



**Management's Discussion and Analysis**

**For the Three Months Ended March 31, 2017**

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## **MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS**

The following discussion and analysis provides information that management believes is relevant to an assessment and understanding of the consolidated financial condition and results of operations of Golden Star Resources Ltd. and its subsidiaries ("Golden Star" or "the Company" or "we" or "our"). This Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") should be read in conjunction with the Company's condensed interim consolidated financial statements and related notes for the three months ended March 31, 2017, which are prepared in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board ("IASB"). This MD&A includes information available to, and is dated, May 3, 2017. Unless noted otherwise, all currency amounts are stated in U.S. dollars and all information presented in this MD&A is prepared in accordance with IFRS.

### **CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION**

This MD&A contains "forward-looking information" within the meaning of applicable Canadian securities laws and "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995, concerning the business, operations and financial performance and condition of Golden Star. Generally, forward-looking information and statements can be identified by the use of forward-looking terminology such as "plans", "expects", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates", "believes" or variations of such words and phrases (including negative or grammatical variations) or statements that certain actions, events or results "may", "could", "would", "might" or "will be taken", "occur" or "be achieved" or the negative connotation thereof. Forward-looking information and statements in this MD&A include, but are not limited to, information or statements with respect to: production, cash operating costs and all-in sustaining costs estimates for 2017; the timing for transforming Wassa and Prestea into lower cost producers; the ability of the Company to transform into a reliable and stable low cost producer when both underground projects are in full production and the timing for such production; the timing for commercial production at Prestea Underground; the timing for mining from Mampon and for processing ore from Mampon; the respective timing for the commencement of stoping and commercial production at Prestea Underground; total construction capital expenditures prior to commercial production at Prestea Underground; pre-commercial production revenue at Prestea Underground prior to achieving commercial production; the Company's debt repayment and servicing obligations for 2017; the Company's capital expenditures during 2017, and the respective amounts thereof which are for development capital and for sustaining capital; settlement of the 5% Convertible Debentures in cash; rehabilitation obligations of the Company; mining the first stopes of the B Shoot at Wassa Underground via longitudinal stoping and the width of these stopes; plans to use transverse stoping to mine Wassa Underground and the timing thereof, as well as the impact on production from Wassa Underground in the second half of 2017; availability of cash to support the Company's 2017 operations and mandatory expenditures; gold production increases at Wassa Underground from the third quarter of 2017 onwards; the B Shoot being a higher grade area of the Wassa Underground ore body; production at Prestea Underground during the development phase of the project; the ability to defer discretionary capital spending in 2017 and the amount that can be deferred; exploration spending during 2017; the sufficiency of the Company's existing cash balance; working capital, debt repayments and requirements for additional capital; and the ability of the Company to repay the outstanding principal amount of the 5% Convertible Debentures when due.

Forward-looking information and statements are made based upon certain assumptions and other important factors that, if untrue, could cause the actual results, performance or achievements of Golden Star to be materially different from future results, performance or achievements expressed or implied by such statements. Such statements and information are based on numerous assumptions regarding present and future business strategies and the environment in which Golden Star will operate in the future, including the price of gold, anticipated costs and ability to achieve goals. Certain important factors that could cause actual results, performances or achievements to differ materially from those set forth in the forward-looking information and statements include, among others, gold price volatility, discrepancies between actual and estimated production, mineral reserves and resources and metallurgical recoveries, mining operational and development risks, litigation risks, liquidity risks, suppliers suspending or denying delivery of products or services, regulatory restrictions (including environmental regulatory restrictions and liability), actions by governmental authorities (including changes in taxation), currency fluctuations, the speculative nature of gold exploration, the global economic climate, dilution, share price volatility, the availability of capital on reasonable terms or at all, local and community impacts and issues, results of pending or future feasibility studies, competition, loss of key employees, additional funding requirements and defective title to mineral claims or property. Although Golden Star has attempted to identify important factors that could cause actual results, performance or achievements to differ materially from those described in forward-looking information and statements, there may be other factors that cause actual results, performance or achievements not to be as anticipated, estimated or intended.

Forward-looking information and statements are subject to known and unknown risks, uncertainties and other important factors that may cause the actual results, performance or achievements of Golden Star to be materially different from those expressed or implied by such forward-looking information and statements, including but not limited to: risks related to international operations, including economic and political instability in foreign jurisdictions in which Golden Star operates; risks related to current global financial conditions; actual results of current exploration activities; environmental risks; future prices of gold; possible variations in mineral reserves and mineral resources, grade or recovery rates; mine development and operating risks; an inability to obtain power for operations on favourable terms or at all; mining plant or equipment breakdowns or failures; an inability to obtain products or services

for operations or mine development from vendors and suppliers on reasonable terms, including pricing, or at all; accidents, labor disputes and other risks of the mining industry; delays in obtaining governmental approvals or financing or in the completion of development or construction activities; risks related to indebtedness and the service of such indebtedness, as well as those factors discussed in the section entitled “Risk Factors” in Golden Star’s Annual Information Form for the year ended December 31, 2016. Although Golden Star has attempted to identify important factors that could cause actual results, performances and achievements to differ materially from those contained in forward-looking information and statements, there may be other factors that cause results, performance and achievements not to be as anticipated, estimated or intended. There can be no assurance that such statements will prove to be accurate, as actual results, performance, and achievements and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking information and statements. Forward-looking information and statements are made as of the date hereof and accordingly are subject to change after such date. Except as otherwise indicated by Golden Star, these statements do not reflect the potential impact of any non-recurring or other special items or of any dispositions, monetizations, mergers, acquisitions, other business combinations or other transactions that may be announced or that may occur after the date hereof. Forward-looking information and statements are provided for the purpose of providing information about management’s current expectations and plans and allowing investors and others to get a better understanding of the Company’s operating environment. Golden Star does not undertake to update any forward-looking information and statements that are included in this MD&A, except as required by applicable securities laws.

## **CAUTIONARY NOTE REGARDING RESERVES AND RESOURCES**

Scientific and technical information contained in this MD&A was reviewed and approved by Dr. Martin Raffield, Senior Vice-President, Technical Services for Golden Star who is a “qualified person” as defined by National Instrument 43-101 - Standards of Disclosure for Mineral Projects (“NI 43-101”) and by S. Mitchel Wasel, BSc Geology who is a Qualified Person pursuant to NI 43-101. Mr. Wasel is Vice President Exploration for Golden Star and an active member of the Australasian Institute of Mining and Metallurgy. All mineral reserves and mineral resources have been calculated in accordance with the standards of the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) and in compliance with the requirements of NI 43-101. All mineral resources are reported inclusive of mineral reserves. Mineral resources which are not mineral reserves do not have demonstrated economic viability. Information on data verification performed on, and other scientific and technical information relating to, the mineral properties mentioned in this MD&A that are considered to be material mineral properties of the Company are contained in Golden Star’s Annual Information Form for the year ended December 31, 2016 and the following current technical reports for those properties available at [www.sedar.com](http://www.sedar.com): (i) Wassa - “NI 43-101 Technical Report on feasibility study of the Wassa open pit mine and underground project in Ghana” effective date December 31, 2014; (ii) Bogoso - “NI 43-101 Technical Report on Resources and Reserves Golden Star Resources Ltd., Bogoso Prestea Gold Mine, Ghana” effective date December 31, 2013; and (iii) Prestea Underground - “NI 43-101 Technical Report on a Feasibility Study of the Prestea Underground Gold Project in Ghana” effective date November 3, 2015.

### **Cautionary Note to U.S. Investors**

This MD&A has been prepared in accordance with the requirements of the securities laws in effect in Canada, which differ materially from the requirements of United States securities laws applicable to U.S. companies. Information concerning our mineral properties has been prepared in accordance with the requirements of Canadian securities laws, which differ in material respects from the requirements of the Securities and Exchange Commission (the “SEC”) set forth in Industry Guide 7. Under the SEC’s Industry Guide 7, mineralization may not be classified as a “reserve” unless the determination has been made that the mineralization could be economically and legally produced or extracted at the time of the reserve determination, and the SEC does not recognize the reporting of mineral deposits which do not meet the SEC Industry Guide 7 definition of “Reserve”. In accordance with NI 43-101, the terms “mineral reserve”, “proven mineral reserve”, “probable mineral reserve”, “mineral resource”, “measured mineral resource”, “indicated mineral resource” and “inferred mineral resource” are defined in accordance with CIM standards. While the terms “mineral resource”, “measured mineral resource”, “indicated mineral resource” and “inferred mineral resource” are recognized and required by NI 43-101, the SEC does not recognize them. You are cautioned that, except for that portion of mineral resources classified as mineral reserves, mineral resources do not have demonstrated economic viability. Inferred mineral resources have a high degree of uncertainty as to their existence and as to whether they can be economically or legally mined. It cannot be assumed that all or any part of an inferred mineral resource will ever be upgraded to a higher category. Therefore, you are cautioned not to assume that all or any part of an inferred mineral resource exists, that it can be economically or legally mined, or that it will ever be upgraded to a higher category. Likewise, you are cautioned not to assume that all or any part of measured or indicated mineral resources will ever be upgraded into mineral reserves.

## OVERVIEW OF GOLDEN STAR

Golden Star is an established gold producer that holds a 90% interest in the Wassa and Prestea gold mines in Ghana. The Company has two open pit producing mines (Wassa Main Pit and the Prestea Open Pits), one producing underground mine ("Wassa Underground") and one underground development project ("Prestea Underground"). Wassa Underground achieved commercial production on January 1, 2017 and Prestea Underground is expected to achieve commercial production in the third quarter of 2017. The Company is a reporting issuer or the equivalent in all provinces of Canada, in Ghana and in the United States, and files disclosure documents with securities regulatory authorities in Canada, Ghana and with the SEC in the United States.

## SUMMARY OF OPERATING AND FINANCIAL RESULTS

		Three Months Ended March 31,	
<b>OPERATING SUMMARY</b>		<b>2017</b>	<b>2016</b>
Wassa Main Pit gold sold	oz	20,049	30,887
Wassa Underground gold sold	oz	11,482	—
Prestea gold sold	oz	26,613	21,782
Total gold sold	oz	58,144	52,669
Total gold produced	oz	57,795	53,217
Average realized gold price	\$/oz	1,179	1,159
Cost of sales per ounce - Consolidated <sup>1</sup>	\$/oz	1,029	890
Cost of sales per ounce - Wassa <sup>1</sup>	\$/oz	1,217	908
Cost of sales per ounce - Prestea <sup>1</sup>	\$/oz	806	863
Cash operating cost per ounce - Consolidated <sup>1</sup>	\$/oz	798	721
Cash operating cost per ounce - Wassa <sup>1</sup>	\$/oz	942	706
Cash operating cost per ounce - Prestea <sup>1</sup>	\$/oz	628	742
All-in sustaining cost per ounce - Consolidated <sup>1</sup>	\$/oz	977	880

<sup>1</sup> See "Non-GAAP Financial Measures" section for a reconciliation of cost of sales per ounce, cash operating cost per ounce and all-in sustaining cost per ounce to cost of sales before depreciation and amortization.

FINANCIAL SUMMARY		Three Months Ended March 31,	
		2017	2016
Gold revenues	\$'000	68,545	61,067
Cost of sales excluding depreciation and amortization	\$'000	51,406	41,058
Depreciation and amortization	\$'000	8,439	5,796
Mine operating margin	\$'000	8,700	14,213
General and administrative expense	\$'000	7,992	7,222
(Gain)/loss on financial instruments <sup>1</sup>	\$'000	(2,333)	2,207
Net income attributable to Golden Star shareholders	\$'000	170	2,051
Adjusted net income attributable to Golden Star shareholders <sup>2</sup>	\$'000	3,411	8,538
Income per share attributable to Golden Star shareholders - basic and diluted	\$/share	0.00	0.01
Adjusted income per share attributable to Golden Star shareholders - basic <sup>2</sup>	\$/share	0.01	0.03
Cash provided by operations	\$'000	9,438	928
Cash provided by operations before working capital changes <sup>3</sup>	\$'000	17,725	10,767
Cash provided by operations per share - basic	\$/share	0.03	0.00
Cash provided by operations before working capital changes per share - basic <sup>3</sup>	\$/share	0.05	0.04
Capital expenditures	\$'000	16,703	15,914

<sup>1</sup> (Gain)/loss on financial instruments consists of (gain)/loss on fair value of financial instruments and a loss on conversion of the 7% Convertible Debentures.

<sup>2</sup> See "Non-GAAP Financial Measures" section for a reconciliation of adjusted net income attributable to Golden Star shareholders and adjusted income per share attributable to Golden Star shareholders to net income attributable to Golden Star shareholders and income per share attributable to Golden Star shareholders.

<sup>3</sup> See "Non-GAAP Financial Measures" section for an explanation of the calculation of cash provided by operations before working capital changes and cash provided by operations before working capitals per share - basic.

- Gold revenues totaled \$68.5 million in the first quarter of 2017, compared to \$61.1 million in the same period in 2016.** The 12% increase in gold revenues was due to higher gold production at Prestea, higher realized gold price and commencement of commercial production of the Wassa Underground Mine. Gold revenues from Prestea increased by 25% during the first quarter of 2017 as its gold sales increased by 22% compared to the same period in 2016. Gold revenues from Wassa increased 4% compared to the same period in 2016. The achievement of commercial production of the Wassa Underground Mine on January 1, 2017 contributed to the gold revenues at Wassa as the underground operation contributed 155,383 tonnes of ore at a grade of 2.47grams per tonne ("g/t"). Gold revenues attributable to the underground operation in the first quarter of 2017 was mostly from ore mined in the lower grade F shoot area. The transition to the higher grade B shoot area of the underground occurred during the latter part of the quarter. The consolidated average realized gold price was \$1,179 per ounce in the first three months of 2017, a 2% increase compared to the same period in 2016.
- Gold sales of 58,144 ounces in the first quarter of 2017 were 10% higher than the 52,669 ounces sold in the same period in 2016.** Prestea gold sales of 26,613 ounces in the first quarter of 2017 were 22% higher than the same period in 2016 due to higher throughput, higher ore grade processed and higher recovery. Gold sales from Wassa of 31,531 ounces in the first quarter of 2017 was slightly higher than the same period in 2016. For the first quarter of 2017, 11,482 ounces (or 36%) of gold sold were attributed to the higher grade Wassa Underground and 20,049 ounces (or 64%) of gold sold were attributed to the Wassa Main Pit. The production from the Wassa Underground Mine is intended to replace part of the Main Pit feed in the plant with higher grade underground ore. Wassa Main Pit is expected to continue to reduce its contribution going forward as the Wassa Underground Mine continues to ramp up. In the first quarter of 2016, Wassa gold sales were attributable exclusively to the Wassa Main Pit.
- Cost of sales excluding depreciation and amortization in the first quarter of 2017 totaled \$51.4 million compared to \$41.1 million in the same period in 2016.** The 25% increase in cost of sales excluding depreciation and amortization for the first quarter of 2017 was due mainly to higher mining costs at Wassa as it transitions into a new business model from solely operating an open pit operation, to a combination of operating open pit and underground mining operations. Wassa Underground was placed into commercial production on January 1, 2017, and as a result mining costs were higher in 2017 when compared to the same period of 2016. Underground mining costs were previously capitalized in 2016. In addition, there was a \$4.8 million increase in inventory charges in the first quarter of 2017 compared to the same period in 2016 due to a drawdown of stockpiles at Wassa and no build up of inventory at Prestea.
- Consolidated cost of sales per ounce was \$1,029 in the first quarter of 2017, 16% higher than \$890 in the same period in 2016. Consolidated cash operating cost per ounce was \$798 in the first quarter of 2017, 11% higher than \$721 in**

**the same period in 2016.** Prestea achieved a 15% improvement in cash operating cost per ounce in the first quarter of 2017 compared to the same period in 2016 as a result of higher gold production. The lower costs per ounce at Prestea were offset by the higher costs per ounce at Wassa due to the higher mining costs. Wassa's higher mining costs were largely due to underground mining costs which were capitalized in 2016 as well as a higher strip ratio at the open pit operation.

- **Depreciation and amortization expense totaled \$8.4 million in the first quarter of 2017 compared to \$5.8 million in the same period in 2016.** The increase in depreciation and amortization expense for the first quarter of 2017 was due primarily to the commencement of depreciation on Wassa Underground assets, higher production at Prestea and lower reserve and resource estimates for Prestea Open Pits compared to 2016.
- **General and administrative costs totaled \$8.0 million in the first quarter of 2017, compared to \$7.2 million in the same period in 2016.** General and administrative costs excluding non-cash share-based compensation was \$3.3 million in the first quarter of 2017, compared to \$2.9 million in the same period in 2016. The increase in share-based compensation in the first quarter of 2017 was a result of improvement in the Company's share price.
- **The Company recorded a gain of \$2.3 million on financial instruments in the first quarter of 2017 compared to a loss of \$2.2 million in the same period in 2016.** The gain in the first quarter of 2017 was comprised of a \$3.1 million non-cash revaluation gain on the embedded derivative liability of the 7% Convertible Debentures, offset by a \$0.4 million non-cash revaluation loss on warrants, a \$0.2 million loss on conversion of 7% Convertible Debentures and a \$0.2 million non-cash revaluation loss on the 5% Convertible Debentures. The \$2.2 million fair value loss recognized in the first quarter of 2016 was comprised of a \$1.3 million non-cash revaluation loss on collars and forward contracts, a \$1.1 million non-cash loss on warrants, a \$0.3 million realized loss on sales of gold calls, offset by a \$0.5 million non-cash revaluation gain on the 5% Convertible Debentures. The valuation techniques used for these financial instruments are disclosed in the "Financial Instruments" section of this MD&A.
- **Net income attributable to Golden Star shareholders for the first quarter of 2017 totaled \$0.2 million or \$0.00 income per share, compared to a net income of \$2.1 million attributable to Golden Star shareholders or \$0.01 income per share for the same period in 2016.** The lower net income attributable to Golden Star shareholders in the first quarter of 2017 compared to the same period in 2016 was due primarily to a mine operating loss at Wassa in the first quarter of 2017 compared to a mine operating margin in the same period in 2016. This was partially offset by higher mine operating margin at Prestea and a fair value gain on financial instruments during the first quarter of 2017 compared to a fair value loss on financial instruments during the same period in 2016.
- **Adjusted net income attributable to Golden Star shareholders (see "Non-GAAP Financial Measures" section) was \$3.4 million in the first quarter of 2017, compared to \$8.5 million for the same period in 2016.** The lower adjusted net income attributable to Golden Star shareholders was principally due to a mine operating loss at Wassa in the first quarter of 2017 compared to a mine operating margin in the same period in 2016, partially offset by higher mine operating margin at Prestea. The mine operating loss at Wassa in the first quarter of 2017 was due to lower production from the Wassa Main Pit as a result of mining in a lower ore grade zone, higher mining costs associated with underground mining and production from Wassa Underground affected by mining in the lower grade F shoot.
- **Cash provided by operations before working capital was \$17.7 million for the first quarter of 2017, compared to \$10.8 million in the same period in 2016.** The increase in cash provided by operations before working capital was due primarily to a \$10.0 million advance payment from RGLD Gold AG ("RGLD") during the first quarter of 2017 compared to \$nil in the first quarter of 2016, and the higher mine operating margin at Prestea. The increase was partially offset by the mine operating loss at Wassa in the first quarter of 2017 compared to the mine operating margin for the same period in 2016.
- **Capital expenditures for the first quarter of 2017 totaled \$16.7 million compared to \$15.9 million in the same period in 2016.** The major capital expenditures in the first quarter of 2017 at Wassa included \$1.7 million of expenditures relating to Wassa Underground Mine and \$1.0 million for the improvement of the tailings storage facility. Capital expenditures at Prestea during the first quarter of 2017 included \$10.3 million on expenditures relating to the development of the Prestea Underground Mine, \$2.5 million relating to Mampon development expenditures and \$0.7 million relating to development of the Prestea Open Pit Mines.

## OUTLOOK FOR 2017

### Production and cost guidance

Production, and cost guidance for 2017 remain unchanged.

	Gold production	Cash operating costs	All-in sustaining costs
	thousands of ounces	\$ per ounce	\$ per ounce
Wassa Main Pit	85 - 95		
Wassa Underground	60 - 65		
<b>Wassa Consolidated</b>	<b>145 - 160</b>	<b>830 - 915</b>	
Prestea Open Pit Mines	65 - 70		
Prestea Underground <sup>1</sup>	45 - 50		
<b>Prestea Consolidated</b>	<b>110 - 120</b>	<b>715 - 780</b>	
<b>Consolidated</b>	<b>255 - 280</b>	<b>780 - 860</b>	<b>970 - 1,070</b>

<sup>1</sup> Costs incurred at Prestea Underground will be capitalized until commercial production is achieved. As a result, pre-commercial production costs are reflected in the Company's development capital expenditure guidance set out in the table below and are not included in the Company's cash operating cost per ounce guidance set out in the table above.

### Capital expenditures guidance

During the first quarter of 2017, the Company released its expanded exploration strategy for the year. Total exploration expenditures of \$6.5 million are now expected to be incurred in 2017. Guidance for capital expenditures relating to Wassa Main Pit, Wassa Underground, Prestea Open Pit Mines and Prestea Underground remain unchanged.

	Sustaining	Development	Total
	\$ millions	\$ millions	\$ millions
Wassa Main Pit	5.9	1.1	7.0
Wassa Underground	9.0	3.4	12.4
Prestea Open Pit Mines	5.0	—	5.0
Prestea Underground	0.4	31.2	31.6
Exploration	—	6.5	6.5
<b>Consolidated</b>	<b>20.3</b>	<b>42.2</b>	<b>62.5</b>

## CORPORATE DEVELOPMENTS

### Gold prices

Spot gold prices increased from \$1,159 per ounce at the end of 2016 to \$1,249 per ounce on March 31, 2017. The Company realized an average gold price of \$1,179 per ounce for gold sales during the first quarter of 2017, compared to an average realized gold price of \$1,159 per ounce for the same period in 2016. The spot gold price on May 3, 2017 was \$1,250 per ounce.

Revenue from spot sales during the first quarter of 2017 resulted in an average realized price of \$1,217 per ounce whereas revenue recognized from the gold purchase and sale agreement (the "Streaming Agreement") with RGLD resulted in an average realized price of \$823 per ounce.



	Three Months Ended March 31, 2017		
	\$'000	Ounces	Realized price per ounce
Revenue - Stream arrangement			
Cash proceeds	\$ 1,377		
Deferred revenue recognized	3,289		
	\$ 4,666	5,671	\$ 823
Revenue - Spot sales	63,879	52,473	1,217
Total revenue	\$ 68,545	58,144	\$ 1,179

### **\$25 million Medium Term Loan Facility from Ecobank**

In March 2017, the Company through its subsidiary, Golden Star (Wassa) Limited, signed a commitment letter with Ecobank Ghana Limited regarding a \$25 million secured Medium Term Loan facility ("Ecobank Loan III"). This \$25 million secured facility has a term of 60 months from the date of initial drawdown and is secured by, among other things, Wassa's existing plant, machinery and equipment limited to having a forced sale value of \$32.5 million. The interest rate on the loan is three month LIBOR plus 8%, per annum, payable monthly in arrears beginning a month following the initial drawdown. Payment of principal commences six months following the initial drawdown and is thereafter payable quarterly in arrears. The Company has twelve months from the date of the commitment letter to make drawdowns on the facility. At May 3, 2017, the Company has not made any drawdown.

### **Mining at Mampon**

Mining has commenced at the Mampon deposit in March 2017. Mampon is a high grade, open pit, oxide deposit, with mineral reserves of 301,000 tonnes at 4.64 g/t for 45,000 ounces of gold. Mampon is 65 km to the north of the carbon-in-leach processing plant at Bogoso/Prestea. Trucking of the higher grade ore from Mampon began in early April 2017 and it is being blended with ore from the Prestea Open Pits. The benefits of the higher grade ore from Mampon are expected to be realized in Golden Star's cash flow in the second and third quarters of 2017.

### **Bought deal**

On February 7, 2017, the Company completed a bought deal public offering which resulted in the issuance of 31,363,950 common shares, including 4,090,950 common shares issued upon full exercise of the over allotment option, at a price CAD\$1.10 per share for net proceeds of \$24.5 million.

### **Wassa Underground Mine**

On January 6, 2017, the Company announced that commercial production had been achieved at its Wassa Underground Mine in Ghana, effective January 1, 2017. Mining of the high grade B Shoot zone of Wassa Underground has commenced. Golden Star blasted the first stoping ore from the B Shoot in late March 2017.

Golden Star is using a conventional longhole open stoping method to mine Wassa Underground. The first stopes of the B Shoot will be mined via longitudinal stoping and these stopes are anticipated to be between 15 and 20 metres wide. As mining progresses further into the B Shoot, Golden Star plans to use transverse stoping to mine the wider, higher grade portion of the deposit, with expected widths of between 20 and 40 metres. Transverse stoping is expected to commence during the third quarter of 2017 and this is anticipated to result in stronger production from Wassa Underground in the second half of 2017.

### **Conversions of 7% Convertible Debentures**

During the first quarter of 2017, \$8.5 million principal outstanding of the 7% Convertible Debentures were converted into 9,445,552 shares. In total, \$13.5 million principal outstanding of the 7% Convertible Debentures has been converted into 15,002,218 common shares at May 3, 2017. Total principal that remains outstanding on the 7% Convertible Debentures is \$51.5 million. During the quarter ended March 31, 2017, the Company recognized a \$0.2 million loss on conversion of the 7% Convertible Debentures.

### **Advance payment under Streaming Agreement**

During the first quarter of 2017, the Company received the final advance payment of \$10.0 million pursuant to the gold purchase and sales agreement with RGLD. Since the inception of the Streaming Agreement in July 2015, the Company has received total advance payments of \$145.0 million. All advance payments under the Streaming Agreement have now been received.

### **Exploration Update**

During the first quarter of 2017, Golden Star released its expanded exploration strategy for the year. The first phase of the exploration strategy comprises 48,000 metres of drilling at a cost of \$6.5 million and further drilling may be conducted subject to the results received. In line with the strategy, drilling commenced at the initial targets during the first quarter of 2017, which

included Prestea Underground, the Prestea Open Pits, the Mampon deposit and the nearby Aboronye deposit, and the 242 trend at Wassa.

Results were received for the Wassa Underground in-fill drilling program which was concluded at the end of 2016. This surface drilling program targeted the first planned transverse stoping areas of the B Shoot zone. The assay results confirmed the wide zones of high grade gold mineralization in this area. This program has also defined the contacts and geometry of the high grade zones. In addition, the drilling targeted gaps in the existing planned stopes in order to determine whether continuity between areas of higher grade mineralization exists. The results of the most northern holes from this program indicated that the ore body is open to the north. As such, Golden Star will be evaluating the viability of adding additional stopes to the mine plan in this area.

## DEVELOPMENT PROJECTS UPDATE

### Prestea

The Prestea mine consists of an underground mine that has been in existence for over 100 years along with adjacent surface deposits. The Prestea mine is located 16 km south of the Bogoso mine and processing plants in the town of Prestea. The underground mine is in the final stages of refurbishment and development continues for the mechanized shrinkage (Alimak) stoping. A number of high grade surface deposits exist to the south of the underground mine which the Company is currently mining and processing through the non-refractory processing plant.

#### *Prestea Underground Development*

By the end of the first quarter of 2017, the refurbishment of Prestea Underground was in its final stages and development of the first stope of the West Reef had commenced. All five Alimak raise climbers were on site and the winder upgrades were complete, enabling an increase in hoisting capacity to achieve the targeted production rate in 2017.

By May 2, 2017 a total of 8,800 tonnes of ore had been hoisted and delivered to the processing plant's run-of-mine pad. Processing of this ore commenced in mid-April 2017 and it is being blended with ore from the Prestea Open Pits and the Mampon deposit. A total of 14,900 tonnes of waste have been hoisted since August 2016.

By May 2, 2017 the first Alimak had advanced 124 metres up the ore body from 24 Level towards 21 Level, as planned. The development of the second Alimak nest is also complete and development of the second raise is expected to begin in mid-May.

Underground development works continued with a total development advance of approximately 1,010 metres completed by May 2, 2017. Although the development of the first raise has progressed on target, the total development advance is behind schedule, particularly in terms of footwall drive development. This delay is as a result of commissioning-related infrastructure issues, involving underground haulage and water pumping, and the mine's relatively inexperienced workforce. Golden Star is seeking to rectify these issues by further upgrading key parts of Prestea Underground's infrastructure, such as the pumping system, and by investing in further training for employees.

Despite this delay, blasting of the first stoping ore remains on track to occur in the second quarter of 2017, with commercial production anticipated to be achieved in the third quarter of 2017.

The capital expenditures for Prestea Underground Mine are shown in the table below:

(in millions of U.S. dollars)	First Quarter 2017	Project-to- date
Capital spending	\$ 9.4	\$ 48.8
Capitalized borrowing costs	0.9	4.6
Capital expenditures	\$ 10.3	\$ 53.4

Total construction capital expenditures prior to commercial production, net of pre-commercial production revenue, is expected to be \$61 million for the underground mine. The Company expects to incur total capital expenditures, net of pre-commercial production revenue, of approximately \$18 million in 2017, prior to achieving commercial production in the third quarter of 2017.

## WASSA OPERATIONS

Through a 90% owned subsidiary, Golden Star (Wassa) Limited, the Company owns and operates the Wassa Main Pit (an open pit mine) and Wassa Underground (an underground mine). The Wassa operations are located in the southwestern region of Ghana, approximately 35 kilometers northeast of the town of Tarkwa. Wassa has a non-refractory processing plant (the "Wassa processing plant") consisting of a carbon-in-leach ("CIL") system with a capacity of 2.7 million tonnes per annum. Ore from both the Wassa Main Pit and Wassa Underground is processed at the Wassa processing plant.

		Three Months Ended March 31,	
		2017	2016
<b>WASSA FINANCIAL RESULTS</b>			
Revenue	\$'000	\$ 37,250	\$ 35,949
Mine operating expenses	\$'000	28,225	24,035
Severance charges	\$'000	954	113
Royalties	\$'000	1,913	1,864
Operating costs from/(to) metals inventory	\$'000	1,482	(2,235)
Inventory net realizable value adjustment	\$'000	505	—
Cost of sales excluding depreciation and amortization	\$'000	33,079	23,777
Depreciation and amortization	\$'000	5,304	4,279
Mine operating (loss)/margin	\$'000	\$ (1,133)	\$ 7,893
Capital expenditures	\$'000	3,033	8,538
<b>WASSA OPERATING RESULTS</b>			
Ore mined - Main Pit	t	362,224	609,519
Ore mined - Underground	t	153,862	—
Ore mined - Total	t	516,086	609,519
Waste mined - Main Pit	t	1,908,825	2,406,220
Waste mined - Underground	t	54,117	—
Waste mined	t	1,962,942	2,406,220
Ore processed - Main Pit	t	501,368	640,940
Ore processed - Underground	t	155,383	—
Ore processed - Total	t	656,751	640,940
Grade processed - Main Pit	g/t	1.27	1.64
Grade processed - Underground	g/t	2.47	—
Recovery	%	93.1	94.1
Gold produced - Main Pit	oz	19,867	31,273
Gold produced - Underground	oz	11,482	—
Gold produced - Total	oz	31,349	31,273
Gold sold - Main Pit	oz	20,049	30,887
Gold sold - Underground	oz	11,482	—
Gold sold - Total	oz	31,531	30,887
Cost of sales per ounce <sup>1</sup>	\$/oz	1,217	908
Cash operating cost per ounce <sup>1</sup>	\$/oz	942	706

<sup>1</sup> See "Non-GAAP Financial Measures" section for a reconciliation of cost of sales per ounce and cash operating cost per ounce to cost of sales excluding depreciation and amortization.

## **For the three months ended March 31, 2017 compared to three months ended March 31, 2016**

### *Production*

#### Wassa Underground

In its first quarter of commercial production, Wassa Underground contributed 155,383 tonnes at a grade of 2.47 g/t for 11,482 ounces (or 37% of Wassa's total production). For most of the quarter, mining operations accessed the lower grade F Shoot zone, transitioning into the higher grade B Shoot zone during the latter parts of the quarter. Higher grade ore from Wassa Underground is intended to partially replace Wassa Main Pit feed to the plant and production from the underground operations is anticipated to increase in the third quarter of 2017 once the mining operations begin access to the larger, transverse stopes. During the first quarter of 2017 both operations were in transition as Wassa Underground continued to ramp up and Wassa Main Pit adapted to operating on a smaller scale and as part of a combined open pit and underground operation.

#### Wassa Main Pit

Production from Wassa Main Pit was 501,368 tonnes at a grade of 1.27 g/t for 19,867 ounces (or 63% of Wassa's total production) in the first quarter of 2017, a decrease of 36% compared to the same period in 2016. This was due to the increased production from Wassa Underground, which reduced the amount of ore needed from the Main Pit to feed the plant, and the lower grade ore zones being accessed, as expected in the mine plan. Wassa Main Pit is expected to continue to reduce its contribution going forwards as the underground operations ramp up.

### *Gold revenues*

Gold revenues for the first quarter of 2017 were \$37.3 million, up 4% from \$35.9 million in the same period in 2016 due mainly to a 2% increase in gold ounces sold and a 1% increase in the average gold realized price. Gold sold totaled 31,531 ounces in the first quarter of 2017, compared to 30,887 ounces in the same period in 2016. The achievement of commercial production of Wassa Underground at January 1, 2017 contributed to the gold revenues, however gold revenues attributable to the Wassa Main Pit declined due to the scheduled reduction of ore tonnes supplied from the Wassa Main Pit as described above. Wassa Underground contributed 11,482 ounces of gold at an average realized price of \$1,181 per ounce during the first quarter of 2017.

For the three months ended March 31, 2017, 36% of gold revenues at Wassa were attributable to Wassa Underground. Wassa gold revenues in the first quarter of 2016 were exclusively from the Wassa Main Pit. The realized gold price averaged \$1,181 per ounce in the first quarter of 2017, compared to \$1,164 per ounce for the same period in 2016.

### *Cost of sales excluding depreciation and amortization*

Cost of sales excluding depreciation and amortization was \$33.1 million for the first quarter of 2017, compared to \$23.8 million incurred during the same period in 2016. The higher cost of sales in the first quarter of 2017 was a result of an increase in mining costs due primarily to the addition of the underground mining costs that were capitalized in 2016. Additionally, there was a \$3.7 million increase in inventory charges in the first quarter of 2017 compared to the same period in 2016 due to a drawdown of stockpiles at Wassa during the first quarter of 2017, and a \$0.5 million net realizable value adjustment recorded on inventory.

### *Depreciation and amortization*

Depreciation and amortization expense increased to \$5.3 million for the first quarter of 2017, compared to \$4.3 million for the same period in 2016 due to commencement of depreciation and amortization on Wassa Underground assets as commercial production was achieved on January 1, 2017.

### *Costs per ounce*

Cost of sales per ounce for the first quarter of 2017 totaled \$1,217, up 34% from \$908 in the same period in 2016. Cash operating cost per ounce for the first quarter of 2017 totaled \$942, up 33% from \$706 for the same period in 2016. The higher costs per ounce in the first quarter of 2017 as compared to the same period in 2016 were primarily a result of higher mining costs. Wassa's higher mining costs were largely due to transitioning into a new business model from solely operating an open pit operation to a combination of open pit and underground operations. Higher costs are expected to normalize again as the open pit and underground operations are optimized. During the quarter, Wassa drew down its open pit ore stockpile compared to a stockpile build-up in the first quarter of 2016 which also contributed to the higher costs.

### *Capital expenditures*

Capital expenditures for the first quarter of 2017 were \$3.0 million compared with \$8.5 million during the same period in 2016. Development capital expenditures were \$3.0 million for the first quarter of 2017 compared to \$7.7 million in the same period in 2016. Development capital expenditures in the first quarter of 2017 included \$1.7 million of expenditures relating to the development of Wassa Underground and \$1.0 million for the improvement of the tailings storage facility.

## PRESTEA OPERATIONS

Through a 90% owned subsidiary, Golden Star (Bogoso/Prestea) Limited, the Company owns and operates the Bogoso gold mining and processing operations, the Prestea mining operations located near the town of Prestea, Ghana. Prestea has a CIL processing facility, which is suitable for treating non-refractory gold ore (the “non-refractory plant”) with capacity of up to 1.5 million tonnes per annum.

The Prestea mining operations consist of an underground mine, neighbouring open pit, oxide deposits and associated support facilities. Prestea currently processes ores from the Prestea Open Pits through the non-refractory plant. Ore feed from the open pit operations commenced in the third quarter of 2015. The Prestea Underground Mine is currently being refurbished and commercial production is expected to be achieved in the third quarter of 2017.

		Three Months Ended March 31,	
		2017	2016
<b>PRESTEA FINANCIAL RESULTS</b>			
Revenue	\$'000	\$ 31,295	\$ 25,118
Mine operating expenses	\$'000	16,828	17,412
Severance charges	\$'000	—	(184)
Royalties	\$'000	1,610	1,296
Operating costs to metals inventory	\$'000	(111)	(1,243)
Cost of sales excluding depreciation and amortization	\$'000	18,327	17,281
Depreciation and amortization	\$'000	3,135	1,517
Mine operating margin	\$'000	\$ 9,833	\$ 6,320
Capital expenditures	\$'000	13,670	7,376
<b>PRESTEA OPERATING RESULTS</b>			
Ore mined	t	340,539	383,177
Waste mined	t	583,062	1,145,325
Ore processed	t	388,530	362,302
Grade processed	g/t	2.31	2.21
Recovery	%	88.9	84.4
Gold produced	oz	26,446	21,944
Gold sold	oz	26,613	21,782
Cost of sales per ounce <sup>1</sup>	\$/oz	806	863
Cash operating cost per ounce <sup>1</sup>	\$/oz	628	742

<sup>1</sup> See "Non-GAAP Financial Measures" section for a reconciliation of cost of sales per ounce and cash operating cost per ounce to cost of sales excluding depreciation and amortization.

### For the three months ended March 31, 2017 compared to three months ended March 31, 2016

#### Production

Prestea gold production was 26,446 ounces for the first quarter of 2017, a 21% increase from the 21,944 ounces produced during the same period in 2016 due to higher throughput, higher ore grade processed and higher recovery. The higher ore grade processed was a result of better ore grade from mining in a higher ore grade zone.

#### Gold revenues

Gold revenues for the first quarter of 2017 were \$31.3 million, up 25% from \$25.1 million in the same period in 2016 as a result of a 22% increase in gold sales and a 2% increase in average realized gold price. The realized gold price averaged \$1,176 per ounce in the first quarter of 2017, compared to \$1,153 per ounce in the same period in 2016. Gold sold totaled 26,613 ounces in the first quarter of 2017, compared to 21,782 ounces in the same period in 2016.

### *Cost of sales excluding depreciation and amortization*

Cost of sales excluding depreciation and amortization was \$18.3 million for the first quarter of 2017, up 6% from \$17.3 million for the same period in 2016. Even though mine operating expenses declined 3% in the first quarter of 2017 compared to the same period in 2016, cost of sales excluding depreciation and amortization were higher due to an increase in royalty costs and a lower build up of inventories. Mine operating expenses were lower in the first quarter of 2017 due to lower mining costs as a result of a better strip ratio compared to the same period in 2016.

### *Depreciation and amortization*

Depreciation and amortization expense increased to \$3.1 million for the first quarter of 2017, compared to \$1.5 million for the same period in 2016. The higher depreciation and amortization in the first quarter of 2017 was due to higher production and lower reserve base for Prestea Open Pits compared to 2016.

### *Costs per ounce*

Cost of sales per ounce for the first quarter of 2017 totaled \$806, down 7% from \$863 for the same period in 2016. Cash operating cost per ounce was \$628 for the first quarter of 2017, down 15% from \$742 for the same period in 2016. The lower cost of sales per ounce and cash operating cost per ounce were due to an increase in gold sold in the first quarter of 2017 compared to the same period in 2016.

### *Capital expenditures*

Capital expenditures for the first quarter of 2017 were \$13.7 million compared to \$7.4 million incurred during the same period in 2016. The increase relates primarily to an increase in development capital expenditures, which totaled \$10.9 million in the first quarter of 2017 compared to \$6.2 million for the same period in 2016. Development capital expenditures in the first quarter of 2017 included \$10.3 million related to the development of the Prestea Underground Mine.

## **SUMMARIZED QUARTERLY FINANCIAL RESULTS**

	Three Months Ended,							
(Stated in thousands of U.S dollars except per share data)	Q1 2017	Q4 2016	Q3 2016	Q2 2016	Q1 2016	Q4 2015	Q3 2015	Q2 2015
Revenues	\$ 68,545	\$ 53,255	\$ 55,511	\$ 51,457	\$61,067	\$56,420	\$ 56,452	\$ 65,796
Cost of sales excluding depreciation and amortization	51,406	43,994	44,608	42,956	41,058	39,354	55,199	78,738
Net (loss)/income	(250)	2,551	(23,792)	(22,836)	2,314	14,217	(8,526)	(68,988)
Net income/(loss) attributable to shareholders of Golden Star	170	3,446	(23,110)	(22,034)	2,051	13,781	(6,832)	(61,503)
Adjusted net income/(loss) attributable to Golden Star shareholders <sup>1</sup>	3,411	64	1,148	1,433	8,538	7,003	(11,205)	(15,727)
Income/(loss) per share attributable to Golden Star shareholders - basic and diluted	0.00	0.01	(0.07)	(0.08)	0.01	0.05	(0.03)	(0.24)
Adjusted income/(loss) per share attributable to Golden Star shareholders - basic <sup>1</sup>	0.01	0.00	0.01	0.01	0.03	0.03	(0.04)	(0.07)

<sup>1</sup> See "Non-GAAP Financial Measures" section for a reconciliation of adjusted net income/(loss) attributable to Golden Star shareholders and adjusted income/(loss) per share attributable to Golden Star shareholders to net income/(loss) attributable to Golden Star shareholders and income/(loss) per share attributable to Golden Star shareholders.

## **USE OF PROCEEDS FROM FINANCING**

On February 7, 2017, the Company completed a bought deal public offering which resulted in the issuance of 31,363,950 common shares, including 4,090,950 common shares issued upon full exercise of the over allotment option, at a price CAD\$1.10 per share for net proceeds of \$24.5 million.

The Company intends to use the net proceeds from the offering to fund exploration projects on the Company's properties, capital expenditures at Wassa and Prestea, the partial repayment of the Company's 5% Convertible Debentures and working capital and general corporate purposes.

## **LIQUIDITY AND FINANCIAL CONDITION**

The Company held \$36.5 million in cash and cash equivalents as of March 31, 2017, up from \$21.8 million at December 31, 2016. During the three months ended March 31, 2017, operations provided \$9.4 million, investing activities used \$18.4 million and financing activities provided \$23.7 million of cash.

Before working capital changes, operations provided \$17.7 million of operating cash flow during the three months ended March 31, 2017, compared to \$10.8 million in the same period in 2016. Cash provided by operations before working capital changes included a \$10.0 million advance payment received from RGLD during the first quarter of 2017. This was offset by a decrease of \$2.9 million in mine operating margin excluding depreciation and amortization in the first quarter of 2017 compared to the same period in 2016.

Working capital used \$8.3 million during the three months ended March 31, 2017, compared to \$9.8 million in the same period in 2016. The working capital changes in the first quarter of 2017 included a \$8.3 million decrease in accounts payable and accrued liabilities, a \$1.8 million increase in inventory, a \$1.3 million increase in prepaid and other, offset by a \$3.1 million decrease in accounts receivable.

Investing activities used \$18.4 million during the first quarter of 2017, which included \$10.3 million on the development of the Prestea Underground Mine, \$2.5 million on the development of the Mampon property, \$1.7 million on the development of the Wassa Underground Mine, \$1.0 million on the expansion of the tailings storage facility at Wassa and \$0.7 million on the Prestea Open Pit mines.

Financing activities provided \$23.7 million cash in the first quarter of 2017 compared to \$0.7 million in the same period in 2016. Financing activities for the three months ended March 31, 2017 included net proceeds of \$24.5 million from the bought deal public offering in February 2017 and \$0.8 million principal repayments of debt.

## **LIQUIDITY OUTLOOK**

As of March 31, 2017, the Company had \$36.5 million in cash and a working capital deficit of \$50.1 million compared to \$21.8 million in cash and a working capital deficit of \$60.5 million at December 31, 2016. In addition to cash operating costs, the Company pays a 5% royalty to the Government of Ghana, reclamation expenditures and corporate general and administration expenditures.

The Company expects to incur \$62.5 million on capital expenditures during 2017, of which approximately \$42.2 million is development capital expenditure and approximately \$20.3 million is sustaining capital expenditure. The \$42.2 million of development capital expenditure includes the expanded exploration budget which was increased to \$6.5 million.

The Company's debt repayment and servicing obligation for 2017 are expected to total approximately \$23.7 million, which includes a payment of \$13.6 million in principal amount of the 5% Convertible Debentures due on June 1, 2017. Beginning with the three months ending June 30, 2017, the excess cash flow provision of the Royal Gold loan comes into effect. The excess cash flow provision requires the Company to make mandatory repayments of 25% of excess cash flow in 2017 as defined in the Royal Gold loan agreement.

In March 2017, the Company through its subsidiary Golden Star (Wassa) Limited signed a commitment letter with Ecobank Ghana Limited regarding a \$25 million secured facility (see "Corporate Developments" section for details). The Company has twelve months from the date of the commitment letter to make drawdowns on the facility. At May 3, 2017, the Company has not made any drawdown.

Based on the Company's cash balance together with the operating cash flow that the Company anticipates generating in 2017 and the undrawn Ecobank Loan III, the Company believes that it will have sufficient cash available to support its 2017 operations and mandatory expenditures. However, operating cash flow may decline in certain circumstances, most of which are beyond the Company's control, such as decreases in gold prices or increases in the cost of raw materials and inputs used by the Company to produce gold.



## TABLE OF CONTRACTUAL OBLIGATIONS

(Stated in thousands of U.S dollars)	Payment due by period				
	Less than 1 Year	1 to 3 years	4 to 5 years	More than 5 Years	Total
Accounts payable and accrued liabilities	\$ 85,811	\$ —	\$ —	\$ —	\$ 85,811
Debt <sup>1,3</sup>	14,848	45,526	51,498	—	111,872
Interest on long term debt	4,734	11,529	7,210	—	23,473
Purchase obligations	11,723	—	—	—	11,723
Rehabilitation provisions <sup>2</sup>	5,445	20,079	24,405	33,254	83,183
<b>Total</b>	<b>\$ 122,561</b>	<b>\$ 77,134</b>	<b>\$ 83,113</b>	<b>\$ 33,254</b>	<b>\$ 316,062</b>

<sup>1</sup> Includes the outstanding repayment amounts from the 5% Convertible Debentures maturing on June 1, 2017, the 7% Convertible Debentures maturing on August 15, 2021, the loan from Royal Gold, the finance leases and the Vendor agreement.

<sup>2</sup> Rehabilitation provisions indicates the expected undiscounted cash flows for each period.

<sup>3</sup> Beginning with the three months ending June 30, 2017, the excess cash flow provision of the Royal Gold loan comes into effect. The excess cash flow provision as defined in the Royal Gold loan agreement requires the Company to make mandatory repayments of 25% of excess cash flow for the remainder of 2017 and mandatory repayments of 50% excess cash flow beginning 2018 until maturity. As excess cash flow is dependent upon factors beyond the Company's control such as gold price, no excess cash flow repayments have been considered. The table of contractual obligations shows the total principal amount settled at maturity. Interest payments on the Royal Gold loan are based on the average daily London Bullion Market Association ("LBMA") gold price multiplied by 62.5% divided by 10,000 to a maximum interest rate of 11.5% per annum. The estimated interest payments are calculated based on \$1,200 per ounce LBMA gold price.

## RELATED PARTY TRANSACTIONS

There were no material related party transactions in the three months ended March 31, 2017 and 2016 other than compensation of key management personnel which is presented in the table below. Key management personnel are defined as members of the Board of Directors and certain senior officers. Compensation of key management personnel are made on terms equivalent to those prevailing in an arm's length transaction.

	Three Months Ended March 31,	
	2017	2016
Salaries, wages, and other benefits	\$ 786	\$ 571
Bonuses	328	246
Share-based compensation	4,066	2,991
	<u>\$ 5,180</u>	<u>\$ 3,808</u>

## OFF-BALANCE SHEET ARRANGEMENTS

The Company has no material off-balance sheet arrangements.

## NON-GAAP FINANCIAL MEASURES

In this MD&A, we use the terms "cash operating cost", "cash operating cost per ounce", "all-in sustaining costs", "all-in sustaining costs per ounce", "adjusted net income attributable to Golden Star shareholders", "adjusted income per share attributable to Golden Star shareholders", "cash provided by operations before working capital changes", and "cash provided by operations before working capital changes per share - basic".

"Cost of sales excluding depreciation and amortization" as found in the statements of operations includes all mine-site operating costs, including the costs of mining, ore processing, maintenance, work-in-process inventory changes, mine-site overhead as well as production taxes, royalties, and by-product credits, but excludes exploration costs, property holding costs, corporate office general and administrative expenses, foreign currency gains and losses, gains and losses on asset sales, interest expense, gains and losses on derivatives, gains and losses on investments and income tax expense/benefit.

"Cash operating cost" for a period is equal to "Cost of sales excluding depreciation and amortization" for the period less royalties, the cash component of metals inventory net realizable value adjustments and severance charges, and "cash operating cost per ounce" is that amount divided by the number of ounces of gold sold (excluding pre-commercial production ounces sold) during the period. We use cash operating cost per ounce as a key operating metric. We monitor this measure monthly, comparing each



month's values to prior periods' values to detect trends that may indicate increases or decreases in operating efficiencies. We provide this measure to investors to allow them to also monitor operational efficiencies of the Company's mines. We calculate this measure for both individual operating units and on a consolidated basis. Since cash operating costs do not incorporate revenues, changes in working capital and non-operating cash costs, they are not necessarily indicative of operating profit or cash flow from operations as determined under IFRS. Changes in numerous factors including, but not limited to, mining rates, milling rates, ore grade, gold recovery, costs of labor, consumables and mine site general and administrative activities can cause these measures to increase or decrease. We believe that these measures are similar to the measures of other gold mining companies, but may not be comparable to similarly titled measures in every instance.

"All-in sustaining costs" commences with cash operating costs and then adds metals net realizable value adjustment, royalties, sustaining capital expenditures, corporate general and administrative costs (excluding non-cash share-based compensation expenses), and accretion of rehabilitation provision. "All-in sustaining costs per ounce" is that amount divided by the number of ounces of gold sold (excluding pre-commercial production ounces sold) during the period. This measure seeks to represent the total costs of producing gold from current operations, and therefore it does not include capital expenditures attributable to projects or mine expansions, exploration and evaluation costs attributable to growth projects, income tax payments, interest costs or dividend payments. Consequently, this measure is not representative of all of the Company's cash expenditures. In addition, the calculation of all-in sustaining costs does not include depreciation expense as it does not reflect the impact of expenditures incurred in prior periods. Therefore, it is not indicative of the Company's overall profitability. Non-cash share-based compensation expenses are now also excluded from the calculation of all-in sustaining costs as the Company believes that such expenses may not be representative of the actual payout on equity and liability based awards. Non-cash share-based compensation expenses were previously included in the calculation of all-in sustaining costs. The Company has presented comparative figures to conform with the computation of all-in sustaining costs as currently calculated by the Company.

The Company believes that "all-in sustaining costs" will better meet the needs of analysts, investors and other stakeholders of the Company in understanding the costs associated with producing gold, understanding the economics of gold mining, assessing the operating performance and also the Company's ability to generate free cash flow from current operations and to generate free cash flow on an overall Company basis. Due to the capital intensive nature of the industry and the long useful lives over which these items are depreciated, there can be a disconnect between net earnings calculated in accordance with IFRS and the amount of free cash flow that is being generated by a mine. In the current market environment for gold mining equities, many investors and analysts are more focused on the ability of gold mining companies to generate free cash flow from current operations, and consequently the Company believes these measures are useful non-IFRS operating metrics ("non-GAAP measures") and supplement the IFRS disclosures made by the Company. These measures are not representative of all of Golden Star's cash expenditures as they do not include income tax payments or interest costs. Non-GAAP measures are intended to provide additional information only and do not have standardized definitions under IFRS and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. These measures are not necessarily indicative of operating profit or cash flow from operations as determined under IFRS. The table below reconciles these non-GAAP measures to the most directly comparable IFRS measures and, where applicable, previous periods have been recalculated to conform to the current definition.

The table below reconciles consolidated cost of sales excluding depreciation and amortization to cost of sales per ounce, cash operating cost per ounce and all-in sustaining costs per ounce:

	Three Months Ended March 31,	
	2017	2016
(Stated in thousands of U.S dollars except cost per ounce data)		
<b>Cost of sales excluding depreciation and amortization</b>	\$ 51,406	\$ 41,058
Depreciation and amortization	8,439	5,796
<b>Cost of sales</b>	<u>\$ 59,845</u>	<u>\$ 46,854</u>
<b>Cost of sales excluding depreciation and amortization</b>	\$ 51,406	\$ 41,058
Severance charges	(954)	71
Royalties	(3,523)	(3,160)
Metals inventory net realizable value adjustment	(505)	—
<b>Cash operating costs</b>	<u>46,424</u>	<u>37,969</u>
Royalties	3,523	3,160
Metals inventory net realizable value adjustment	505	—
Accretion of rehabilitation provision	311	342
General and administrative costs, excluding share-based compensation	3,277	2,878
Sustaining capital expenditures	2,774	2,015
<b>All-in sustaining costs</b>	<u>\$ 56,814</u>	<u>\$ 46,364</u>
Ounces sold	58,144	52,669
Cost per ounce measures (\$/oz):		
Cost of sales per ounce	1,029	890
Cash operating cost per ounce	798	721
All-in sustaining cost per ounce	977	880

The tables below reconcile cost of sales excluding depreciation and amortization to cash operating costs per ounce for each of the operating mines:

	Three Months Ended March 31, 2017		
	Wassa	Prestea	Combined
(Stated in thousands of U.S dollars except cost per ounce data)			
<b>Cost of sales excluding depreciation and amortization</b>	\$ 33,079	\$ 18,327	\$ 51,406
Depreciation and amortization	5,304	3,135	8,439
<b>Cost of sales</b>	<u>\$ 38,383</u>	<u>\$ 21,462</u>	<u>\$ 59,845</u>
<b>Cost of sales excluding depreciation and amortization</b>	\$ 33,079	\$ 18,327	\$ 51,406
Severance charges	(954)	—	(954)
Royalties	(1,913)	(1,610)	(3,523)
Metals inventory net realizable value adjustment	(505)	—	(505)
<b>Cash operating costs</b>	<u>\$ 29,707</u>	<u>\$ 16,717</u>	<u>\$ 46,424</u>
<b>Ounces sold</b>	31,531	26,613	58,144
<b>Cost of sales per ounce</b>	\$ 1,217	\$ 806	\$ 1,029
<b>Cash operating cost per ounce</b>	\$ 942	\$ 628	\$ 798

	Three Months Ended March 31, 2016		
	Wassa	Prestea	Combined
(Stated in thousands of U.S dollars except cost per ounce data)			
<b>Cost of sales excluding depreciation and amortization</b>	\$ 23,777	\$ 17,281	\$ 41,058
Depreciation and amortization	4,279	1,517	5,796
<b>Cost of sales</b>	<u>\$ 28,056</u>	<u>\$ 18,798</u>	<u>\$ 46,854</u>
<b>Cost of sales excluding depreciation and amortization</b>	\$ 23,777	\$ 17,281	\$ 41,058
Severance charges	(113)	184	71
Royalties	(1,864)	(1,296)	(3,160)
<b>Cash operating costs</b>	<u>\$ 21,800</u>	<u>\$ 16,169</u>	<u>\$ 37,969</u>
<b>Ounces sold</b>	30,887	21,782	52,669
<b>Cost of sales per ounce</b>	\$ 908	\$ 863	\$ 890
<b>Cash operating cost per ounce</b>	\$ 706	\$ 742	\$ 721

"Cash provided by operations before working capital changes" is calculated by subtracting the "Changes in working capital" from "Net cash provided by operating activities" as found in the statements of cash flows. "Cash provided by operations before working capital changes per share - basic" is "Cash provided by operations before working capital changes" divided by the basic weighted average number of shares outstanding for the period.

We use cash operating cost per ounce and cash provided by operations before working capital changes as key operating metrics. We monitor these measures monthly, comparing each month's values to prior periods' values to detect trends that may indicate increases or decreases in operating efficiencies. These measures are also compared against budget to alert management of trends that may cause actual results to deviate from planned operational results. We provide these measures to investors to allow them to also monitor operational efficiencies of the mines owned by the Company.

Cash operating cost per ounce and cash provided by operations before working capital changes should be considered as non-GAAP financial measures as defined in the Canadian securities laws and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. There are material limitations associated with the use of such non-GAAP measures. Since these measures do not incorporate revenues, changes in working capital and non-operating cash costs, they are not necessarily indicative of operating profit or cash flow from operations as determined under IFRS. Changes in numerous factors including, but not limited to, mining rates, milling rates, ore grade, gold recovery, costs of labor, consumables and mine

site general and administrative activities can cause these measures to increase or decrease. We believe that these measures are similar to the measures of other gold mining companies, but may not be comparable to similarly titled measures in every instance.

Beginning in this reporting period, the Company began reporting cost of sales per ounce in addition to the previously disclosed cash operating cost per ounce. It is the Company's belief that this new metric are important for a comprehensive disclosure of the financial and operational results of the Company as this metric is now used by certain peer companies in the gold mining industry.

### Adjusted net income attributable to Golden Star shareholders

The table below shows the reconciliation of net income attributable to Golden Star shareholders to adjusted net income attributable to Golden Star shareholders and adjusted income per share attributable to Golden Star shareholders:

(Stated in thousands of U.S dollars except per share data)	Three Months Ended March 31,	
	2017	2016
Net income attributable to Golden Star shareholders	\$ 170	\$ 2,051
Add back:		
Share-based compensation expenses	4,715	4,344
(Gain)/loss on fair value of financial instruments	(2,498)	2,207
Loss on conversion of 7% Convertible Debentures	165	—
Severance charges	954	(71)
	3,506	8,531
Adjustments attributable to non-controlling interest	(95)	7
Adjusted net income attributable to Golden Star shareholders	\$ 3,411	\$ 8,538
Adjusted income per share attributable to Golden Star shareholders - basic	\$ 0.01	\$ 0.03
Weighted average shares outstanding - basic (millions)	359.0	259.9

In order to indicate to stakeholders the Company's earnings excluding the non-cash (gain)/loss on fair value of financial instruments, non-cash share-based compensation expenses, loss on conversion of 7% Convertible Debentures and severance charges, the Company calculates "adjusted net income attributable to Golden Star shareholders" and "adjusted income per share attributable to Golden Star shareholders" to supplement the condensed interim consolidated financial statements. The adjusted income per share attributable to Golden Star shareholders is calculated using the weighted average number of shares outstanding using the basic method of earnings per share.

Adjusted net income attributable to Golden Star shareholders and adjusted income per share attributable to Golden Star shareholders should be considered as non-GAAP financial measures as defined in the Canadian securities laws and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with GAAP. There are material limitations associated with the use of such non-GAAP measures. Since these measures do not incorporate all non-cash expense and income items, changes in working capital and non-operating cash costs, they are not necessarily indicative of operating profit or cash flow from operations as determined under IFRS. Changes in numerous factors including, but not limited to, our share price, risk free interest rates, gold prices, mining rates, milling rates, ore grade, gold recovery, costs of labor, consumables and mine site general and administrative activities can cause these measures to increase or decrease. The Company believes that these measures are similar to the measures of other gold mining companies, but may not be comparable to similarly titled measures in every instance.

### OUTSTANDING SHARE DATA

As of May 3, 2017, there were 376,165,952 common shares of the Company issued and outstanding, 16,769,212 stock options outstanding, 5,842,224 deferred share units outstanding, 5,000,000 warrants outstanding, 5% Convertible Debentures which are convertible into an aggregate of 8,249,091 common shares and 7% Convertible Debentures which are convertible into an aggregate of 57,220,000 common shares.

### CRITICAL ACCOUNTING JUDGMENTS, ESTIMATES AND ASSUMPTIONS

The critical accounting judgments, estimates and assumptions are disclosed in Note 4 of the audited consolidated financial statements for the year ended December 31, 2016.

## CHANGES IN ACCOUNTING POLICIES

The changes in accounting policies and standards, interpretations and amendments not yet effective are disclosed in Note 3 of the condensed interim consolidated financial statements for the three months ended March 31, 2017.

## FINANCIAL INSTRUMENTS

(Stated in thousands of U.S dollars)	Fair value at March 31, 2017	Basis of measurement	Associated risks
Cash and cash equivalents	\$ 36,455	Loans and receivables	Interest/Credit/Foreign exchange
Accounts receivable	4,159	Loans and receivables	Foreign exchange/Credit
Trade and other payables	80,007	Amortized cost	Foreign exchange/Interest
Warrants	3,179	Fair value through profit and loss	Market price
Equipment financing facility	520	Amortized cost	Interest
Finance leases	1,711	Amortized cost	Interest
5% Convertible Debentures	13,477	Fair value through profit and loss	Interest
7% Convertible Debentures	41,107	Amortized cost	Interest
Royal Gold loan, net of fees	18,575	Amortized cost	Interest
Vendor agreement	22,521	Amortized cost	Interest/Foreign exchange
Long term derivative liability	9,927	Fair value through profit and loss	Market price

**Loans and receivables** - Cash and cash equivalents and accounts receivables mature in the short term and approximate their fair values.

**Amortized costs** - Trade and other payables, the 7% Convertible Debentures, the Royal Gold loan, the vendor agreement, the equipment financing facility and the finance leases approximate their carrying values as the interest rates are comparable to current market rates. Carrying value of the vendor agreement has been discounted to reflect its fair value.

### Fair value through profit or loss

**Warrants** - The fair value of the warrants is estimated using a Black-Scholes model. For the three months ended March 31, 2017, a revaluation loss of \$0.4 million was recorded.

**5% Convertible Debentures** - The debt component of the 5% Convertible Debentures is valued based on discounted cash flows and the conversion feature is valued using a Black-Scholes model. The risk-free interest rate used in the fair value computation is the interest rate on the US treasury rate with maturity similar to the remaining life of the 5% Convertible Debentures. The discount rate used is determined by adding the risk premium to the risk-free interest rate. A market-based volatility rate was also applied to the fair value computation. For the three months ended March 31, 2017, a revaluation loss of \$0.2 million was recorded.

**Long term derivative liability** - The fair value of the embedded derivative liability relating to the 7% Convertible Debentures is estimated using a convertible note valuation model. For the three months ended March 31, 2017, a revaluation gain of \$3.1 million and a gain on conversion of \$2.1 million were recorded.

## DISCLOSURES ABOUT RISKS

The Company's exposure to significant risks include, but are not limited to, the following risks: change in interest rates on our debt, change in foreign currency exchange rates, commodity price fluctuations, liquidity risk and credit risk. In recognition of the Company's outstanding accounts payable, the Company cannot guarantee that vendors or suppliers will not suspend or deny delivery of products or services to the Company. For a complete discussion of the risks, refer to the Company's Annual Information Form for the year ended December 31, 2016 available on the SEDAR website at [www.sedar.com](http://www.sedar.com).

## CONTROLS AND PROCEDURES

### Disclosure Controls and Procedures

The Company's management, with the participation of its President and Chief Executive Officer and Executive Vice President and Chief Financial Officer, has evaluated the effectiveness of the Company's disclosure controls and procedures. Based upon the results of that evaluation, the Company's President and Chief Executive Officer and Executive Vice President and Chief Financial

Officer have concluded that, as of March 31, 2017, the Company's disclosure controls and procedures were effective to provide reasonable assurance that the information required to be disclosed by the Company in reports it files is recorded, processed, summarized and reported, within the appropriate time periods and is accumulated and communicated to management, including the President and Chief Executive Officer and Executive Vice President and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

### **Management's Report on Internal Control Over Financial Reporting**

The Company's management, with the participation of its President and Chief Executive Officer and Executive Vice President and Chief Financial Officer, are responsible for establishing and maintaining adequate internal control over financial reporting. Under the supervision of the President and Chief Executive Officer and Executive Vice President and Chief Financial Officer, the Company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with IFRS. The Company's internal control over financial reporting includes policies and procedures that:

- pertain to the maintenance of records that accurately and fairly reflect, in reasonable detail, the transactions and dispositions of assets of the Company;
- provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with IFRS and that the Company's receipts and expenditures are made only in accordance with authorizations of management and the Company's directors; and
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the Company's assets that could have a material effect on the Company's consolidated financial statements.

The Company's management, including the President and Chief Executive Officer and Executive Vice President and Chief Financial Officer, believes that any disclosure controls and procedures or 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 control. The design of any control system also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Accordingly, because of the inherent limitations in a cost effective control system, misstatements due to error or fraud may occur and not be detected.

### **Changes in Internal Control Over Financial Reporting**

There has been no change in the Company's design of internal controls and procedures over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting during the period covered by this MD&A.

### **ADDITIONAL INFORMATION**

Additional information regarding the Company, including the Company's Annual Information Form for the year ended December 31, 2016, is available under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com).