	<b>\$ 3,983</b>	<b>\$ 4,598</b>	<b>(13%)</b>	<b>\$ 12,556</b>	<b>\$ 15,967</b>	<b>(21%)</b>

## Care and Maintenance Costs

### Paciência Gold Mine Complex

The Paciência Gold Mine Complex remained on care and maintenance during the third quarter of 2019. No gold has been produced here since the third quarter of 2012. No underground development or drilling work was carried out by the Company at Paciência during Q3 2019. The complex has been secured and the facilities are preserved and patrolled. A limited maintenance staff turns on the mills and equipment on a monthly basis to maintain the plant in working order. Paciência's carrying amount was written down to nil.

### Roça Grande Gold Mine

Due to high operating costs, the Roça Grande Gold Mine was placed on care and maintenance on March 22, 2018. No underground development or drilling work was carried out by the Company at Roça Grande during Q3 2019. Roça Grande's carrying amount was written down to nil.

## General and Administration Expenses

The general and administration ("G&A") expenses excludes mine-site administrative costs that are charged directly to operations and include legal, accounting, costs to maintain offices and personnel in Belo Horizonte, Brazil and Toronto, Canada, and other corporate costs associated with being a publicly traded company.

(\$ thousands)	Three months ended			Nine months ended		
	September 30,			September 30,		
	2019	2018	Change	2019	2018	Change
Directors' fees	\$ 342	\$ 105	226%	\$ 453	\$ 277	64%
Audit related and insurance	237	285	(17%)	795	775	3%
Corporate office (Toronto)	354	420	(16%)	1,257	1,631	(23%)
Belo Horizonte office	1,415	1,448	(2%)	4,183	4,442	(6%)
<b>Total G&amp;A expenses</b>	<b>\$ 2,348</b>	<b>\$ 2,258</b>	<b>4%</b>	<b>\$ 6,688</b>	<b>\$ 7,125</b>	<b>(6%)</b>

For the three months ended September 30, 2019, the total G&A expenses increased 4% compared to the same period in 2018. Costs associated with the Belo Horizonte office were 2% lower in the three months ended in September 30, 2019. Costs for the corporate office in Toronto were 16% lower for the three months of 2019 compared to the same period of 2018, due to cost cutting measures.

## Changes in Other Provisions and VAT Taxes

(\$ thousands)	Three months ended			Nine months ended		
	September 30,			September 30,		
	2019	2018	Change	2019	2018	Change
Changes to legal provisions	\$ 360	\$ 2,416	(85%)	\$ 3,269	\$ 4,021	(19%)
Changes to recoverable taxes provision	203	(1,907)	(111%)	(723)	(2,031)	(64%)
<b>Changes to legal provisions and recoverable VAT</b>	<b>\$ 563</b>	<b>\$ 509</b>	<b>11%</b>	<b>\$ 2,546</b>	<b>\$ 1,990</b>	<b>28%</b>

### Legal Provisions

As at September 30, 2019, there were 346 employee-initiated active lawsuits (September 30, 2018 – 388) against the Company, largely related to disputed overtime, break/interval and time at disposal. Based on Management's assessment of the likelihood of loss related to 265 lawsuits (September 30, 2018 – 292), the Company has recorded approximately \$7.8 million as labour legal provisions, with \$2.7 million classified as a current liability as at September 30, 2019 (September 30, 2018 – \$8.2 million and \$4.1 million, respectively).

During Q3 2019, 17 new lawsuits were initiated. The Company paid approximately \$179,000 in appeal deposits and escrow payments, \$615,000 in settlement installments, and \$112,000 for other costs such as social security, income tax, legal fees and expert fees. The total amount spent in Q3 2019 was \$906,000 compared to \$1.2 million in Q3 2018.

### **Recoverable Taxes Provision**

As at September 30, 2019, gross recoverable taxes that are primarily denominated in Brazilian Reais amounted to \$17.9 million (December 31, 2018 – \$23.2 million). As at September 30, 2019, the provision for recoverable taxes was approximately \$3.1 million (December 31, 2018 – \$4.1 million). Consequently, the net book value of recoverable taxes as at September 30, 2019, was \$15 million (December 31, 2018 – \$19.1 million).

Certain taxes paid in Brazil on consumables and property, plant and equipment generate tax credits through various mechanisms. The Company is currently working on several initiatives to ensure optimum utilization of those tax credits, which include assessment of the tax credits for offset against taxes otherwise payable and restitution in cash.

The Company has recorded a provision against its recoverable taxes in Brazil given the limited methods available to recover such taxes and the length of time it will take to recover such taxes. The provision reduces the net carrying amount of value added taxes and other taxes to their estimated recoverable value.

The Company continues to pursue approval of Federal VAT input tax credits with respect to the years 2008 through 2011 for its MSOL operating subsidiary. MSOL is the operating subsidiary for the Turmalina complex, comprising the Turmalina mine, and the Caeté complex comprising the Pilar and Roça Grande mines. The Company received a cash refund in the amount of R\$3.5 million (approximately \$1 million) in March 2016 related to MSOL. In July 2016, the Company initiated a lawsuit to obtain a court order to force the tax authority to review the Company's remaining tax credits for MSOL with respect to the years 2008 to 2011, amounting to R\$36 million (approximately \$11 million). A court order was granted and by November 2016, the Tax Authority reviewed the claim and granted a favourable decision to partially recognize the amount claimed, deeming R\$1.5 million (approximately \$0.5 million) due to the Company. The Company collected this amount and proceeded to appeal the Tax Authority's review result in pursuit of further tax credit refund recognition on the remainder of this claim. At September 30, 2019, the Company is awaiting the Tax Authority's review result of its appeal to receive the remainder

ICMS is a type of value added tax that can either be sold to other companies (usually at a discount rate of 15% – 30%) or be used to purchase specified machinery and equipment, as subject to approval by government authority. The ICMS credits can only be realized in the state where they were generated; in the case of Jaguar, this is in the state of Minas Gerais, Brazil. In the three and nine months ended September 30, 2019, the Company sold R\$nil and R\$13.7 million (approximately \$nil and \$3.6 million, respectively), in ICMS export tax credits, and the Company received approvals from the state tax authority for R\$nil and R\$10.2 million, respectively (approximately \$nil and \$2.6 million) in additional ICMS export tax credits authorized for sale. As at September 30, 2019, the Company held R\$1.3 million (approximately \$0.3 million) in ICMS export tax credits authorized for sale but not yet sold (December 31, 2018 – R\$5 million, approximately \$1.3 million).

### **Impairment**

The Turmalina, Caeté, and Paciência projects are each cash generating units ("CGU") which include property, plant and equipment, mineral rights, deferred exploration costs, and asset retirement obligations net of amortization. The CGUs also include mineral exploration project assets relating to properties not in production, such as mineral rights and deferred exploration costs. A CGU is generally an individual operating mine or development project.

For the three months ended September 30, 2019, there were no indicators of impairment or reversal of past impairment charges.

## Non-Operating Expenses (Recoveries)

(\$ thousands)	Three months ended September 30,			Nine months ended September 30,		
	2019	2018	Change	2019	2018	Change
Foreign Exchange (Gain)	\$ (1,575)	\$ (318)	395%	\$ (1,272)	\$ (1,604)	(21%)
Financial instruments loss	1,060	412	157%	3,102	2,178	42%
Finance costs	749	718	4%	2,714	2,850	(5%)
Other non-operating expenses	128	68	88%	138	244	(43%)
<b>Non-operating expenses</b>	<b>\$ 362</b>	<b>\$ 880</b>	<b>(59%)</b>	<b>\$ 4,682</b>	<b>\$ 3,668</b>	<b>28%</b>

During the three months ended September 30, 2019, finance costs mainly represent interest on debt and accretion expense.

### Auramet advance

On May 9, 2018, the Company entered into an agreement with Auramet International LLC (“Auramet”) for an unsecured customer advance (“Auramet advance”) in the form of a gold purchase and sale agreement whereby Auramet extended up to \$7 million in minimum prepayment amounts each of \$1 million to Jaguar. As part of the agreement, the Company is required to maintain a \$2 million margin deposit with Auramet. Funds advanced under the Auramet advance are subject to interest at one-month LIBOR + 7.5% and hold a covenant to maintain a minimum net cash balance of \$5 million, including the margin deposit.

In the nine months ended September 30, 2019, the Company delivered 3,250 ounces of gold product to Auramet, and, as at September 30, 2019, 2,600 ounces were remaining due to be delivered.

On September 26, 2019, the Company and Auramet agreed to extend the maturity date from October 31, 2019 to January 31, 2020, whereas the Company is obliged to deliver the remaining 2,600 ounces of gold product in accordance with a weekly delivery schedule. The Company incurred \$15,000 in finance costs due and paid to Auramet for the extension.

On May 9, 2018, the Company also agreed to a European style gold call option agreement with Auramet whereby the Company granted Auramet an option to purchase up to 7,000 ounces of gold (1,000 ounces per month) at a strike price of US\$1,450 per ounce on expiration dates maturing monthly between May 2019 and November 2019.

In the nine months ended September 30, 2019, 2,000 ounces in call options were cancelled upon expiration, 3,000 ounces in call options were exercised by Auramet, and 2,000 ounces in call options remained outstanding with expiration dates maturing monthly between October 2019 and November 2019, as further detailed in Note 18(b).

During the nine months ended September 30, 2019, the Company remained in compliance with the minimum net cash balance covenant requirement on the Auramet advance.

### Auramet loan facility

On March 15, 2019, the Company entered into a senior secured loan facility (“Auramet loan facility”) agreement with lender Auramet International LLC totaling \$7.9 million to fund working capital. The Auramet loan facility was provided by security agreements comprising the Company’s and MSOL’s present and future assets, the shares of MSOL, and a loan guarantee by MSOL. As per the agreement, interest was prepaid and non-reimbursable in the amount of \$350,000, and principal due at maturity on July 15, 2019. The Auramet loan facility includes a covenant which requires the Company to maintain a minimum net cash balance of \$3 million.

To obtain the Auramet loan facility, the Company incurred transaction costs, including \$79,000 in upfront fees due to Auramet and \$82,000 in legal and technical due diligence costs, and awarded Auramet a set of European style gold call options whereby Auramet holds an option to purchase up to 5,000 ounces of gold at a strike price of US\$1,350 per ounce, expiring January 2020.

On July 8, 2019, the Company closed a non-brokered private placement offering and issued a combined total of 394,117,647 common shares at a price of C\$0.085 per share in exchange for aggregate gross proceeds of \$25 million. On July 15, 2019, the Company fully repaid the Auramet loan facility's \$7.9 million remaining balance due.

## **Taxes**

### Brazilian Taxes

Brazilian tax regulation involves three jurisdictions and tax collection levels: Federal, State and Municipal. The main taxes levied are: corporate income tax with companies generally subject to income tax at a rate of 25%, social contribution tax on the net profit at a current rate of 9%, and VAT taxes at a rate of 9.25% for PIS/CONFINS and 12–18% for ICMS.

PIS and COFINS are Federal taxes imposed monthly on gross revenue earned by legal entities. The calculation method is, in the Company's case, non-cumulative, under which PIS and COFINS are levied on gross revenue at 1.65% and 7.6%, respectively, with deductions of input tax credits for expenses strictly connected to the company's business and prescribed by the regulating laws. The export of goods and services are exempt provided funds effectively enter the country. PIS and COFINS are due on importations of goods and services from abroad (i.e. PIS-Import and CO-FINS-Import).

In June 2018, the Company entered into an Administrative Agreement with the Minas Gerais State Tax Authority in order to pay a historical debt (2008 – 2014) of R\$8.3 million (approximately \$2.2 million) in ICMS taxes. The agreement was ratified by the parties in July 2018. This debt has its origin in ICMS levied on electricity ("Demanda Contratada") in which the Superior Courts have been ruled in the taxpayer's favour. The Company had filed an appeal against the levy of the ICMS and the likelihood of the Company losing the appeal was assessed as remote. Although the Company would likely win the judicial lawsuit, the Company took the decision to pay the mentioned debt in instalments, using its tax credits (non-cash), in order to facilitate and accelerate its ICMS tax credits recovery as cash.

In September 2018, the Company received a social security tax assessment from Brazil's Federal Tax Authority (INSS – Instituto Nacional do Seguro Social) with respect to fiscal years 2014 and 2015, challenging the social security tax rate basis applied by the Company, which as per Brazilian tax legislation is variable based on the Company's historical work accident rate. The tax assessment claimed entitlement to a total additional R\$1.9 million (approximately \$0.5 million) due from the Company. Upon review, the Company and its legal counsel assessed its probability of loss as more likely than not and entered a settlement agreement with the Federal Tax Authority to reduce its exposure to fines and interest and extend its cash flow impact, agreeing to pay a total of R\$1.5 million (approximately \$0.4 million), in cash, over 60 equal monthly installments starting in October 2018.

### Government Royalty

In July 2018, an executive decree was published increasing the Brazilian royalty that is levied on gold sales, *Compensação Financeira pela Exploração de Recursos Minerais* ("CFEM"), from 1% to 1.5% effective November 1, 2018. The legislation also outlines a change in the methodology for calculating the royalty from being calculated on gross revenue, less refining charges and insurance, as well as any applicable sales taxes, to being calculated on gross revenue only.

## REVIEW OF FINANCIAL CONDITION

### Outstanding Debt, Liquidity and Cash Flow

Total debt outstanding as at September 30, 2019, was \$8.5 million (of which \$3.1 million was “Auramet advance”), compared to \$15.3 million as at December 31, 2018 (of which \$7 million was “Auramet advance”).

As at September 30, 2019, the Company had a working capital of \$5.5 million as at September 30, 2019 (negative \$2.4 million as at December 31, 2018). Working capital as at September 30, 2019, includes \$4.3 million in loans from Brazilian banks (\$7.3 million as at December 31, 2018), which mature every six months and are expected to continue to be rolled forward.

	<b>September 30, 2019</b>	December 31, 2018
Cash and cash equivalents	\$ 12,169	\$ 6,275
Non-cash working capital		
Other current assets:		
Restricted cash	3,959	5,262
Inventory	13,127	12,136
Recoverable taxes	7,505	10,421
Other accounts receivable	333	566
Prepaid expenses and advances	1,316	1,920
Derivatives	-	331
Current liabilities:		
Accounts payable and accrued liabilities	(15,124)	(17,506)
Notes payable	(5,383)	(8,119)
Right-of-use lease liabilities	(1,406)	(1,381)
Customer advances	(3,133)	(7,000)
Current tax liability	(182)	-
Other taxes payable	(477)	(503)
Reclamation provisions	(277)	(335)
Legal and other provisions	(3,888)	(3,871)
Derivative liabilities	(3,035)	(607)
<b>Working capital<sup>1</sup></b>	<b>\$ 5,504</b>	<b>\$ (2,411)</b>

<sup>1</sup> This is a non-GAAP financial performance measure with no standard definition under IFRS.

The use of funds during the three months ended September 30, 2019, is outlined below:

(\$ thousands)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
<b>Cash generated from operating activities</b>	\$ 4,676	\$ 6,566	\$ 14,704	\$ 16,004
<b>Investing activities</b>				
Capital expenditures on equipment and brownfield exploration				
Mineral exploration projects	\$ -	\$ (38)	\$ -	\$ (196)
Purchase of property, plant and equipment	(8,096)	(7,931)	(23,022)	(22,501)
Proceeds from disposition of property, plant and equipment	-	36	57	168
<b>Cash used in investing activities</b>	\$ (8,096)	\$ (7,933)	\$ (22,965)	\$ (22,529)
<b>Financing activities</b>				
Cash received upon issuance of shares via private placement	\$ 24,571		\$ 24,571	-
Cash received upon issuance of debt	\$ 1,235	\$ -	\$ 8,575	\$ 2,475
Cash received upon issuance of shares via stock options exercised	20	-	20	-
Cash received upon receipt of customer advances	-	-	-	7,000
Repayment of debt	(14,349)	(1,278)	(17,740)	(13,182)
Interest paid	(431)	(64)	(1,019)	(539)
Restricted cash margin deposits paid	(376)	-	(376)	(2,000)
<b>Cash provided by (used in) financing activities</b>	\$ 10,670	\$ (1,342)	\$ 14,031	\$ (6,246)
Effect of exchange rate changes on cash balances	(278)	137	124	815
<b>Net increase (decrease) in cash and equivalents</b>	\$ 6,972	\$ (2,572)	\$ 5,894	\$ (11,956)

The \$1.9 million decreased in operating cash flows for Q3 2019 compared to Q3 2018 is primarily due to a 15% decrease in ounces sold, from 20,441 ounces in Q3 2018 to 17,417 ounces in Q3 2019. For the three and nine months ended September 30, 2019, the cash received upon issuance of share via private placement refers to the non-brokered private placement offering and issued a combined total of 394,117,647 common shares at a price of C\$0.085 per share in exchange for aggregate net proceeds of \$24.6 million. Also during Q3 2019, the Company fully repaid the Auramet loan facility's \$7.9 million remaining balance due.

## Contractual Obligations and Commitments

The Company's contractual obligations as at September 30, 2019, are summarized as follows:

(\$ thousands, except where indicated)	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years	Total
<b>Financial Liabilities</b>					
Accounts payable and accrued liabilities <sup>1</sup>	\$ 15,124	\$ -	\$ -	\$ -	\$ 15,124
Other Taxes Payable					
ICMS Settlement Due	506	838	279	-	1,623
INSS	80	164	82	-	326
Notes payable					
Principal					
Bank indebtedness <sup>2</sup>	4,276	-	-	-	4,276
Vale note	1,125	-	-	-	1,125
Interest	95	16	-	-	111
Right-of-use lease liabilities	1,511	708	165	-	2,384
Reclamation provision <sup>3</sup>	277	5,845	7,656	7,884	21,662
Derivative liabilities	3,035	-	-	-	3,035
Other liabilities	-	3,741	-	-	3,741
<b>Total financial liabilities</b>	<b>\$ 26,029</b>	<b>\$ 11,312</b>	<b>\$ 8,182</b>	<b>\$ 7,884</b>	<b>\$ 53,407</b>
<b>Other Commitments</b>					
Customer advances					
Principal					
Auramet Advance <sup>4</sup>	\$ 1,111	\$ -	\$ -	\$ -	\$ 1,111
Interest	53	-	-	-	53
Suppliers' agreements <sup>5,6</sup>	155	-	-	-	155
<b>Total other commitments</b>	<b>\$ 1,319</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ 1,319</b>
<b>Total</b>	<b>\$ 27,348</b>	<b>\$ 11,312</b>	<b>\$ 8,182</b>	<b>\$ 7,884</b>	<b>\$ 54,726</b>

<sup>1</sup> Amounts payable as at September 30, 2019.

<sup>2</sup> Bank indebtedness represents the principal on Brazilian bank loans that are renewed every six months.

<sup>3</sup> Reclamation provisions - amounts presented in the table represent the undiscounted uninflated future payments for the expected cost of reclamation.

<sup>4</sup> Auramet advance includes the remaining balance due, net of the Company's \$2.0 million cash margin deposit presented as Restricted cash in the balance sheet.

<sup>5</sup> Purchase obligations for supplies and consumables - includes commitments related to new purchase obligations to secure a supply of cyanide, reagents, mill balls and other spares. The Company has the contractual

<sup>6</sup> Purchase obligations for supplies and consumables - includes commitments related to new purchase obligations to secure a supply of cyanide, reagents, mill balls and other spares.

## CAPITAL STRUCTURE

The capital structure of the Company as at September 30, 2019, is outlined below:

All amounts in \$ thousands, except number of common shares	As at September 30, 2019	
Bank indebtedness	\$	4,276
Leasing		2,132
Vale note		1,107
Customer advances		3,133
<b>Total debt</b>	<b>\$</b>	<b>10,648</b>
Less: cash and cash equivalents		(12,169)
<b>Total net debt<sup>1</sup></b>	<b>\$</b>	<b>(1,521)</b>
Number of common shares outstanding		723.9 million

<sup>1</sup> Net debt is a Non-IFRS Performance Measure and is defined as total indebtedness excluding unamortized transaction costs and premiums or discounts associated with debt, less cash and cash equivalents. Net debt provides a measure of indebtedness in excess of the current cash available. The Company reduces gross indebtedness by cash and cash equivalents on the basis that they could be used to pay down debt.

On July 8, 2019, the Company closed its non-brokered private placement offering and issued a combined total of 394,117,647 common shares at a price of C\$0.085 per share in exchange for aggregate gross proceeds of \$25.0 million. Prior to the Closing, Jaguar had 328,505,674 issued and outstanding Common Shares. Pursuant to the first and final tranches of the Offering, Jaguar issued an aggregate of 394,117,647 additional Common Shares, representing 119.97% of its issued and outstanding Common Shares prior to Closing.

## OFF-BALANCE SHEET ITEMS

The Company does not have any off-balance sheet investment or debt arrangements.

## RELATED PARTY TRANSACTIONS

The Company incurred legal fees from Azevedo Sette Advogados (“ASA”), a law firm where Luis Miraglia, a director of Jaguar, is a partner. Fees paid to ASA are recorded at the exchange amount, representing the amount agreed to by the parties and included in general and administrative expenses in the condensed interim consolidated statements of operations and comprehensive loss. Legal fees paid to ASA for the three and nine months ended September 30, 2019, were \$nil and \$19,000, respectively (\$nil and \$42,000, respectively, for the three and nine months ended September 30, 2018).

During the three and nine months ended September 30, 2019, the Company also engaged advisory services from John Ellis, a director of Jaguar. Fees paid to Mr. Ellis are recorded in general and administrative expenses in the condensed interim consolidated statements of operations and comprehensive loss and were \$20,000 and \$60,000 for the three and nine months ended September 30, 2019 (\$nil and \$nil, respectively, during the three and nine months ended September 30, 2018).

In July 2019, the Company closed its non-brokered private placement offering and issued a combined total of 394,117,647 Common Shares in exchange for aggregate gross proceeds of \$25 million. Two related parties, Mr. Eric Sprott and Tocqueville Asset Management LP, participated in the offering. Mr. Sprott’s participation increased his position of the common shares outstanding on a non-diluted basis held directly and indirectly from 21.7% to 42.6%, and Tocqueville Asset Management LP’s participation maintained its position held indirectly at 19.6%. These related party positions were maintained up through September 30, 2019.

## DEVELOPMENT AND EXPLORATION PROJECTS

### Development Project – Gurupi

#### Avanco – Gurupi Project Earn-In Agreement

On October 4, 2016, the Company announced that it entered into an earn-in agreement with Avanco Resources Limited (“Avanco”), pursuant to which Avanco may earn up to a 100% interest in the Gurupi Project. On September 17, 2018, Jaguar and Avanco agreed to a revised, accelerated earn-in agreement with Avanco, pursuant to which Avanco will earn up to a 100% ownership interest in the Gurupi Project after meeting some short-term milestones and making a series of payments to Jaguar.

#### Main Terms of the Revised Accelerated Earn-in Agreement

Upon the satisfactory completion of certain closing conditions, the agreement provides Avanco with the right to acquire 100% of Jaguar’s interest in the Gurupi Project by paying to Jaguar an aggregate cash payment of \$4 million in two installments of \$2 million each (\$2 million, due immediately upon signature and \$2 million due immediately upon transfer of ownership) and committing to a net smelter royalty due to Jaguar. Jaguar received an initial aggregate cash payment of \$4 million, in two installments of \$2 million each in September and October 2018. The Company expects to collect the additional \$5 million from Avanco in a series of 10 instalments of \$500,000 during fiscal year 2019, starting in the month in which Avanco receives “clear title and access” to the project.

Within 24 months of the initial \$4 million payment, Avanco will arrange to have published an Australian Joint Ore Reserve Committee (JORC) code compliant technical report regarding the Project with mineral reserves in excess of 500,000 ounces of gold. Any delay in this milestone will result in a project delay fee payable to Jaguar of \$250,000 per nine months of delayed period. Within 60 months of the initial \$4 million payment, Avanco will aim to commission the Gurupi mine and plant. Any delay in this commissioning milestone will result in a separate project delay fee payable to Jaguar of \$250,000 per nine months of delayed period.

Consistent with the original earn-in agreement, Jaguar will retain a life of mine Net Smelter Return (“NSR”) royalty (“Royalty”) from production at Gurupi. The royalty will be 1% NSR on the first 500,000 ounces of gold or gold ounce equivalents sold; 2% NSR on sales from 500,001 to 1,500,000 ounces of gold or gold ounce equivalents; and 1% NSR on gold sales exceeding 1,500,000 ounces of gold or gold ounce equivalents.

### Greenfield Exploration

Jaguar currently holds approximately 64,000 hectares of mineral rights in Brazil. New mining legislation in Brazil has been tabled and the outcome of any mining law reform is, as of yet, unknown. The Company is currently reviewing its greater tenement portfolio with the aim of highlighting opportunities to unlock and leverage unrealized value that can be attributed to a strategic portfolio of advanced, partially tested or untested exploration targets in these areas. This review will inform discussions on future exploration or divestment decisions for these areas. Holding costs of the assets that are considered strategic remain minimal.

Apart from properties in relatively close proximity to the existing mining operations, the only significant greenfield asset within the exploration portfolio is the Pedra Branca target where good grade surface expressions were identified by prior exploration mapping, trench channel and surface outcrop rock-chip samples and some 8,000 metres of exploration drilling. No active exploration has been undertaken at Pedra Branca since 2015 but, during late 2018 and early 2019, Jaguar reviewed the Pedra Branca Project with a view to either divesting the project or attracting a partner to re-start exploration.

## Pedra Branca Project

The Pedra Branca Project is located in the State of Ceará in northeastern Brazil and is currently comprised of 24 exploration licences, totalling 38,926 hectares covering a 38-kilometre section of a regional shear zone. Final exploration reports and a Preliminary Economic Analysis (“PEA”) have been delivered to the National Department of Mineral Production (DNPM) for three of these licences. The concessions are located in and around municipal areas with good infrastructure. The mineralized structures are open along strike with potential for significant gold mineralization.

The Pedra Branca Project is 100% owned by Jaguar. Based on the acquisition agreement of the project entered into with Glencore Xstrata plc. (“Glencore”), Glencore holds rights to an NSR of 1% on future gold production and rights of first refusal on any Base Metal Dominant Deposit discovered (as defined in the amendment) which, if exercised, would allow Glencore to hold 70% of equity in a newly formed legal entity to hold such rights upon payment of 300% of the Company’s exploration expenditures incurred exclusively on the relevant Base Metal Dominant Area of the property.

## QUALIFIED PERSON

Scientific and technical information contained in this MD&A have been reviewed and approved by Jonathan Victor Hill, BSc (Hons) (Economic Geology - UCT), Senior Expert Advisor Geology and Exploration to the Jaguar Mining Management Committee, who is also an employee of Jaguar Mining Inc., and is a “qualified person” as defined by National Instrument 43-101 - *Standards of Disclosure for Mineral Projects* (“NI 43-101”).

## OUTSTANDING SHARE DATA

The following are the issued and outstanding common shares and numbers of shares issuable under share-based compensation and warrants:

	As at November 13, 2019
Issued and outstanding common shares	723,933,539
Stock options	5,906,481
Deferred share units	6,673,467
<b>Total</b>	<b>736,513,487</b>

## NON-GAAP PERFORMANCE MEASURES

The Company has included the following non-GAAP performance measures in this document: cash operating costs per tonne of ore processed, cash operating costs per ounce of gold sold, all-in sustaining costs per ounce of gold sold, cash operating margin per ounce of gold sold, all-in sustaining margin per ounce of gold sold, adjusted operating cash flow, free cash flow, earnings before tax, depreciation and amortization (“EBITDA”), Working Capital, and adjusted EBITDA. These non-GAAP performance measures do not have any standardized meaning prescribed by IFRS and, therefore, may not be comparable to similar measures presented by other companies.

The Company believes that, in addition to conventional measures prepared in accordance with IFRS, certain investors use this information to evaluate the Company’s performance. Accordingly, they are intended to provide additional information and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. More specifically, Management believes that these figures are a useful indicator to investors and management of a mine’s performance as they provide: (i) a measure of the mine’s cash margin per ounce, by comparison of the cash operating costs per ounce to the price of gold; (ii) the trend in costs as the mine matures; and (iii) an internal benchmark of performance to allow for comparison against other mines. The definitions of these performance measures and reconciliation of the non-GAAP measures to reported IFRS measures are outlined below.

## Reconciliation of Cash Operating Costs, All-In Sustaining Costs and All-In Costs per Ounce Sold

All-in sustaining cost includes both operating and capital costs required to sustain gold production on an ongoing basis. The value of gold sold is deducted from the total production cost of sales as it is considered residual production. Sustaining operating costs represent expenditures incurred at current operations that are considered necessary to maintain current production. Sustaining capital represents capital expenditures at existing operations comprising mine development costs and ongoing replacement of mine equipment and other capital facilities and does not include capital expenditures for major growth projects or enhancement capital for significant infrastructure improvements at existing operations.

All-in cost is comprised of all-in sustaining cost as well as operating expenditures incurred at locations with no current operation, or costs related to other non-sustaining activities, and capital expenditures for major growth projects or enhancement capital for significant infrastructure improvements at existing operations.

Attributable all-in sustaining cost and all-in cost per ounce sold on a by-product basis are calculated by adjusting total production cost of sales, as reported on the interim condensed consolidated statement of operations, as follows:

(\$ thousands, except where indicated)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Operating costs (per note 14 of the consolidated FS)	\$ 13,906	\$ 12,809	\$ 43,152	\$ 40,564
General & administration expenses	2,348	2,258	6,688	7,125
Corporate stock-based compensation	70	417	414	932
Sustaining capital expenditures	7,865	7,864	23,334	21,493
All-in sustaining cash costs	24,189	23,348	73,588	70,114
Reclamation - accretion (operating sites)	-	4	8	47
<b>All-in sustaining costs</b>	<b>\$ 24,189</b>	<b>\$ 23,352</b>	<b>\$ 73,596</b>	<b>\$ 70,161</b>
Non-sustaining capital expenditures	772	641	1,205	2,241
Exploration and evaluation costs (greenfield)	44	125	135	591
Reclamation - accretion (non-operating sites)	10	16	30	67
Care and maintenance (non-operating sites)	431	417	958	1,824
<b>All-in costs</b>	<b>\$ 25,446</b>	<b>\$ 24,551</b>	<b>\$ 75,924</b>	<b>\$ 74,884</b>
Ounces of gold sold	17,417	20,441	52,836	56,908
<b>Cash operating costs per ounce sold</b>	<b>\$ 798</b>	<b>\$ 627</b>	<b>\$ 817</b>	<b>\$ 713</b>
<b>All-in sustaining costs per ounce sold</b>	<b>\$ 1,389</b>	<b>\$ 1,142</b>	<b>\$ 1,393</b>	<b>\$ 1,233</b>
<b>All-in costs per ounce sold</b>	<b>\$ 1,461</b>	<b>\$ 1,201</b>	<b>\$ 1,437</b>	<b>\$ 1,316</b>
<b>Average realized gold price</b>	<b>\$ 1,320</b>	<b>\$ 1,244</b>	<b>\$ 1,293</b>	<b>\$ 1,292</b>
<b>Cash operating margin per ounce sold</b>	<b>\$ 522</b>	<b>\$ 617</b>	<b>\$ 476</b>	<b>\$ 579</b>
<b>All-in sustaining margin per ounce sold</b>	<b>\$ (69)</b>	<b>\$ 102</b>	<b>\$ (100)</b>	<b>\$ 59</b>

## Reconciliation of Cash Operating Costs, All-In Sustaining Costs per Ounce Sold by Mine Complex/Site

(\$ thousands, except where indicated)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
<b>Turmalina Complex</b>				
Operating costs	\$ 6,122	\$ 6,218	\$ 19,204	\$ 18,308
Sustaining capital expenditures	4,643	3,952	14,063	12,294
<b>All-in sustaining costs<sup>1</sup></b>	<b>\$ 10,765</b>	<b>\$ 10,170</b>	<b>\$ 33,267</b>	<b>\$ 30,602</b>
Ounces of gold sold	7,399	8,609	23,404	24,633
<b>Cash operating costs per ounce sold<sup>1</sup></b>	<b>\$ 827</b>	<b>\$ 722</b>	<b>\$ 821</b>	<b>\$ 743</b>
<b>All-in sustaining cost per ounce sold<sup>1,2</sup></b>	<b>\$ 1,455</b>	<b>\$ 1,181</b>	<b>\$ 1,421</b>	<b>\$ 1,242</b>
<b>Caeté Complex</b>				
Operating costs	\$ 7,784	\$ 6,591	\$ 23,957	\$ 22,256
Sustaining capital expenditures	3,222	3,912	9,271	9,199
<b>All-in sustaining costs<sup>1</sup></b>	<b>\$ 11,006</b>	<b>\$ 10,503</b>	<b>\$ 33,228</b>	<b>\$ 31,455</b>
Ounces of gold sold	10,018	11,832	29,432	32,275
<b>Cash operating costs per ounce sold<sup>1</sup></b>	<b>\$ 777</b>	<b>\$ 557</b>	<b>\$ 814</b>	<b>\$ 690</b>
<b>All-in sustaining cost per ounce sold<sup>1,2</sup></b>	<b>\$ 1,099</b>	<b>\$ 888</b>	<b>\$ 1,129</b>	<b>\$ 975</b>
<b>Pilar Mine</b>				
Operating costs	\$ 7,784	\$ 6,591	\$ 23,957	\$ 21,156
Sustaining capital expenditures	3,222	3,912	9,271	9,199
<b>All-in sustaining costs<sup>1</sup></b>	<b>\$ 11,006</b>	<b>\$ 10,503</b>	<b>\$ 33,228</b>	<b>\$ 30,355</b>
Ounces of gold sold	10,018	11,832	29,432	31,381
<b>Cash operating costs per ounce sold<sup>1</sup></b>	<b>\$ 777</b>	<b>\$ 557</b>	<b>\$ 814</b>	<b>\$ 674</b>
<b>All-in sustaining cost per ounce sold<sup>1,2</sup></b>	<b>\$ 1,099</b>	<b>\$ 888</b>	<b>\$ 1,129</b>	<b>\$ 967</b>

<sup>1</sup> Cash operating costs and all-in sustaining costs are all non-gaap financial performance measures with no standard definition under IFRS. Results of individual mines may not add up to the consolidated numbers due to rounding.

<sup>2</sup> The AISC calculation by mine site does not include allocation of Corporate (Toronto and Belo Office G&A).

## Reconciliation of Free Cash Flow

(\$ thousands, except where indicated)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Cash generated from operating activities	\$ 4,676	\$ 6,566	\$ 14,704	\$ 16,004
Sustaining capital expenditures	(7,865)	(7,864)	(23,334)	(16,206)
<b>Free cash flow</b>	<b>\$ (3,189)</b>	<b>\$ (1,298)</b>	<b>\$ (8,630)</b>	<b>\$ (202)</b>
Ounces of gold sold	17,417	20,441	52,836	56,908
<b>Free cash flow per ounce sold</b>	<b>\$ (183)</b>	<b>\$ (63)</b>	<b>\$ (163)</b>	<b>\$ (4)</b>

## Reconciliation of Net Loss to EBITDA and Adjusted EBITDA

(\$ thousands, except where indicated)	Three months ended		Nine months ended	
	September 30,		September 30,	
	2019	2018	2019	2018
Net loss	\$ 1,141	\$ 2,208	\$ (2,835)	\$ (904)
Income tax expense	182	12	250	35
Finance costs	749	718	2,714	2,850
Depreciation and amortization	3,456	4,951	10,632	14,328
<b>EBITDA</b>	<b>\$ 5,528</b>	<b>\$ 7,889</b>	<b>\$ 10,761</b>	<b>\$ 16,309</b>
Changes in other provisions and VAT taxes	563	509	2,546	1,990
Foreign exchange loss (gain)	(1,575)	(318)	(1,272)	(1,604)
Stock-based compensation	70	417	414	932
Financial instruments loss (gain)	1,060	412	3,102	2,178
<b>Adjusted EBITDA</b>	<b>\$ 5,646</b>	<b>\$ 8,909</b>	<b>\$ 15,551</b>	<b>\$ 19,805</b>

<sup>1</sup> This is a non-gaap financial performance measure with no standard definition under IFRS.

## RISKS AND UNCERTAINTIES

The business of the Company involves significant risk due to the nature of mining, exploration and development activities. Certain risk factors are related to the mining industry in general while others are specific to Jaguar. The Company's exposure to risks and other uncertainties are more particularly described in the Company's Annual Information Form for the year ended December 31, 2018, filed on SEDAR under the profile of Jaguar Mining Inc. Such risk factors could materially affect the future operating results of the Company and could cause actual events to differ materially from those described in forward-looking statements relating to the Company.

Further exploration on, and development of, the Company's properties will require additional capital. In addition, a positive production decision on any of the Company's development projects would require significant capital for project engineering and construction. Accordingly, the continuing development of the Company's properties will depend upon the Company's ability to either generate sufficient funds internally or to obtain financing through the joint venturing of projects, debt financing, equity financing or other means.

The Company's principal operations and mineral properties are located in Brazil. There are additional business and financial risks inherent in doing business in Brazil as compared to the United States or Canada. Since 1996, Transparency International has published the "Corruption Perceptions Index" ("CPI") annually ranking countries by their perceived levels of corruption, as determined by expert assessments and opinion surveys. The CPI ranks countries on a scale from 100 (very clean) to 0 (highly corrupt). In 2018 and out of 180 countries in the world, Canada was ranked 9th with a CPI score of 81, the United States was ranked 22nd with a CPI score of 71, and Brazil was ranked 105th with a CPI score of 35. The average score on the 2018 CPI was 43 out of 100. Anything below 50 indicates governments are failing to tackle corruption, and it represents a challenge in those countries requiring extra attention by those who conduct business there.

Corruption does not only occur with the misuse of public, government or regulatory powers; it also can occur in business's supplies, inputs and procurement functions (such as illicit rebates, kickbacks and dubious vendor relationships), as well as the inventory and product sales functions (such as inventory shrinkage or skimming). Employees and external parties (such as suppliers, distributors and contractors) have opportunities to commit procurement fraud, theft, embezzlement and other wrongs against the Company. While corruption, bribery and fraud risks can never be fully eliminated, the Company reviews and implements controls to reduce the likelihood of these irregularities occurring. The Company utilizes an internal auditor, third-party security services and closed-circuit video surveillance at its operations in Brazil.

The Company has invested resources to document and assess its system of internal control over financial reporting and undertakes an evaluation process of such internal controls. Internal control over financial reporting are procedures designed to provide reasonable assurance that transactions are properly authorized, assets are safeguarded against unauthorized or

improper use, and transactions are properly recorded and reported. A control system, no matter how well designed and operated, can provide only reasonable, not absolute, safeguards with respect to the reliability of financial reporting and financial statement preparation.

## **CRITICAL ACCOUNTING ESTIMATES**

The preparation of the condensed interim consolidated financial statements in conformity with IFRS requires Management to make estimates, judgments, and assumptions that affect the application of accounting policies and the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the period. Actual results could differ from those estimates. Estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognized in the period in which the estimates are revised and in any future periods affected. Certain estimates, such as those related to the assessment of recoverability of the carrying amount of property, plant, equipment and mineral exploration projects, royalty receivable, valuation of recoverable taxes, deferred tax assets and liabilities, reclamation provisions, derivatives, liabilities associated with certain long-term incentive plans, measurement of inventory, provisions for legal actions and contingencies, and disclosure of contingent assets and liabilities depend on subjective or complex judgments about matters that may be uncertain. Changes in these estimates could materially impact the Company's condensed interim consolidated financial statements.

The critical accounting estimates, judgments, and assumptions applied in the preparation of the Company's condensed interim consolidated financial statements for the three months ended September 30, 2019, are consistent with those applied and disclosed in the audited annual consolidated financial statements for the year ended December 31, 2018. For details of these estimates, judgments, and assumptions, please refer to the Company's audited annual consolidated financial statements for the year ended December 31, 2018, which are available on the Company's website and on SEDAR.

### **Going concern**

The Company's financial statements were prepared on a going concern basis (see Note 1 on the unaudited consolidated financial statements for the three and nine months ended September 30, 2019), assumes that the Company will continue its operations for the foreseeable future and will be able to realize its assets and discharge its liabilities in the normal course of business as they become due.

The Company earned net income of \$1.1 million and incurred a net loss of \$2.8 million for the three and nine months ended September 30, 2019 (\$2.2 million net income and \$0.9 million net loss, respectively, for the three and nine months ended September 30, 2018). As at September 30, 2019, the Company has a positive working capital of \$5.5 million (December 31, 2018 – \$2.4 million) and an accumulated deficit of \$468.5 million (December 31, 2018 –\$465.6 million).

On July 8, 2019, the Company closed a non-brokered private placement equity offering for aggregate net proceeds of \$24.6 million. In the three months ended September 30, 2019, the private placement proceeds supported the Company in reducing \$14.3 million in financing liabilities, whereas the Company (i) fully repaid its \$7.9 million bridge facility loan due to Auramet, (ii) repaid \$2.1 million in Brazil bank indebtedness, (iii) paid \$0.6 million in right-of-use lease liabilities, and (iv) delivered \$3.9 million in gold product in fulfillment of its customer advance agreement with Auramet. The remaining \$10.3 million funds are planned for (i) capital improvements and infrastructure, (ii) advancing mineral exploration activities in order to increase reserves, (iii) general corporate and working capital improvement purposes and to meet the Company's commitments.

Following the equity offering, the Company has a positive working capital and no senior secured debt. However, the Company acknowledges it is in early stages of implementing a turnaround plan at Turmalina mine, which will require investments in development and sustaining capital in the short term. Until such a turnaround plan is executed, the inconsistent mining results at Turmalina mine present challenges to maintaining optimum production levels. Whilst the Company has instituted measures to preserve cash, improve operations and is seeking to secure additional financing, these circumstances create uncertainties over future results and cash flows.

The business of mining and exploring for minerals involves a high degree of risk and there can be no assurance that current operations or exploration programs will result in profitable mining operations. This fact, along with the factors discussed in

the preceding paragraphs results in a material uncertainty that casts significant doubt as to the Company's ability to continue to operate as a going concern. The recoverability of the carrying value of property, plant and equipment and mineral exploration projects is dependent upon the success of the above operating, exploration and financing activities and the future gold price. Changes in future conditions could require material write-downs of the carrying value of property, plant and equipment and mineral exploration projects.

## CHANGES IN ACCOUNTING POLICIES

The accounting policies and estimates applied in the condensed interim consolidated financial statements are consistent with those used in the Company's audited annual consolidated financial statements for the year ended December 31, 2018, except for the adoption of the following standards amended by the IASB that were effective and adopted as of January 1, 2019:

- IFRS 16 Leases ("IFRS 16") – In January 2016, the IASB issued IFRS 16, which requires lessees to recognize assets and liabilities for most leases. The Company adopted IFRS 16 for the annual period beginning January 1, 2019, using the modified retrospective approach, as detailed in Note 9. Under the modified retrospective approach, the Company recognizes transition adjustments, if any, in retained earnings on the date of initial application (January 1, 2019), without restating the financial statements on a retrospective basis. For comparative periods prior to 2019, the Company applied leases policies in accordance with IAS 17, Leases (IAS 17) and IFRIC 4, Determining Whether an Arrangement Contains a Lease (IFRIC 4). Note 9 outlines the effect of adopting IFRS 16 requirements on January 1, 2019. The following leases accounting policies have been applied as of January 1, 2019, on adoption of IFRS 16.

The Company has elected not to recognize right-of-use assets and lease liabilities for short-term leases that have a lease term of 12 months or less and leases of low-value assets. The lease payments associated with these leases are charged directly to the statement of operations and comprehensive income (loss) on a straight-line basis over the lease term.

At inception of a contract, the Company assesses whether a contract is, or contains, a lease. A contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. The Company then assesses (i) whether the contract involves the use of an identified asset, (ii) whether it has the right to obtain substantially all of the economic benefits from use of the asset during the term of the arrangement and (iii) if it has the right to direct the use of the asset. At inception or on reassessment of a contract that contains a lease component, the consideration in the contract is allocated to each lease component proportionally on the basis of their relative standalone prices.

As a lessee, the Company recognizes a right-of-use asset, which is included in property, plant and equipment, and a right-of-use lease liability at the commencement date of a lease. The right-of-use asset is initially measured at cost, which is comprised of the initial amount of the right-of-use lease liability adjusted for any lease payments made at or before the commencement date, plus any decommissioning and restoration costs, less any lease incentives received.

The right-of-use asset is subsequently depreciated from the commencement date to the earlier of the end of the lease term, or the end of the useful life of the asset. In addition, the right-of-use asset may be reduced due to impairment losses, if any, and adjusted for certain remeasurements of the right-of-use lease liability.

- IFRIC 23 Uncertainty over Income Tax Treatments ("IFRIC 23") – In June 2017, the IASB issued IFRIC 23, which seeks to bring clarity to the accounting for income tax that have yet to be accepted by tax authorities and provides requirements, in addition to the requirements in IAS 12 Income Taxes, by specifying how to reflect the effects of uncertainty in accounting for income taxes. IFRIC 23 is effective for annual reporting periods beginning on or after January 1, 2019, with earlier adoption permitted. The adoption of IFRIC 23 did not affect the financial results or disclosures in the Company's consolidated financial statements.

## **DISCLOSURE CONTROLS AND PROCEDURES AND INTERNAL CONTROLS OVER FINANCIAL REPORTING**

### *Disclosure Controls and Procedures*

Disclosure controls and procedures are designed to provide reasonable assurance that material information is gathered and reported to senior management, including the President and Chief Executive Officer (“CEO”) and the Chief Financial Officer (“CFO”), as appropriate, to permit timely decisions regarding public disclosure.

The Company’s Management, including the CEO and CFO, has as at September 30, 2019, designed Disclosure Controls and Procedures (as defined in National Instrument 52-109 of the Canadian Securities Administrators), or caused them to be designed under their supervision, to provide reasonable assurance that material information relating to the issuer is made known to them by others, particularly during the period in which the interim filings are being prepared; and information required to be disclosed by the issuer in its annual filings, interim filings or other reports filed or submitted by it under securities legislation is recorded, processed, summarized and reported within the time periods specified in securities legislation.

### *Internal Control over Financial Reporting*

The Company’s Management, including the CEO and CFO, is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed by, or under the supervision of, the CEO and CFO and effected by Management and other personnel to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. There have been no changes in the Company’s internal control over financial reporting during the three months ended September 30, 2019, that have materially affected, or are reasonably likely to affect, the Company’s internal control over financial reporting.

### *Limitations of Controls and Procedures*

The Company’s Management, including the CEO and CFO, believe that disclosure controls and procedures and internal control over financial reporting, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, they cannot provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been prevented or detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by unauthorized override of the controls. The design of any control system is also based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed.

## CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Certain statements in this MD&A constitute “forward-looking information” within the meaning of applicable Canadian securities legislation. This forward-looking information includes, but is not limited to, statements concerning the Company’s future objectives, Measured and Indicated Mineral Resources, Proven and Probable Mineral Reserves, their average grade, the commencement period of production, cash operating costs per ounce and completion dates of feasibility studies, gold production and sales targets, capital expenditure costs, future profitability and growth in mineral reserves. Forward-looking information can be identified by the use of words such as “are expected,” “is forecast,” “is targeted,” “approximately,” “plans,” “anticipates,” “projects,” “anticipates,” “continue,” “estimate,” “believe” or variations of such words and phrases or statements that certain actions, events or results “may,” “could,” “would,” “might,” or “will” be taken, occur or be achieved. Forward-looking information involves known and unknown risks, uncertainties and other factors which may cause the actual results or performance to be materially different from any future results or performance expressed or implied by the forward-looking information. These factors include the inherent risks involved in the exploration and development of mineral properties, the uncertainties involved in interpreting drilling results and other geological data, fluctuating gold prices and monetary exchange rates, the possibility of project delays and cost overruns or unanticipated costs and expenses, uncertainties relating to the availability and costs of financing needed in the future, uncertainties related to production rates, timing of production and the cash and total costs of production, changes in applicable laws including laws related to mining development, environmental protection, and the protection of the health and safety of mine workers, the availability of labour and equipment, the possibility of civil insurrection, labour strikes and work stoppages and changes in general economic conditions. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those contained in forward-looking information, there may be other factors that could cause actions, events or results to differ from those anticipated, estimated or intended.

This forward-looking information represents the Company’s views as of the date of this MD&A. The Company anticipates that subsequent events and developments may cause the Company’s views to change. The Company does not undertake to update any forward-looking information, either written or oral, that may be made from time to time by, or on behalf of the Company, subsequent to the date of this discussion, other than as required by law. For a discussion of important factors affecting the Company, including fluctuations in the price of gold and exchange rates, uncertainty in the calculation of mineral resources, competition, uncertainty concerning geological conditions and governmental regulations and assumptions underlying the Company’s forward-looking information, see “CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS” and “RISK FACTORS” in the Company’s Annual Information Form for the year ended December 31, 2018, that can be accessed under the profile of Jaguar Mining Inc. on SEDAR at [www.sedar.com](http://www.sedar.com). Further information about the Company is available on its corporate website at [www.jaguarmining.com](http://www.jaguarmining.com).