

GOLDEN STAR

The logo for Golden Star, featuring a stylized eight-pointed star with a white center and gold points, positioned between the letters 'T' and 'R' of the word 'STAR'.

Management's Discussion and Analysis

For the Three and Six Months Ended June 30, 2020

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

This Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") 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 MD&A should be read in conjunction with the Company's condensed interim consolidated financial statements and related notes for the three and six months ended June 30, 2020 (the "Financial Statements"), which are prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board ("IFRS"). This MD&A includes information available to, and is dated, July 28, 2020. Unless noted otherwise, all currency amounts are stated in U.S. dollars and all financial 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 or grammatical variation thereof. Forward-looking information and statements in this MD&A include, but are not limited to, information or statements with respect to: gold production, cash operating costs, and all-in sustaining costs estimates and guidance for 2020 on a consolidated and per mine basis; the expected allocation of the Company's sources of production; sustaining and development capital expenditure estimates and guidance for 2020 on a consolidated and per mine basis; the Company's achievement of 2020 consolidated guidance; the ability to expand the Company and its production profile through the exploration and development of its existing mines, and through strategic value accretive acquisitions; expected grade and mining rates for 2020; the intended expansion of production and reduction of costs; estimated costs and timing of the development of new mineral deposits and sources of funding for such development; the sources of gold production at Wassa Underground and Prestea Underground during 2020; the anticipated delivery of ore pursuant to delivery obligations under the Stream Agreement; the ability to continue to refine doré at the South African refinery and ship gold across borders; the mining rate and grade from Wassa Underground; the processing of low grade stockpiles at Wassa until the first half of 2021; implementation of the brownfield and greenfield exploration programs at Wassa and Prestea, including the focus on near mine targets in and around Wassa and on regional exploration targets within the Wassa-HBB Corridor, and the timing thereof; the restart of field-based exploration activities at the end of July 2020, including the focus on drilling targets within the HBB Project area and diamond core drilling of underground targets at Wassa; the ability to materially increase production at Wassa through development capital investments; the use of the non-hedge gold collar contracts; the intended reduction of costs for the next twelve months; the delivery of a range of operational initiatives that improve the consistency of the operations and visibility of the longer-term potential of the operations; the timing for rehabilitation work and the expected discounted rehabilitation costs; the ability of the Company to repay the 7% Convertible Debentures when due or to restructure them or make alternate arrangements; the securing of adequate supply chains for key consumables and medical supplies; L17 development at Prestea Underground providing greater flexibility and scale in combination with higher grades expected from L24 at Prestea Underground; improved underground mining rates at Prestea towards the latter part of the second half of 2020; the Company having sufficient cash available to support its operations and mandatory expenditures for the next twelve months; the ability of the Company to obtain waivers of credit facility covenants if needed; the Company continuing as a going concern including the ability of the Company to realize its assets and discharge its liabilities in the normal course of business; the Company's ability to generate sufficient free cash flow and/or raise additional financing; the potential impact of the COVID-19 pandemic ("COVID-19") on the Company's operations and the ability to mitigate such impact; the ability to satisfy the conditions to closing set forth in the Prestea Sale Agreement (as defined hereinafter), including the approval of the Minister of Lands and Natural Resources of Ghana, the restructuring of the Royal Gold Streaming Agreement (as defined hereinafter) and Macquarie Credit Facility (as defined hereinafter); the completion of the Prestea Sale Transaction (as defined hereinafter) and the timing thereof; the receipt by Golden Star of the deferred payments on July 31, 2021 and July 31, 2023 as per the terms of the Prestea Sale Agreement, and the timing thereof; the receipt by Golden Star of the Contingent Payment (as defined hereinafter), and the potential timing and amount thereof; FGR's ability to deliver the Bogoso Sulfide Project (as defined hereinafter); the availability of mineral reserves in 2020 and 2021 based on the accuracy of the Company's updated mineral reserve and resource models; the ability to expand the mineral reserves of the Company through further drilling; the potential to increase the Company's mineral resources outside of its existing mineral resources footprint; the restart of field-based exploration activities and the timing thereof; the anticipated impact of increased exploration on current mineral resources and mineral reserves; the outcome of the class action complaint and related litigation; identification of acquisition and growth opportunities; relationships with local stakeholder communities; and the potential incurrence of further debt in the future.

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, ore type, the global economic climate including as a result of the continuing impact of COVID-19, 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; public health pandemics such as COVID-19, including risks associated with reliance on suppliers, the cost, scheduling and timing of gold shipments, uncertainties relating to its ultimate spread, severity and duration, and related adverse effects on the global economy and financial markets; 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, 2019 (filed on March 27, 2020). 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 S. Mitchel Wasel, BSc Geology, and Matt Varvari who are Qualified Persons pursuant to National Instrument 43-101 ("NI 43-101"). Mr. Wasel is Vice President Exploration for Golden Star and an active member of the Australasian Institute of Mining and Metallurgy. Mr. Varvari is Vice President, Technical Services for Golden Star. 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 accordance 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, 2019 and the following current technical reports for those properties available at www.sedar.com: (i) Wassa - "NI 43-101 Technical Report on Resources and Reserves, Golden Star Resources, Wassa Gold Mine, Ghana" effective date

December 31, 2018; and (ii) Prestea Underground - “NI 43-101 Technical Report on Resources and Reserves, Golden Star Resources, Bogoso/Prestea Gold Mine, Ghana” effective date December 31, 2017.

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 United States 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 mineral resources or indicated mineral resources will ever be upgraded into mineral reserves.

OVERVIEW OF GOLDEN STAR

Golden Star is an established, African-focused gold producer that holds a 90% interest in two producing gold mines in Ghana.

The Wassa Complex (“Wassa”) became an underground-only operation in January 2017. The Prestea Complex (“Prestea”) comprises the Prestea Open Pits (which ceased operations during Q2 2020) and the Prestea Underground Mine (“Prestea Underground”) - it is now an underground-only operation. The Wassa Underground Mine (“Wassa Underground”) achieved commercial production on January 1, 2017 and Prestea Underground achieved commercial production on February 1, 2018.

Golden Star’s objective is to grow into a best-in-class, mid-tier gold producer. We aim to expand the Company and its production profile through the exploration and development of our existing mines, particularly Wassa, and through strategic value accretive acquisitions.

Since winning the Prospectors & Developers Association of Canada's 2018 Environmental and Social Responsibility Award, Golden Star has remained committed to leaving a positive and sustainable legacy in its areas of operation.

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 and Ghana, and with the SEC in the United States.

SUMMARY OF OPERATING AND FINANCIAL RESULTS

		Three Months Ended June 30,		Six Months Ended June 30,	
		2020	2019	2020	2019
CONSOLIDATED OPERATING SUMMARY					
Total open pit tonnes mined	t	117,731	377,700	407,314	456,644
Total underground tonnes mined	t	594,578	429,498	1,202,608	852,360
Total tonnes mined	t	712,309	807,198	1,609,922	1,309,004
Total ore tonnes mined	t	470,475	507,570	1,000,360	605,587
Total tonnes processed	t	595,762	576,774	1,166,788	1,077,896
Grade processed	g/t	2.82	2.69	2.80	3.11
Recovery	%	94.0	92.6	93.5	93.3
Total gold produced	oz	50,643	48,422	100,608	101,706
Total gold sold	oz	52,675	48,742	98,276	102,238
Average realized gold price	\$/oz	1,626	1,270	1,557	1,263
Cost of sales per ounce - Consolidated ¹	\$/oz	1,009	1,093	1,047	1,016
Cash operating cost per ounce - Consolidated ¹	\$/oz	827	886	842	805
All-in sustaining cost per ounce - Consolidated ¹	\$/oz	1,186	1,212	1,193	1,089

¹ 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 excluding depreciation and amortization.

- **Total gold produced totaled 50,643 ounces in the second quarter of 2020 (“Q2 2020”), 2,221 ounces (5%) higher than the 48,422 ounces in the second quarter of 2019 (“Q2 2019”).** Wassa produced 44,777 ounces, a 20% improvement on the corresponding period in 2019 due to increased underground mining productivity combined with increased grades compared to the first quarter of 2020 (“Q1 2020”). Furthermore, the increased processing of lower grade stockpile material contributed favorably to total production. Prestea produced 5,866 ounces which was 47% lower than Q2 2019 and the quarter was adversely affected by a combination of factors including (i) the lower contribution from low grade satellite open pit activities which ceased during the month of May 2020; (ii) short-term operational constraints as a result of the isolation of operator personnel and associated individual contacts who tested positive for COVID-19 that negatively impacted on stoping activities; and (iii) continued dilution on 24 Level driving lower than expected mining grades. On a consolidated basis, the ore grade processed during Q2 2020 was 5% higher than the corresponding period in 2019 while total tonnes processed were 3% higher due primarily to Wassa's increased mining performance and the lower contribution from low grade Prestea open pit activities.

Total gold produced totaled 100,608 ounces for the six months ended June 30, 2020 ("H1 2020"). This represented a 1% decrease to the gold production for the six months ended June 30, 2019 ("H1 2019"). Wassa produced 85,108 ounces, 6% higher than H1 2019 which was offset by 28% lower production from Prestea of 15,500 ounces. Wassa's performance was marked by an increase in the mining rate resulting in significant higher volumes mined and processed while Prestea's performance was underpinned by a lower contribution from satellite open pit activities which adversely impacted on production.

- **Total gold sold amounted to 52,675 ounces for Q2 2020, 3,933 ounces (8%) higher than Q2 2019.** The increase in gold sold was driven by (i) the higher production base predominantly from Wassa; and (ii) the partial roll over of gold ounces produced in Q1 2020 and only subsequently sold in Q2 2020 due to logistical challenges resulting from COVID-19 travel restrictions that impacted on our ability to transport gold through the use of commercial flights. This resulted in 2,032 ounces sold in excess of production with a further 2,901 finished gold ounces on hand to be deferred into the third quarter of 2020 ("Q3 2020").

Total gold sold totaled 98,276 ounces for H1 2020, 3,962 ounces or 4% lower than H1 2019 mainly due to the deferral of shipment of the last pour in June 2020 and a slightly lower production base.

- **All-in sustaining cost per ounce ("AISC") (see "Non-GAAP Financial Measures" section) of \$1,186 per ounce reflects a decrease of 2% compared to the Q2 2019 reported AISC of \$1,212 per ounce and cash operating costs per ounce (see "Non-GAAP Financial Measures" section) of \$827 reflect a 7% decrease over Q2 2019 of \$886 per ounce.** Cash operating costs per ounce benefited from the combination of (i) the higher production base from Wassa; (ii) lower open pit mining activities at Prestea which favorably impacted on open pit mining and processing costs; and (iii) lower energy related costs incurred due to the decline in global oil markets and the government power tariff rebate program in Ghana during Q2 2020. This was in part offset by (i) increased processing costs due to increased mining and stockpile volumes at Wassa; (ii) increased labour costs driven by year-on-year inflationary increases and increased headcount at Wassa; and (iii) increased gold transportation costs due to the use of private charters.

The decrease in AISC during the quarter when compared to Q2 2019 was driven by improved cash operating costs which were in part offset by (i) higher royalties due to higher realized prices; and (ii) increased sustaining capital expenditure predominantly at Wassa.

AISC increased by 10% from \$1,089 per ounce for H1 2019 to \$1,193 per ounce for H1 2020 and cash operating cost per ounce increased to \$842 per ounce from \$805 per ounce in H1 2019. Cash operating cost per ounce was adversely impacted by mainly the combination of (i) the lower sales base; and (ii) increased direct mining cost base due to increased labour costs, higher underground mining and processing volumes and increased general and administrative costs predominantly at Wassa. AISC was furthermore impacted by increased royalties and sustaining capital expenditure incurred. AISC calculated on the basis of gold ounces produced amounted to \$1,191 per ounce in H1 2020 compared to \$1,091 per ounce in H1 2019.

CONSOLIDATED FINANCIAL SUMMARY		Three Months Ended June 30,		Six Months Ended June 30,	
		2020	2019	2020	2019
Gold revenues	\$'000	85,630	61,915	153,001	129,172
Cost of sales excluding depreciation and amortization	\$'000	45,847	46,506	88,743	90,310
Depreciation and amortization	\$'000	7,289	6,749	14,158	13,611
Mine operating margin	\$'000	32,494	8,660	50,100	25,251
Corporate general and administrative expense ¹	\$'000	4,954	4,726	10,629	7,885
Loss/(gain) on fair value of financial instruments, net	\$'000	1,776	(424)	(2,286)	3,449
Finance expense, net	\$'000	3,771	3,602	7,134	7,149
Income tax expense	\$'000	13,971	5,278	22,206	12,480
Net income/(loss) attributable to Golden Star shareholders	\$'000	7,773	(9,036)	8,602	(10,960)
Adjusted net income/(loss) attributable to Golden Star shareholders ²	\$'000	9,471	(5,016)	8,249	(2,994)
Net income/(loss) per share attributable to Golden Star shareholders - basic	\$/share	0.07	(0.08)	0.08	(0.10)
Net income/(loss) per share attributable to Golden Star shareholders - diluted	\$/share	0.08	(0.08)	0.07	(0.10)
Adjusted income/(loss) per share attributable to Golden Star shareholders - basic ²	\$/share	0.09	(0.05)	0.08	(0.03)
Cash provided by operations	\$'000	20,201	2,183	23,750	1,593
Cash provided by operations before working capital changes ³	\$'000	27,105	591	40,456	15,499
Cash provided by operations per share - basic	\$/share	0.18	0.02	0.22	0.01
Cash provided by operations before working capital changes per share - basic ³	\$/share	0.25	0.01	0.37	0.14
Sustaining capital	\$'000	8,524	7,725	14,653	13,093
Development capital	\$'000	5,674	9,268	12,021	17,042
Total capital expenditures	\$'000	14,198	16,993	26,674	30,135

¹ The prior year number has been restated to reclassify the corporate severance costs to other expenses and excludes share-based compensation within corporate general and administrative expenses.

² 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-basic to net income/(loss) attributable to Golden Star shareholders.

³ 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/(used in) operations before working capital changes per share - basic.

- **Gold revenues totaled \$85.6 million in Q2 2020, \$23.7 million higher than \$61.9 million in Q2 2019.** The \$23.7 million increase comprises a 28% increase in the average realized gold price to \$1,626 per ounce and an 8% increase in gold sold to 52,675 ounces. Average Q2 2020 realized gold price per ounce for spot sales amounted to \$1,720 (Q2 2019 - \$1,319) and was assisted by macro-economic developments mostly around COVID-19 uncertainty whereas average realized gold price per ounce pursuant to the Company’s stream arrangement with RGLD Gold AG, a wholly-owned subsidiary of Royal Gold Inc., on Wassa and Prestea (the “Stream Agreement”), was \$836 (Q2 2019 - \$875). Higher gold volumes sold during the quarter was driven by the increased gold production base and the impact of the Q1 2020 deferred ounces which were produced in Q1 2020 and sold in Q2 2020 due to COVID-19 restrictions that adversely impacted on our shipment schedule at the end of Q1 2020.

	Three Months Ended June 30, 2020			Three Months Ended June 30, 2019		
	\$'000	Ounces	Realized price per ounce	\$'000	Ounces	Realized price per ounce
Revenue - Spot sales	80,923	47,042	1,720	57,202	43,358	1,319
Cash proceeds	1,922			1,407		
Deferred revenue recognized	2,785			3,306		
Revenue - Stream arrangement	4,707	5,633	836	4,713	5,384	875
Total	85,630	52,675	1,626	61,915	48,742	1,270

Gold revenues for H1 2020 amounted to \$153.0 million, up 18% compared to \$129.2 million in the same period in 2019. This was due to a 23% higher average realized gold price of \$1,557 per ounce assisted by global macro factors that benefited global gold markets, which was partly offset by 4% decrease in gold sold mainly due to the change in shipment scheduling following COVID-19 travel restrictions that adversely impacted on our shipment schedule as the last pour of June 2020 was only sold in Q3 2020.

	Six Months Ended June 30, 2020			Six Months Ended June 30, 2019		
	\$'000	Ounces	Realized price per ounce	\$'000	Ounces	Realized price per ounce
Revenue - Spot sales	144,487	87,919	1,643	119,406	91,075	1,311
Cash proceeds	3,392			2,913		
Deferred revenue recognized	5,122			6,853		
Revenue - Stream arrangement	8,514	10,357	822	9,766	11,163	875
Total	153,001	98,276	1,557	129,172	102,238	1,263

- **Cost of sales excluding depreciation and amortization in Q2 2020 totaled \$45.8 million compared to \$46.5 million in Q2 2019.** Mine operating expenses reduced by \$1.6 million to \$41.2 million compared to Q2 2019 primarily due to (i) lower energy costs as a result of the power tariff rebate program as part of the Government of Ghana's COVID-19 relief program and lower fuel prices due to a decline in global oil markets; and (ii) lower open pit mining and processing costs as a consequence of ceased satellite open pit activities at Prestea. This was partly offset by (i) increased mining and processing volumes at Wassa; (ii) higher gold transport costs as a result of private chartered flights; and (iii) increased labour costs due to increased headcount at Wassa and inflationary driven year-on-year increases. Other operating expenses include a credit for adjustments of \$3.0 million for change in estimates of accrued energy and staff costs. The charge for movement in inventory of \$2.4 million is \$2.0 million higher than Q2 2019 and relates primarily to the release of finished gold ounces during the quarter. The inventory write-down of \$0.8 million for Q2 2020 results from lower production basis at Prestea which has adversely impacted on inventory valuations and stock obsolescence at Wassa. Royalties of \$4.5 million for Q2 2020 increased by \$1.3 million compared to Q2 2019 in line with higher gold revenue.

Cost of sales excluding depreciation and amortization in H1 2020 amounted to \$88.7 million, a 2% decrease compared to the same period in 2019 mainly due to (i) the credit included in other operating expenses relating to the change in accrual estimates; (ii) the credit for the inventory movement as a result of an increase in finished goods inventory on hand in H1 2020; (iii) a reduction in inventory write-down; and (iv) energy associated costs savings. This was in part offset by (i) increased mining and processing volumes at Wassa; (ii) increased labour costs; (iii) increased general and administrative costs associated with mining license fees, insurance and gold transportation; and (iv) increased royalty costs.

- **Depreciation and amortization expense totaled \$7.3 million in Q2 2020 compared to \$6.7 million in Q2 2019.** Depreciation and amortization for H1 2020 amounted to \$14.2 million, a 4% increase compared to \$13.6 million in the same period in 2019. Higher depreciation and amortization expense for Q2 2020 and H1 2020 is mainly due to increased production and capital additions in 2019 rolled into the depreciable cost base at Wassa.
- **Corporate general and administrative expense totaled \$5.0 million in Q2 2020 compared to \$4.7 million in the same period in 2019.** The relocation of Golden Star's corporate office from Toronto, Canada to London, United Kingdom was completed during the quarter and the increase in corporate general and administrative expense for Q2 2020 is due primarily to duplicated labour costs, higher insurance and consulting fees incurred.

Corporate general and administrative expense for H1 2020 amounted to \$10.6 million, a 35% increase compared to \$7.9 million in the same period in 2019 due primarily to non-recurring costs incurred as part of the relocation of the corporate office from Toronto, Canada to London, United Kingdom. Non-recurring costs included (i) duplicated staff costs and

office-related expenditure; (ii) consulting fees specific to the transition and specific relocation; and (iii) recruitment expenses incurred associated with new London-based employees.

- **Finance expense totaled \$3.8 million in Q2 2020 compared to \$3.6 million in the same period in 2019.** Finance expense amounted to \$7.1 million in H1 2020 which was in line with H1 2019. The slight increase in Q2 2020 compared to the same period in 2019 was mainly due to a \$0.3 million decrease in interest income due to the fall in rates and a \$0.2 million increase in the amortization of deferred financing fees mainly on the \$60 million senior secured credit facility with Macquarie Bank Limited (the "Macquarie Credit Facility"). These were offset by a decrease in principal debt interest costs of \$0.3 million following the refinancing exercise in the fourth quarter of 2019 ("Q4 2019") which resulted in site level financing arrangements being replaced with the Macquarie Credit Facility that has a lower interest rate and has been affected by a decline in interest rate markets. Interest on the financing component of deferred revenue for Q2 2020 also reduced by \$0.2 million compared to Q2 2019 following the increase in the Company's resource and reserve estimates during 2019, which primarily related to Wassa.
- **The Company recorded a loss of \$1.8 million on the fair value of financial instruments in Q2 2020 compared to a \$0.4 million gain in the same period in 2019.** The loss on fair value of financial instruments charge includes a \$0.5 million non-cash revaluation loss (Q2 2019 - \$0.4 million gain) on the embedded derivative liability of the 7% convertible debentures maturing on August 15, 2021 (the "7% Convertible Debentures") due to the increase in the fair value of its conversion feature following an increase in the Company's share price quarter-on-quarter. It also includes a \$1.3 million non-cash revaluation loss (Q2 2019 - \$nil) on the non-hedge gold collar contracts following the overall increase in gold spot prices.

The gain on fair value of financial instruments for H1 2020 amounted to \$2.3 million compared to a loss of \$3.4 million in the same period in 2019. This comprises of a revaluation gain on the embedded derivative liability of \$3.2 million and revaluation loss on the non-hedge gold collar contracts of \$0.9 million.

- **Income tax expense was \$14.0 million in Q2 2020 compared to \$5.3 million for the same period in 2019.** Income tax expense for H1 2020 amounted to \$22.2 million compared to \$12.5 million in the same period in 2019. The income tax expense has been accrued based on the estimated taxable income of Wassa and the increase has been driven by the improved taxable profits due to the higher production base and realized gold price obtained. The increase in current taxes on a weighted contribution basis reflects the utilization of tax losses in Q2 2019 as Wassa became taxable during the course of 2019.
- **Net income attributable to Golden Star shareholders for Q2 2020 totaled \$7.8 million or \$0.07 income per share (basic), compared to a net loss of \$9.0 million or \$0.08 loss per share (basic) in the same period in 2019.** The significant swing in Q2 2020 reflects predominantly the impact of the higher realized gold price supported by the higher ounces sold base and reduced operating costs which drove an overall improvement in operating margin which in part was offset by the higher income tax expense. This was further supported by other income recognized of \$1.4 million in Q2 2020 mainly relating to change in estimated accrued energy and staff costs.

Net income attributable to Golden Star shareholders for H1 2020 totaled \$8.6 million or \$0.08 income per share (basic), compared to a net loss of \$11.0 million or \$0.10 loss per share (basic) in the same period in 2019 and this reflects predominantly the impact of the higher gold price environment partly offset by increased income tax expenses.

- **Adjusted net income attributable to Golden Star shareholders (see "Non-GAAP Financial Measures" section) was \$9.5 million in Q2 2020 compared to the adjusted net loss attributable to Golden Star shareholders of \$5.0 million for the same period in 2019.** Adjusted net income attributable to Golden Star shareholders was \$8.2 million in H1 2020 compared to the adjusted net loss attributable to Golden Star shareholders of \$3.0 million for the same period in 2019. Adjusted net income attributable to Golden Star shareholders reflects adjustments for non-recurring and abnormal items which are mostly non-cash in nature. The increase during Q2 2020 and H1 2020 compared to the same period in 2019 was primarily due to higher mine operating margin partly offset by increased income tax expenses.
- **Cash provided by operations before working capital changes (see "Non-GAAP Financial Measures" section) was \$27.1 million for Q2 2020, compared to \$0.6 million in the same period in 2019.** Cash provided by operations before working capital changes for H1 2020 amounted to \$40.5 million, a 161% increase to \$15.5 million in the same period in 2019. The increase in cash provided by operations before working capital changes for Q2 2020 and H1 2020 was primarily due to higher cash margin generated by Wassa more than offsetting the negative margin from Prestea and increase in corporate expenditures.
- **Capital expenditures for Q2 2020 totaled \$14.2 million compared to \$17.0 million in the same period in 2019.** Capital expenditures at Wassa during Q2 2020 comprised 83% of total capital expenditures and totaled \$11.8 million in relation to critical development projects which support the long-term development of the Wassa operation. Capital expenditure included \$3.7 million on the paste-fill plant, \$4.7 million on Wassa Underground capitalized development and \$2.4 million

on mobile equipment. Capital expenditures at Prestea during Q2 2020 comprised 16% of total capital expenditures and totaled \$2.3 million in relation to critical capital spent in respect of the long hole conversion. Capital expenditure included \$1.9 million of sustaining capital related to Prestea Underground, and \$0.3 million on other equipment and capital expenditure.

Capital expenditures for H1 2020 amounted to \$26.7 million compared to \$30.1 million in the same period in 2019 of which \$21.4 million was incurred at Wassa, \$4.8 million at Prestea and \$0.4 million at corporate office in the UK.

OUTLOOK FOR 2020

Prestea is currently tracking below the annualized production run rate required to deliver on its mine level guidance for 2020. This is largely due to dilution, low ore availability and the impact of the COVID-19 pandemic, which resulted in a personnel shortage, a delay in the delivery of new mining equipment and a delay in the transition to mining from optimized alimak stopes. During this disruption the focus has been on advancing the development of the long hole open stoping ("LHOS") mining areas on 17 Level. We continue to expect improved performance during H2 2020, particularly when production of the first LHOS stoping ore starts during Q4 2020.

In view of this, the Prestea production guidance is now being reduced to 30,000 to 35,000 ounces (from 40,000 to 45,000 ounces). At Wassa, the annualized production rate in H1 2020 is in excess of the upper end of its original 155,000 to 165,000 guidance range and H2 2020 performance is expected to be similar to that of H1 2020, for as long as there is no significant increase in the impact of COVID-19 on the operation. As such, we are increasing the annual guidance to 165,000 to 170,000 ounces and tightening our consolidated guidance range of 195,000 to 205,000 ounces.

The cash operating cost guidance for Prestea increases to \$1,800 to \$2,000 per ounce (from \$1,400 to \$1,550 per ounce) and the AISC guidance for Prestea increases to \$2,200 to \$2,600 per ounce (from \$1,650 to \$1,850 per ounce). As a result, the consolidated cash operating cost guidance is tightened to \$810 to \$850 per ounce (from \$790 to \$850 per ounce).

The group AISC performance in H1 2020 slightly exceeded the top end of the original consolidated guidance range. This is a result of the following trends:

- Higher than budgeted Prestea AISC resulting from lower than planned production;
- Increased gold price during Q2 2020 resulting in higher royalty payments to the Government of Ghana. This equates to a \$10 per ounce increase in the AISC in Q2 2020 over budgeted levels; and
- Costs associated with the processing of low grade stockpiles at Wassa adversely impacted on AISC by \$10 per ounce.

The combined effect of the above factors leads us to tighten the consolidated AISC guidance to \$1,100 to \$1,180 per ounce (from \$1,080 to \$1,180 per ounce). Our priority remains the delivery of a range of operational initiatives aimed at improving the consistency of the operations and visibility of their longer-term potential. The updated guidance for 2020 is as follows:

	Gold production	Cash operating costs ¹	All-in sustaining costs ¹
	000	\$ per ounce	\$ per ounce
Wassa	165 - 170	620 - 660	930 - 990
Prestea	30 - 35	1,800 - 2,000	2,200 - 2,600
Consolidated	195 - 205	810 - 850	1,100 - 1,180

Capital expenditure guidance

	Sustaining	Development ²	Total
	\$ millions	\$ millions	\$ millions
Wassa	23.0 - 25.0	19.0 - 21.0	42.0 - 46.0
Prestea	6.5 - 7.5	2.5 - 3.0	9.0 - 10.5
Exploration	—	3.5	3.5
Consolidated	29.5 - 32.5	25.0 - 27.5	54.5 - 60.0

¹ See "Non-GAAP Financial Measures" section below for the definition of all-in sustaining costs, or AISC.

² Development capital are those costs incurred at new operations and costs related to major projects at existing operations where these projects are expected to materially increase production. All other costs relating to existing operations are considered sustaining capital.

CORPORATE DEVELOPMENTS

COVID-19 pandemic

General

In December 2019, a novel strain of coronavirus known as COVID-19 surfaced in China and has since spread around the world with resulting economic, business and social disruption. COVID-19 was declared a worldwide pandemic by the World Health Organization ("WHO") on March 11, 2020. The speed and extent of the spread of COVID-19, and the duration and intensity of resulting economic, business and social disruption and related financial impact, are uncertain at this time. Further, the extent and manner to which COVID-19, and measures taken by governments, the Company or others to attempt to reduce the spread of COVID-19, may affect the Company and its operations cannot be predicted at this time.

Gold as an asset class has proven resilient (albeit with price volatility) primarily due to its safe-haven characteristics. The price of gold ranged from \$1,577 to \$1,772 per ounce during Q2 2020. Subsequent to Q2 2020, the price of gold has further increased over \$1,800 per ounce.

In respect of the Company's operations, Golden Star has been proactive in its response to the potential threats posed by COVID-19 and has implemented a range of policies, procedures and practices to protect the health and well-being of its employees and host communities whilst continuing to operate, to the extent possible, in the ordinary course of business.

COVID-19 cases

As at July 16, 2020, 34 suspected cases of COVID-19 had been reported at Wassa of which 14 have been confirmed, 18 test results are pending and the remainder proved to be negative. At that time, there were 19 members of the Wassa workforce in quarantine of which 17 were pending test results. As a result of the enhanced screening protocols implemented by the Company, personnel currently in quarantine pending results will have status confirmed in the near future. Given the relatively low number of cases of COVID-19 and the proactive screening protocols now in force, the operating impact to date on Wassa's operations has been limited. As at the date hereof, supply chain continuity remains intact and there is no expected schedule impact on the paste plant and 11kV electrical upgrade projects.

As announced on May 21, 2020, the numbers of suspected cases and staff placed into isolation or quarantine has been higher at Prestea than Wassa. As at July 16, 2020, 120 suspected cases of COVID-19 had been reported of which 19 have been confirmed and 97 were negative. No employees remained in quarantine as at July 16, 2020. Given the number of people that have had to isolate as part of the contact tracing protocols (93 at the peak during the three months ended June 30, 2020 for a period of 2-3 weeks on average) the impact on the Prestea operation has been significantly greater. New screening protocols implemented from early June 2020 are expected to reduce ongoing COVID-19 impact.

Safety

Golden Star continues to take a leadership position and proactively manage COVID-19 risks for our workforce. With the implementation of enhanced screening protocols and ongoing collaboration with the Ghana Health Services, we are now able to promptly identify and isolate potential suspect cases in the workforce for ongoing assessment. In addition, new screening tools allow for more rapid diagnosis and management response, allowing prompt return to work as appropriate. To reduce risk to vulnerable people, the Company has implemented a parallel major program of workforce medical surveillance for potentially at-risk personnel, with individual management plans developed to reduce risk to those individuals. As a major employer and therefore catalyst for rural economic stimulus in the host communities, we share the dual responsibility of knowing that our continued operations are critical to the health and well-being of our workforce and the thousands of people that they support both directly and indirectly. More information on our COVID-19 management controls can be found at www.gsr.com/responsibility/COVID-19

Update on COVID-19 in Ghana

As at July 13, 2020, the Ghana Health Services had reported 26,125 known cases of COVID-19 in the country, 22,270 recoveries and 139 deaths. The majority (55%) were identified from the Greater Accra Region. 2,206 cases had been confirmed positive in the Western Region, the region where Golden Star's mines are located, of which 32 confirmed cases had been recorded amongst the Golden Star mine workforce. Ghana reports having the second highest testing rate of all African nations with over 339,000 tests conducted as at July 13, 2020. Testing and contact tracing are strictly controlled by the Government of Ghana and the Ghana Health Service has established rapid response teams in all municipalities and districts. The country has

maintained border closures since late March 2020 and undertook a three-week partial lock down of the Greater Metropolises of Accra and Kumasi whilst enhanced testing and contact tracing regimes were implemented. Other ongoing controls include mandatory wearing of masks in public, distancing protocols and ongoing measures to reduce public gatherings.

Gold sales

The Government of Ghana initiated a number of control measures in response to the threat posed by COVID-19, which included imposing border restrictions. This reduced the number of commercial flights permitted to and from Ghana. As a consequence, the Company and its refining counterparty implemented alternative arrangements for the transportation of gold doré from Ghana to the refining facilities in South Africa. The timing of the weekly shipment schedule was amended which resulted in the shipment of the final production pour at the end of Q1 2020 and Q2 2020 being deferred into the first week of the succeeding quarters. The refinery has obtained consent from the Government of South Africa to continue operations during the pandemic. These arrangements are continually under review and alternative options have been assessed should the situation in South Africa change. The Company also temporarily amended its revenue recognition policy following a change in the timing of ownership transfer. Prior to the outbreak of COVID-19, the Company could sell gold doré on the condition that the shipment has left site which, as of March 20, 2020, has been temporarily changed to the shipment being in transit on the final leg of the commercial/charter flight which practically equates to the shipment arriving at the refinery.

Supply chain management

Supply chains for the key consumables, including cyanide, lime, grinding media, fuel and lubricants have remained intact. Alternative suppliers have been identified for essential supply chains that are based in Accra and Kumasi, Ghana. Additional medical and pharmaceutical supplies and facilities that are considered as essential have been secured for delivery in the near future.

As COVID-19 evolves, the Company continues to monitor and manage the supply chain risk closely and remains in regular contact with key suppliers and stakeholders. Detailed business continuity planning has been conducted based on a range of scenarios and potential outcomes which could materialize as the situation evolves. If COVID-19 continues to spread to the areas in which we operate, it may have a significant adverse impact on our workforce, operations and production levels, and our ability to continue operating in the ordinary course of business at one or both of our mines.

GSR COVID-19 Management controls

Some of the principal proactive measures taken by Golden Star in response to COVID-19 include:

- Management planning and preparedness
 - Epidemic and Pandemic Management Plans were developed and implemented prior to WHO's declaration of a Public Health Emergency of International Concern ("PHEIC")
 - Daily situation is being continually monitored and assessed with the support of International SOS ("ISOS")
- Education and sensitization
 - Widespread education to the Company's workforce and host communities
 - Open communication with Government of Ghana and union leadership
- Access, screening and travel restrictions
 - Site access control and thermal screening protocols have been effective in preventing access to the mine sites by people from known outbreak areas
 - Proactively stopped international travel for employees ahead of travel restrictions imposed by the Government of Ghana
 - Proactively required returning Ghanaian citizens and residents to undertake mandatory self-quarantine prior to this being implemented as a Government initiative
- Hygiene and sanitation
 - Enhanced facilities for hand washing and sanitation that were originally implemented for the 2014 and 2018 Ebola outbreaks have been maintained
 - Compulsory hand sanitizing stations at entry points to the Company offices and sites, on Company buses and clinics
 - Support to the local communities through the provision of water tanks for hand washing

- Practicing social distancing through the cessation of all non-essential meetings, gatherings and trainings of Company employees and as well as the provision of additional mealtime eating areas and rosters to allow for greater social distancing during meals and breaks
- Medical preparedness
 - Site isolation holding facilities established for management of suspected cases
 - Implementation of guidelines for self-quarantine and isolation
 - Acquisition of a dedicated polymerase chain reaction ("PCR") testing equipment to enable rapid testing of suspected cases among Company employees
 - Acquisition of rapid diagnostic test kits as complement and back-up for PCR testing

Notwithstanding the proactive measures taken by management, the potential effect of COVID-19 on the Company's liquidity and ability to continue as a going concern is considered in the Going Concern and Liquidity Outlook section below.

Class Action Complaint

On April 1, 2020, the Company received notification of a federal securities class action complaint (the "Complaint") that has been filed against it on behalf of persons or entities that purchased or otherwise acquired the Company's common stock on the NYSE American exchange from February 20, 2019 through July 30, 2019 inclusive. Also named as defendants are the Company's Chief Executive Officer and Director Andrew Wray, the Company's former President and Chief Executive Officer Samuel Coetzer, the Company's former President Daniel Owiredu and the Company's former Executive Vice President and Chief Financial Officer André van Niekerk. The Complaint alleges that the defendants violated Section 10(b) of the Securities Exchange Act of 1934 and Rule 10b -5, and Section 20(a) of the Securities Exchange Act of 1934 by making false and misleading statements to artificially inflate the Company's stock price. The Complaint seeks unspecified damages, interest, costs and fees for attorneys and experts.

The Company has retained legal counsel in connection with this Complaint. The Company believes that the allegations made against it and its current and former officers in respect of the Complaint are meritless and will vigorously defend them, although no assurance can be given with respect to the ultimate outcome. As the proceedings relating to the Complaint are still in early stages, the amount of the loss, if any, cannot be determined at this time.

Subsequent event

On July 26, 2020, the Company and its wholly-owned subsidiary, Caystar Holdings ("Caystar"), entered into a share purchase agreement (the "Prestea Sale Agreement") with Future Global Resources ("FGR"), a subsidiary of Blue International Holdings, providing for the sale by Caystar and the purchase by FGR of Golden Star's 90% interest in Prestea (the "Prestea Transaction"). It is expected that the Prestea Transaction will complete by no later than September 30, 2020 upon satisfaction of the conditions precedent set forth in the Prestea Sale Agreement including inter alia the approval of the Prestea Transaction by the Minister of Lands and Natural Resources of Ghana and the restructuring of the Streaming Agreement and the Macquarie Credit Facility.

FGR will acquire the mineral rights held by the Prestea operating company for a cash consideration of \$55 million on a cash, debt and working capital free basis of which (i) \$30 million, comprising of \$5 million cash and the assumption by FGR of approximately \$25 million of negative working capital, is payable on completion of the Prestea Transaction, \$10 million on July 31, 2021 and \$15 million on July 31, 2023.

In addition, a contingent payment of up to \$40 million (the "Contingent Payment") conditional upon the occurrence of the milestones described below in respect of the development of the Bogoso Sulfide Project (as defined in the Prestea Sale Agreement) may become payable by FGR to Caystar. The trigger point for the Contingent Payment is either (i) FGR's formal decision to proceed with the Bogoso Sulfide Project ("Decision to Proceed"), or (ii) the extraction of an aggregate of 5% of the Bogoso/Prestea refractory mineral resources (the "B/P Refractory Resources") as of December 31, 2019 (as disclosed in the Golden Star website in July 2020), being 1.76 million ounces of measured and indicated resources and 0.07 million ounces of inferred resource. The quantum of the Contingent Payment is determined by reference to the average spot gold price for the 90 day period preceding the date of the Decision to Proceed:

- \$20 million, if the average spot gold price is less than or equal to US\$1,400/oz;
- \$30 million, if the average spot gold price is greater than US\$1,400/oz but less than or equal to US\$1,700/oz; or
- \$40 million, if the average spot gold price is greater than US\$1,700/oz.

The Contingent Payment is payable in two tranches:

- 50% at the time of (i) the Decision to Proceed, or (ii) declaration that 5% of the B/P Refractory Resources have been extracted; and
- 50% at the time of the first anniversary of (i) achieving commercial production following the Decision to Proceed, or (ii) the first anniversary of the declaration that 5% of the B/P Refractory Resources have been extracted.

On completion, the Prestea Transaction will be accounted for as a disposal of a subsidiary whereby the assets and liabilities of Prestea will be derecognized and the consideration received will be reflected at fair value. We expect to complete the accounting in the third quarter of 2020 and expect to record a loss on disposal largely due to the derecognition of the non-controlling interest in Prestea.

Golden Star, FGR and RGLD Gold AG are in advanced discussions to amend the Streaming Agreement that would see, subject to the completion of terms, negotiation of definitive agreements and receipt of board of directors' approvals, a separation of the obligations under the Streaming Agreement as between the Wassa and Prestea mines.

Exploration Update

In response to COVID-19, the Company proactively scaled back field exploration activities from March 2020 and reduced contract staff by the end of April 2020. As a consequence, exploration expenditure in Q2 2020 has been limited to \$0.5 million of which \$0.4 million was expensed and \$0.1 million was capitalized.

Wassa - HBB

During the second quarter of 2020, exploration activities focused on the refinement of exploration targets across the Golden Star tenement package with the compilation and continued review of historic surface geochemical and drilling information, as well as, the updating of geological and geophysical interpretations, and the design of future field-based follow-up programs.

Field-based exploration activities are expected to restart at the end of July 2020, with programs focused on infill soil and auger geochemical sampling and reconnaissance Aircore drilling on targets within the HBB Project area and diamond core drilling of underground targets at Wassa.

For the remainder of 2020, the greenfield and brownfield exploration programs are expected to focus on near mine targets in and around Wassa, as well as on regional exploration targets within the Wassa-HBB Corridor. A total of \$6.2 million (\$3.5 million budget for capitalized exploration and \$2.7 million for expensed exploration) has been allocated for exploration programs across the project portfolio.

WASSA OPERATIONS

Golden Star (Wassa) Limited, a 90% owned subsidiary of the Company owns and operates Wassa. Wassa is located in the southwestern region of Ghana, approximately 35 kilometers northeast of the town of Tarkwa. As of February 1, 2018, Wassa became an underground-only operation. 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.

		Three Months Ended June 30,		Six Months Ended June 30,	
		2020	2019	2020	2019
WASSA FINANCIAL RESULTS					
Revenue	\$'000	75,368	47,893	129,455	101,885
Mine operating expenses	\$'000	26,634	24,067	52,000	47,500
Severance charges	\$'000	—	—	45	225
Royalties	\$'000	3,981	2,439	6,869	5,238
Operating costs to metals inventory	\$'000	2,790	636	508	959
Inventory write-off	\$'000	159	—	159	—
Cost of sales excluding depreciation and amortization	\$'000	33,564	27,142	59,581	53,922
Depreciation and amortization	\$'000	6,272	4,226	11,382	8,598
Mine operating margin	\$'000	35,532	16,525	58,492	39,365
Sustaining capital	\$'000	6,504	4,650	10,075	8,153
Development capital	\$'000	5,333	8,972	11,359	16,535
Capital expenditures	\$'000	11,837	13,622	21,434	24,688
WASSA OPERATING RESULTS					
Ore mined - Underground	t	402,000	312,115	795,472	638,862
Waste mined - Underground	t	145,651	78,214	316,127	134,443
Material mined - Underground	t	547,651	390,329	1,111,599	773,305
Ore processed - Main Pit/Stockpiles	t	122,332	52,786	141,683	92,829
Ore processed - Underground	t	401,445	312,115	820,819	638,862
Ore processed - Total	t	523,777	364,901	962,502	731,691
Grade processed - Main Pit/Stockpiles	g/t	0.64	0.64	0.64	0.64
Grade processed - Underground	g/t	3.46	3.51	3.18	3.92
Recovery	%	95.1	95.9	95.1	95.8
Gold produced - Main Pit/Stockpiles	oz	2,390	1,192	2,843	1,998
Gold produced - Underground	oz	42,387	36,164	82,265	78,268
Gold produced - Total	oz	44,777	37,356	85,108	80,266
Gold sold - Total	oz	46,503	37,725	83,028	80,724
Cost of sales per ounce ¹	\$/oz	857	831	855	774
Cash operating cost per ounce ¹	\$/oz	633	655	632	600
All-in sustaining cost per ounce ¹	\$/oz	960	941	952	844

¹ 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 excluding depreciation and amortization.

For the three months ended June 30, 2020 compared to the three months ended June 30, 2019

Production

Gold production from Wassa amounted to 44,777 ounces for Q2 2020, a 20% increase from the 37,356 ounces produced during Q2 2019 primarily due to 44% higher throughput from 364,901 tonnes in Q2 2019 to 523,777 tonnes in Q2 2020 as a result of increased Wassa Underground productivity and increased low grade stockpile material. Wassa Underground grade improved from 2.93 grams per tonne (“g/t”) in Q1 2020 to 3.46 g/t in Q2 2020 which is slightly below the 3.51 g/t in Q2 2019. Increased low grade stockpile material had an adverse impact on overall feed grade which decreased from 3.09 g/t in Q2 2019 to 2.80 g/t in Q2 2020 as well as recovery which decreased to 95.1% for Q2 2020 compared to 95.9% achieved for the same period in 2019.

Wassa Underground

Wassa Underground produced 42,387 ounces of gold (or approximately 95% of Wassa's total production) in Q2 2020, compared to 36,164 ounces in Q2 2019 (or approximately 97% of Wassa's total production). This 17% increase in production was mainly due to an increase in ore tonnes processed to 401,445 tonnes compared to 312,115 tonnes in Q2 2019 driven by higher underground mining productivity partly offset by a lower feed grade of 3.46 g/t in Q2 2020 compared to 3.51 g/t in Q2 2019. Underground mining rates increased to an average of 4,420 tonnes per day ("tpd") in Q2 2020, which is 29% higher than the mining rate of 3,470 tpd achieved in the same period in 2019.

Wassa Main Pit/Stockpiles

Low grade stockpile from the Wassa main pit of 122,332 tonnes with an average grade of 0.64 g/t was blended with the Wassa Underground ore during Q2 2020 and yielded 2,390 ounces of gold, compared to 1,192 ounces in Q2 2019. The Wassa management team identified the opportunity to increase low grade stockpile processing volumes in the current gold price environment which will continue into the first half of 2021 should the current gold environment persist.

Gold revenue

Gold revenue for Q2 2020 was \$75.4 million, \$27.5 million higher than the \$47.9 million achieved in Q2 2019. Gold sold increased by 23% to 46,503 ounces for Q2 2020 compared to 37,725 ounces in Q2 2019. In addition to the 20% higher gold production base compared with Q2 2019, Wassa partially caught up on unsold Q1 2020 ounces rolled over following the impact from the change in shipment scheduling due to the use of private charters due to COVID-19. As at June 30, 2020, 2,529 ounces of finished gold was still on hand and only shipped during the first week of July 2020 similar to Q1 2020. The average realized gold price, including unwinding of the deferred revenue from the Stream Agreement, was \$1,621 per ounce for Q2 2020 compared to \$1,270 per ounce in Q2 2019.

Cost of sales excluding depreciation and amortization

Cost of sales excluding depreciation and amortization was \$33.6 million for Q2 2020 compared to \$27.1 million for Q2 2019. Mine operating expenses increased by \$2.6 million to \$26.6 million due to (i) an increase in the total material mined and processed which translated into higher variable costs for labour, energy, consumables and maintenance costs; (ii) increased general and administrative costs associated with gold transport costs and insurance; and (iii) increased labour costs due to inflationary increases year-on-year and higher performance component. Improved productivity resulted in a reduction in unit costs for mining and processing costs by 11% and 22%, respectively. Royalties of \$4.0 million increased from \$2.4 million in Q2 2020 in line with higher gold revenue. Cost of sales excluding depreciation and amortization for Q2 2020 also includes a charge for inventory movement of \$2.8 million compared to a charge of \$0.6 million in Q2 2019 due to ounces sold in excess of production.

Depreciation and amortization

Depreciation and amortization expense increased to \$6.3 million for Q2 2020 compared to \$4.2 million for Q2 2019 mainly due to an increase in units-of-production based depreciation on higher production and higher capital cost base following 2019 additions.

Costs per ounce

Cost of sales per ounce increased 3% to \$857 for Q2 compared to Q2 2019 due to a combination of higher mine operating expenses, royalties, the charge for finished gold and depreciation in part offset by higher ounces sold.

Cash operating cost per ounce decreased 3% to \$633 for Q2 compared to Q2 2019 mainly due to increased sales volume on the back of increased underground mining productivity offset by additional processing costs and increased general and administrative costs.

AISC per ounce increased 2% to \$960 for Q2 2020 compared to Q2 2019. Increased (i) corporate general and administrative costs allocated to sites on a sold ounce basis, (ii) sustaining capital expenditure and (iii) royalties adversely impacted on Wassa's AISC and offset the impact of increased sold ounce base.

Capital expenditures

Capital expenditures for Q2 2020 totaled \$11.8 million compared with \$13.6 million incurred during Q2 2019 as the Wassa management team continued to focus efforts on critical development spend in order to support the long-term development of the underground operation. Key capital spending included: (i) \$3.7 million on the paste fill plant project which is earmarked for commissioning during Q4 2020, (ii) \$4.7 million on capitalized underground development activities, (iii) \$2.4 million on mobile equipment, and (iv) \$0.7 million on the mobile equipment capital spares.

For the six months ended June 30, 2020 compared to the six months ended June 30, 2019

Production

Gold production from Wassa amounted to 85,108 ounces for H1 2020, a 6% improvement from the 80,266 ounces produced during H1 2019 primarily due to 32% higher throughput from 731,691 tonnes in H1 2019 to 962,502 tonnes in H1 2020. Overall feed grade decreased from 3.50 g/t in H1 2019 to 2.81 g/t in H1 2020 due to a higher proportion of low grade stockpile ore being processed and lower Wassa Underground grades in Q1 2020. Recovery, as result of lower grades, decreased slightly from 95.8% in H1 2019 to 95.1% in H1 2020.

Wassa Underground

Wassa Underground produced 82,265 ounces of gold in H1 2020 compared to 78,268 ounces in H1 2019. This 5% improvement was mainly due to increased throughput to 820,819 tonnes compared to 638,862 tonnes in H1 2019 on the back of improved mining productivity partly offset by a lower grade of 3.18 g/t compared to 3.92 g/t in H1 2019 due to the mining of lower grades areas in Q1 2020. Wassa Underground mining rates increased to an average of 4,370 tpd in H1 2020, which is 24% higher than the mining rate of 3,550 tpd achieved in the same period in 2019.

Wassa Main Pit/Stockpiles

Low grade stockpile from the Wassa main pit amounted to 141,683 tonnes with an average grade of 0.64 g/t and yielded 2,843 ounces of gold which compares to 1,998 ounces in H1 2019 from the processing of 92,829 tonnes at the same grade. The processing of low grade stockpile utilizes the latent capacity in the Wassa processing plant which will continue to contribute additional cash flows, albeit at a slightly higher cost than achieved by the processing of Wassa Underground ore.

Gold revenue

Gold revenue for H1 2020 was \$129.5 million, 27% higher than the \$101.9 million achieved in H1 2019. Increased gold sold by 3% to 83,028 ounces for H1 2020 was driven by higher production but adversely impacted by the deferral of 2,529 ounces held at June 30, 2020 which were only sold in July 2020. The average realized gold price, including unwinding of the deferred revenue from the Stream Agreement, was \$1,559 per ounce for H1 2020 compared to \$1,262 per ounce in H1 2019.

Cost of sales excluding depreciation and amortization

Cost of sales excluding depreciation and amortization was \$59.6 million for H1 2020 compared to \$53.9 million for H1 2019. Mine operating expenses increased by \$4.5 million to \$52.0 million due to (i) an increase in the total material mined and processed which translated into higher variable costs for labour, energy, consumables and maintenance costs; (ii) increased general and administrative costs associated with gold transport costs, mining license fees and insurance; and (iii) increased labour costs due to inflationary increases year-on-year and higher performance component. Royalties increased by \$1.6 million in H1 2020 compared to H1 2019 due to the higher revenue base. Cost of sales excluding depreciation and amortization for H1 2020 also includes a charge for inventory movement of \$0.5 million compared to \$1.0 million in H1 2019.

Depreciation and amortization

Depreciation and amortization expense increased to \$11.4 million for H1 2020 compared to \$8.6 million for H1 2019 mainly due to an increase in units-of-production based depreciation on higher production and higher capital cost base following 2019 additions rolled into the depreciable cost base for 2020.

Costs per ounce

Cost of sales per ounce increased 10% to \$855 in H1 2020 compared to H1 2019 due to a combination of higher mine operating expenses, royalties and depreciation in part offset by the higher gold sales base.

Cash operating cost per ounce increased 5% to \$632 in H1 2020 compared to H1 2019 mainly due to increased mine operating costs which was in part offset by the increased ounces sold base.

AISC per ounce increased 13% to \$952 in H1 2020 compared to H1 2019 due to (i) higher cash operating cost base; (ii) increased royalties, (iii) increased corporate general and administrative costs which is allocated to sites on an ounces sold; and (iv) increased sustaining capital as a function of higher mining underground productivity.

Capital expenditures

Capital expenditures for H1 2020 totaled \$21.4 million compared with \$24.7 million incurred during H1 2019. Key capital spending included: (i) \$8.3 million on the paste fill plant project which is earmarked for commissioning during Q4 2020, (ii) \$8.6 million on capitalized underground development activities, (iii) \$2.8 million on mobile equipment, and (iv) \$0.7 million on the mobile equipment capital spares.

PRESTEA OPERATIONS

Golden Star (Bogoso/Prestea) Limited, a 90% owned subsidiary of the Company owns and operates Prestea located near the town of Prestea, Ghana. Prestea consists of Prestea Underground (an underground operation), the Prestea Open Pits (neighboring open pits formed from oxide deposits) which ceased operations during Q2 2020 and associated support facilities. Prestea has a CIL processing facility with capacity of up to 1.5 million tonnes per annum, located 14 kilometers away at Bogoso, which is suitable for treating non-refractory gold ore (the “non-refractory plant”). Ore from both Prestea Underground and the Prestea Open Pits is processed in the non-refractory plant. Prestea Underground achieved commercial production on February 1, 2018.

		Three Months Ended June 30,		Six Months Ended June 30,	
		2020	2019	2020	2019
PRESTEA FINANCIAL RESULTS					
Revenue	\$'000	10,262	14,022	23,546	27,287
Mine operating expenses	\$'000	14,561	18,706	31,685	35,169
Other operating expenses	\$'000	(3,031)	—	(3,031)	—
Severance charges	\$'000	32	30	37	99
Royalties	\$'000	521	726	1,244	1,401
Operating costs to metals inventory	\$'000	(414)	(229)	(1,405)	(1,332)
Inventory net realizable value adjustment	\$'000	614	131	632	1,051
Cost of sales excluding depreciation and amortization	\$'000	12,283	19,364	29,162	36,388
Depreciation and amortization	\$'000	1,017	2,523	2,776	5,013
Mine operating loss	\$'000	(3,038)	(7,865)	(8,392)	(14,114)
Sustaining capital	\$'000	1,941	3,075	4,184	4,940
Development capital	\$'000	340	296	662	507
Capital expenditures	\$'000	2,281	3,371	4,846	5,447
PRESTEA OPERATING RESULTS					
Ore mined - Open pits	t	34,204	158,300	138,464	203,007
Ore mined - Underground	t	34,271	37,155	66,424	75,833
Ore mined - Total	t	68,475	195,455	204,888	278,840
Waste mined - Open pits	t	83,527	219,400	268,850	253,637
Waste mined - Underground	t	12,656	2,014	24,585	3,222
Waste mined - Total	t	96,183	221,414	293,435	256,859
Total material mined - Open pits	t	117,731	377,700	407,314	456,644
Total material mined - Underground	t	46,927	39,169	91,009	79,055
Total material mined - Total	t	164,658	416,869	498,323	535,699
Ore processed - Open pits	t	37,714	174,718	138,109	270,372
Ore processed - Underground	t	34,271	37,155	66,177	75,833
Ore processed - Total	t	71,985	211,873	204,286	346,205
Grade processed - Open pits	g/t	1.35	1.55	1.48	1.46
Grade processed - Underground	g/t	4.72	4.09	5.38	5.19
Recovery	%	85.4	83.2	85.5	84.8
Gold produced - Open pits	oz	1,128	7,196	5,112	10,226
Gold produced - Underground	oz	4,738	3,870	10,388	11,214
Gold produced - Total	oz	5,866	11,066	15,500	21,440
Gold sold - Total	oz	6,172	11,017	15,248	21,514
Cost of sales per ounce ¹	\$/oz	2,155	1,987	2,095	1,924
Cash operating cost per ounce ¹	\$/oz	2,292	1,677	1,986	1,573
All-in sustaining cost per ounce ¹	\$/oz	2,890	2,143	2,508	2,006

¹See “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 excluding depreciation and amortization.

For the three months ended June 30, 2020 compared to the three months ended June 30, 2019

Production

Gold production from Prestea amounted to 5,866 ounces in Q2 2020, compared with 11,066 ounces produced during Q2 2019. This is due to the plant throughput of 71,985 tonnes in Q2 2020 being 66% below the Q2 2019 throughput of 211,873 mainly due to the cessation of open pit operations in May 2020 and the lack of higher grade ore from Prestea Underground due to grade dilution and short term operational challenges to compensate the reduction in gold production from the open pits.

Prestea Open Pits

The Prestea Open pits produced 1,128 ounces in Q2 2020 compared to 7,196 ounces in Q2 2019. Open pit mining which comprised of a number of small satellite deposits on the Bogoso/Prestea land package ended in May 2020. As a result, ore tonnes processed decreased by 78% to 37,714 tonnes at an average feed grade of 1.35 g/t compared to 1.55 g/t in Q2 2019.

Prestea Underground

Prestea Underground produced 4,738 ounces in Q2 2020 compared to 3,870 ounces in Q2 2019 due to an increase of 15% in grade to 4.72 g/t partly offset by an 8% decrease in ore tonnes processed to 34,271 tonnes. Q2 2020 performance was marked by short-term operational challenges including the (i) adverse operational impact on stoping activities on 24 Level due to operators and associated contacts being isolated due to testing positive for COVID-19; (ii) slower development rates on 17 Level due to delays in required mining equipment as a result of COVID-19 enforced supply chain challenges; and (iii) continued dilution from 24 Level driving lower than expected mining grades. It is expected that underground mining rates will improve towards the latter part of H2 2020 as 17 Level development is advanced which will provide for greater flexibility and scale in combination with higher grades expected from 24 Level.

Gold revenue

Gold revenue for the Q2 2020 was \$10.3 million compared to \$14.0 million recorded in Q2 2019. The 27% reduction in gold revenue is attributable to a 44% decrease in gold sold to 6,172 ounces partly offset by the 31% increase in average realized gold price to \$1,663 per ounce. Gold sold for Q2 2020 includes 678 ounces held at March 31, 2020 but excludes 372 ounces held at June 30, 2020 due to the timing of shipments following a change in the shipment scheduling due to the use of private charters.

Cost of sales excluding depreciation and amortization

Cost of sales excluding depreciation and amortization totaled \$12.3 million for Q2 2020 compared to \$19.4 million for Q2 2019. Mine operating expenses of \$14.6 million decreased by \$4.1 million compared to Q2 2019 primarily due to (i) lower variable costs incurred due to lower open pit and processing volumes in relation to labour, energy and consumable costs; (ii) lower general and administrative costs and (iii) lower energy costs due to the power tariff rebate program and lower fuel prices as a function of the decline in global oil markets. Cost of sales excluding depreciation and amortization for Q2 2020 include a credit to other operating expenses of \$3.0 million relating to a change in estimates of accrued energy and staff costs. Royalties of \$0.5 million decreased by \$0.2 million in line with the reduction in gold revenue. These were partly offset by a \$0.5 million increase in inventory write-down to net realizable value.

Depreciation and amortization

Depreciation and amortization expense decreased to \$1.0 million for Q2 2020 compared to \$2.5 million for Q1 2019 due to a combination of lower production volumes and the impact of the impairment charge of \$56.8 million in Q4 2019 resulting in a lower depreciable cost base rolling into 2020.

Costs per ounce

Cost of sales per ounce increased 8% to \$2,155, cash operating cost per ounce increased 37% to \$2,292 and all-in sustaining cost per ounce increased 35% to \$2,890 for Q2 2020 compared with Q1 2019 primarily due to the lower gold sales base. For AISC, this was partly offset by reduced sustaining capital costs and corporate general and administrative costs which are allocated to sites on a sold ounce basis.

Capital expenditures

Capital expenditures for Q2 2020 totaled \$2.3 million compared to \$3.4 million incurred during Q2 2019. Key capital spending during Q2 2020 included lateral and decline development of Prestea Underground (\$0.9 million) and drilling and mining equipment (\$0.8 million) relating to long hole conversion on 17 Level.

For the six months ended June 30, 2020 compared to the six months ended June 30, 2019

Production

Gold production from Prestea decreased to 15,500 ounces in H1 2020 compared with 21,440 ounces produced during H1 2019. The 41% decrease is attributable to plant throughput of 204,286 tonnes in Q2 2020, which is 41% down on Q2 2019 throughput of 346,205 mainly due to the cessation of open pit operations in May 2020 and a lack of higher grade ore at Prestea Underground as a result of continued grade dilution and short-term operational challenges in Q2 2020 to compensate the reduction in gold production from the open pits.

Prestea Open Pits

The Prestea Open pits produced 5,112 ounces in H1 2020, 50% below the 10,226 ounces achieved in H1 2019. Ore tonnes processed from the open pit material decreased by 49% to 138,109 tonnes following the cessation of the open pit operations in May 2020. Feed grade averaged 1.48 g/t, a slight increase to 1.46 g/t in H1 2019.

Prestea Underground

Prestea Underground produced 10,388 ounces in H1 2020 compares to 11,214 ounces in H1 2019. Although ore tonnes processed decreased by 13% to 66,177 tonnes, feed grade averaged 5.38 g/t, a 4% increase compared to 5.19 g/t in H1 2019. H1 2020 performance was marked by short term operational challenges as discussed in the Q2 2020 Prestea Underground section marked primarily by continued grade dilution and adverse impact of COVID-19 around our labour availability and supply chain constraints. It is expected that underground mining rates will improve towards the latter part of H2 2020 as 17 Level development is advanced which will provide for greater flexibility and scale in combination with improved grades expected from 24 Level.

Gold revenue

Gold revenue for H1 2020 was \$23.5 million, a reduction of 14% compared to H1 2019 due to 29% reduction in gold sold to 15,248 ounces partly offset by a 10% increase in average realized gold price to \$1,544 per ounce.

Cost of sales excluding depreciation and amortization

Cost of sales excluding depreciation and amortization amounted to \$29.2 million for H1 2020 compared to \$36.4 million for H1 2019. Mine operating expenses of \$31.7 million decreased by \$3.5 million compared to H1 2019 primarily due to (i) lower variable costs incurred due to lower open pit and processing volumes in relation to labour, energy and consumable costs; (ii) lower general and administrative costs; and (iii) lower energy costs due to the power tariff rebate program and lower fuel prices as a function of the decline in global oil markets. Cost of sales excluding depreciation and amortization for Q2 2020 include a credit to other operating expenses of \$3.0 million for a change in estimates of accrued energy and staff costs. Royalties decreased by \$0.2 million to \$1.2 million in line with reduced gold revenue. Inventory write-down to net realizable value decreased by \$0.4 million due to a higher realized price expected from the eventual sale of the gold inventories.

Depreciation and amortization

Depreciation and amortization expense decreased to \$2.8 million for H1 2020 compared to \$5.0 million for H1 2019 due to a combination of the impairment charge of \$56.8 million in Q4 2019 resulting in a lower depreciable cost base rolling into 2020 and lower production.

Costs per ounce

Cost of sales per ounce increased 9% to \$2,095, cash operating cost per ounce increased 26% to \$1,986 and all-in sustaining cost per ounce increased 25% to \$2,508 for H1 2020 compared with H1 2019 mainly due to the lower gold sales base. For AISC, this was partly offset by reduced sustaining capital costs and corporate general and administrative costs which are allocated to sites on a sold ounce basis.

Capital expenditures

Capital expenditures for H1 2020 totaled \$4.8 million compared to \$5.4 million incurred during H1 2019. Key capital spending during Q2 2020 included lateral and decline development of Prestea Underground (\$2.1 million) and drilling and mining equipment (\$1.5 million) relating to long hole conversion on 17 Level.

SUMMARIZED QUARTERLY FINANCIAL RESULTS

(Stated in thousands of U.S dollars except per share data)	Q2 2020	Q1 2020	Q4 2019	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018
Revenues	85,630	67,371	66,061	69,504	61,915	67,257	57,339	67,738
Cost of sales excluding depreciation and amortization	45,847	42,896	49,232	46,798	46,506	43,804	57,565	48,873
Net income/(loss)	8,332	12	(69,359)	4,926	(10,882)	(2,659)	(11,894)	(4,222)
Net income/(loss) attributable to shareholders of Golden Star	7,773	829	(62,434)	5,960	(9,036)	(1,924)	(9,318)	(3,178)
Adjusted net income/(loss) attributable to Golden Star shareholders ¹ (as restated)	9,471	(1,221)	(3,631)	1,581	(5,013)	2,022	(5,642)	(2,834)
EBITDA ¹	33,363	18,479	(54,617)	21,060	4,747	14,952	1,267	12,674
Adjusted EBITDA ¹ (as restated)	33,718	17,152	12,107	16,676	8,824	18,504	(3,462)	12,198
Net income/(loss) per share attributable to Golden Star shareholders - basic	0.07	0.01	(0.57)	0.05	(0.08)	(0.02)	(0.09)	(0.04)
Net income/(loss) per share attributable to Golden Star shareholders - diluted	0.08	(0.01)	(0.57)	0.02	(0.08)	(0.02)	(0.09)	(0.04)
Adjusted income/(loss) per share attributable to Golden Star shareholders - basic ¹ (as restated)	0.09	(0.01)	(0.03)	0.01	(0.05)	0.02	(0.05)	(0.04)

¹ 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 (basic) to net loss attributable to Golden Star shareholders and reconciliation of net income/(loss) to EBITDA and Adjusted EBITDA.

LIQUIDITY AND FINANCIAL CONDITION

		June 30, 2020	December 31, 2019
Cash and cash equivalents	\$'000	45,051	53,367
Debt	\$'000	102,569	106,769
Net debt	\$'000	57,518	53,402
		Six Months Ended June 30, 2020	
		2020	2019
Net cash provided by operating activities before working capital changes ¹	\$'000	40,456	15,499
Changes in working capital	\$'000	(16,706)	(13,906)
Net cash provided by operating activities	\$'000	23,750	1,593
Net cash used in investing activities	\$'000	(26,600)	(26,928)
Free cash flow ¹	\$'000	(2,850)	(25,335)
Net cash used in financing activities	\$'000	(5,466)	(5,018)
Decrease in cash and cash equivalents	\$'000	(8,316)	(30,353)
Cash and cash equivalents, beginning of period	\$'000	53,367	96,507
Cash and cash equivalents, end of period ²	\$'000	45,051	66,154

Notes:

¹ See “Non-GAAP Financial Measures” section for description of Net cash provided by operating activities before working capital changes and Free cash flow.

² Pro-forma cash and cash equivalents were calculated to include 89% of the shipment ounces unsold as at June 30, 2020 using the London Metal Exchange PM fix on June 30, 2020 which amounted to \$1,768/oz.

The Company held \$45.1 million in cash and cash equivalents as at June 30, 2020 compared to \$53.4 million in cash and cash equivalents as at December 31, 2019. During the six months ended June 30, 2020, operations provided \$23.8 million, investing activities used \$26.6 million and financing activities used \$5.5 million of cash. Pro-forma cash and cash equivalents² including unsold gold ounces as at June 30, 2020 amounted to \$48.9 million.

Net debt has increased to \$57.5 million as at June 30, 2020 from \$53.4 million as at December 31, 2019 following the decrease in cash and cash equivalents and a decrease in debt of \$4.2 million which is mainly related to the first \$5.0 million quarterly repayment to the Macquarie Credit Facility. Pro-forma² net debt when adjusted for the unsold ounces as at June 30, 2020 amounted to \$53.7 million, a reduction of \$5.5 million for the quarter compared to the pro-forma net debt of \$59.2 million as at March 31, 2020.

Before working capital changes, operations provided \$40.5 million of operating cash flow during the six months ended June 30, 2020, compared to \$15.5 million in the same period in 2019. Cash provided by operations before working capital changes increased significantly as a consequence of the record cash operating margin generated by Wassa driven by higher realized gold prices obtained and additional ounces sold during the period partly offset by cash burn by Prestea as a result of the lower production base.

Working capital used \$16.7 million during the six months ended June 30, 2020, compared to \$13.9 million in the same period in 2019. The working capital changes comprise primarily (i) \$5.6 million decrease in accounts payable and accrued liabilities cash adjusted; (ii) a \$3.8 million increase in inventory relating to finished gold on hand and inventory supplies following the shipment scheduling change due to COVID-19, (iii) a \$4.4 million increase in prepaids and other mainly due to the impact of insurance prepayments in Q2 2020; and (iv) \$4.3 million income tax payments at Wassa.

Investing activities used \$26.6 million during the six months ended June 30, 2020, which included \$8.3 million on the Wassa paste-fill project, \$8.6 million capitalized development of Wassa Underground, \$3.5 million mobile equipment and spares at Wassa, \$4.3 million on the development of Prestea Underground and \$1.9 million on other capital acquisitions.

Financing activities used \$5.5 million during the six months ended June 30, 2020, compared to \$5.0 million used in the same period in 2019. Financing activities comprised of \$5.0 million first quarterly repayment to the Macquarie Credit Facility and \$0.9 million repayment of finance lease partly offset by \$0.5 million proceeds from exercise of stock options.

GOING CONCERN AND LIQUIDITY OUTLOOK

As at June 30, 2020 the Company had cash and cash equivalents of \$45.1 million, net current liabilities excluding deferred revenue of \$18.3 million and net cash provided by operations before working capital changes for the six months then ended of \$40.5 million. As at June 30, 2020, the Company was compliant with its debt covenants.

Gold production and gold shipments have continued without any material disruptions despite the impact of COVID-19. However, the Company is unable to provide any assurances that its planned operations, production and capital expenditure for the foreseeable future will not be delayed, postponed or cancelled as a result of COVID-19 or otherwise. The pandemic could continue to affect financial markets, including the price of gold and the trading price of the Company's shares, could adversely affect the Company's ability to raise capital, and could cause continued interest rate volatility and movements that could make obtaining financing or refinancing debt obligations more challenging or more expensive or unavailable on commercially reasonable terms or at all. Furthermore, the Company may also experience regional risks which include, but are not limited to, possible shut-down of the gold refining facility in South Africa where the Company delivers its gold production, an inability to ship gold across borders, delays in the supply chain of critical reagents, consumables and parts, and the impact on the delivery of critical capital projects. Any of these events or circumstances could have a material adverse effect on the Company's business, financial condition and results of operations.

In the current economic environment with the potential impact of COVID-19, as well as the Company's current cash flow forecasts, there may be challenges in the Company's ability to generate sufficient free cash flow and/or raise additional financing in the foreseeable future that can be used to meet its ongoing obligations as they fall due.

As a result, the Company's management ("Management") has considered a range of downside scenarios taking into account the above-mentioned risks. In the event the Company breaches any of its credit facility covenants as a result of inability to meet the current financial forecast or due to the impact of COVID-19 including due to any temporary shutdown of mining operations, it would require either waivers from its lenders or a liquidation of certain assets to repay borrowings. However, in this downside scenario Management would seek temporary waivers to the covenants from its lenders.

Management has concluded that it is appropriate to prepare the Financial Statements on a going concern basis. However, as the waiver of covenants in the event of a breach of the credit facilities and/or securing additional financing to ensure sufficient liquidity for the foreseeable future, are not wholly within Management's control, we do note the risk it represents as a material uncertainty which casts a substantial doubt upon the Company's continued ability to operate as a going concern, such that the Company may be unable to realize its assets and discharge its liabilities in the normal course of business.

The Financial Statements do not reflect the adjustments to the carrying values of assets and liabilities and the reported expenses and balance sheet classifications that would be necessary if the Company were unable to realize the assets to settle its liabilities as a going concern in the normal course of operations. Such adjustments could be material.

TABLE OF CONTRACTUAL OBLIGATIONS

As at June 30, 2020, the Company is committed to the following:

(Stated in thousands of U.S dollars)	Payment due by period				Total
	Less than 1 Year	1 to 3 years	4 to 5 years	More than 5 Years	
Accounts payable and accrued liabilities	76,825	—	—	—	76,825
Debt ¹	20,230	87,042	708	—	107,980
Interest on long-term debt	6,366	3,895	47	—	10,308
Current income tax liabilities	13,881	—	—	—	13,881
Purchase obligations	17,155	—	—	—	17,155
Rehabilitation provisions ²	7,529	20,709	26,378	18,171	72,787
Total	141,986	111,646	27,133	18,171	298,936

¹ Includes the outstanding repayment amounts from the 7% Convertible Debentures, finance leases and the Macquarie Credit Facility.

² Rehabilitation provisions indicates the expected undiscounted cash flows for each period.

RELATED PARTY TRANSACTIONS

There were no material related party transactions for the three and six months ended June 30, 2020 and 2019 other than compensation of key management personnel which is presented in Note 17 of the Financial Statements. Key management personnel are defined as members of the Golden Star board of directors (the "Board") and certain senior officers of the Company. Compensation of key management personnel are made on terms equivalent to those prevailing in an arm's length transaction.

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/(loss) attributable to Golden Star shareholders", "adjusted income/(loss) per share attributable to Golden Star shareholders - basic", "cash provided by operations before working capital changes", "cash provided by operations before working capital changes per share - basic", free cash flow, EBITDA and Adjusted EBITDA.

"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, severance charges and by-product credits, but excludes exploration costs, property holding costs, corporate 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.

"Cost of sales per ounce" is equal to cost of sales excluding depreciation and amortization for the period plus depreciation and amortization for the period divided by the number of ounces of gold sold (excluding pre-commercial production ounces sold) during the period.

"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, materials and supplies write-off, other operating expenses and severance charges, and "cash operating cost per ounce" is that amount divided by the number of ounces of gold 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 or 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 the cash component of inventory net realizable value adjustments, royalties, sustaining capital expenditures, corporate general and administrative costs (excluding share-based compensation expenses and severance), and accretion of rehabilitation provision. For mine site all-in sustaining costs, corporate general and administrative costs (excluding share-based compensation expenses and severance) are allocated based on gold sold by each operation. “All-in sustaining costs per ounce” is that amount divided by the number of ounces of gold 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, changes to the rehabilitation provision, 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. Share-based compensation expenses are 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.

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 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 tables below reconcile 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.

Free cash flow is equal to net cash flow provided by/(used in) operating activities less net cash flow provided by/(used in) investing activities. Certain investors use free cash flow to assess the Company's ability to generate and manage liquid resources. Free cash flow is intended to provide additional information and does not have any standardized meaning under IFRS and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. This measure is not necessarily indicative of operating profit or cash flow from operations as determined under IFRS. This is a non-GAAP financial measure and other companies may calculate these measures differently.

The Company calculates EBITDA as net income or loss for the period excluding finance expense, income tax expense and depreciation and amortization. EBITDA does not have a standardized meaning prescribed by IFRS and should not be considered in isolation or as a substitute for measures of performance prepared in accordance with IFRS. EBITDA excludes the impact of cash costs of financing activities and taxes and the effects of changes in working capital balances and therefore is not necessarily indicative of operating profit or cash flow from operations as determined under IFRS. Other companies may calculate EBITDA differently. Adjusted EBITDA is a non-IFRS financial measure calculated by excluding one-off costs or credits relating to non-routine transactions from EBITDA. It excludes other credits and charges, that individually or aggregate, if of a similar type, are of a nature or size that requires explanation in order to provide additional insight into the underlying business performance. Examples of items excluded from Adjusted EBITDA are impairment charges, gain or loss on fair value of financial instruments and other expense/income as presented in the consolidated statements of operations. Other companies may calculate Adjusted EBITDA differently.

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 cost per ounce:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
(Stated in thousands of U.S dollars except cost per ounce data)				
Cost of sales excluding depreciation and amortization	45,847	46,506	88,743	90,310
Depreciation and amortization	7,289	6,749	14,158	13,611
Cost of sales	<u>53,136</u>	<u>53,255</u>	<u>102,901</u>	<u>103,921</u>
Cost of sales excluding depreciation and amortization	45,847	46,506	88,743	90,310
Other operating expenses	3,031	—	3,031	—
Severance charges	(32)	(30)	(82)	(324)
Royalties	(4,502)	(3,165)	(8,113)	(6,639)
Inventory net realizable value adjustment and write-off	(773)	(131)	(791)	(1,051)
Cash operating costs	<u>43,571</u>	<u>43,180</u>	<u>82,788</u>	<u>82,296</u>
Royalties	4,502	3,165	8,113	6,639
Inventory net realizable value adjustment and write-off	773	131	791	1,051
Accretion of rehabilitation provision	136	166	271	365
Corporate general and administrative costs	4,954	4,726	10,629	7,885
Sustaining capital expenditures	8,444	7,725	14,259	13,093
Corporate capital expenditures	80	—	394	—
All-in sustaining costs	<u>62,460</u>	<u>59,093</u>	<u>117,245</u>	<u>111,329</u>
Ounces sold	52,675	48,742	98,276	102,238
Cost of sales per ounce	\$ 1,009	\$ 1,093	\$ 1,047	\$ 1,016
Cash operating cost per ounce	\$ 827	\$ 886	\$ 842	\$ 805
All-in sustaining cost per ounce	\$ 1,186	\$ 1,212	\$ 1,193	\$ 1,089

The table below reconciles cost of sales excluding depreciation and amortization to cash operating cost per ounce for each of the operating mines:

(Stated in thousands of U.S dollars except cost per ounce data)	For the Three Months Ended June 30, 2020			For the Three Months Ended June 30, 2019		
	Wassa	Prestea	Combined	Wassa	Prestea	Combined
Cost of sales excluding depreciation and amortization	33,564	12,283	45,847	27,142	19,364	46,506
Depreciation and amortization	6,272	1,017	7,289	4,226	2,523	6,749
Cost of sales	39,836	13,300	53,136	31,368	21,887	53,255
Cost of sales excluding depreciation and amortization	33,564	12,283	45,847	27,142	19,364	46,506
Other operating expenses	—	3,031	3,031	—	—	—
Severance charges	—	(32)	(32)	—	(30)	(30)
Royalties	(3,981)	(521)	(4,502)	(2,439)	(726)	(3,165)
Inventory net realizable value adjustment and write-off	(159)	(614)	(773)	—	(131)	(131)
Cash operating costs	29,424	14,147	43,571	24,703	18,477	43,180
Royalties	3,981	521	4,502	2,439	726	3,165
Inventory net realizable value adjustment and write-off	159	614	773	—	131	131
Accretion of rehabilitation provision	39	97	136	32	134	166
Corporate general and administrative costs	4,434	520	4,954	3,658	1,068	4,726
Sustaining capital expenditures	6,504	1,941	8,444	4,650	3,075	7,725
Corporate capital expenditures	80	—	80	—	—	—
All-in sustaining costs	44,620	17,839	62,460	35,482	23,611	59,093
Ounces sold	46,503	6,172	52,675	37,725	11,017	48,742
Cost of sales per ounce	\$ 857	\$ 2,155	\$ 1,009	\$ 831	\$ 1,987	\$ 1,093
Cash operating cost per ounce	\$ 633	\$ 2,292	\$ 827	\$ 655	\$ 1,677	\$ 886
All-in sustaining cost per ounce	\$ 960	\$ 2,890	\$ 1,186	\$ 941	\$ 2,143	\$ 1,212

(Stated in thousands of U.S dollars except cost per ounce data)	For the Six Months Ended June 30, 2020			For the Six Months Ended June 30, 2019		
	Wassa	Prestea	Combined	Wassa	Prestea	Combined
Cost of sales excluding depreciation and amortization	59,581	29,162	88,743	53,922	36,388	90,310
Depreciation and amortization	11,382	2,776	14,158	8,598	5,013	13,611
Cost of sales	70,963	31,938	102,901	62,520	41,401	103,921
Cost of sales excluding depreciation and amortization	59,581	29,162	88,743	53,922	36,388	90,310
Other operating expenses	—	3,031	3,031	—	—	—
Severance charges	(45)	(37)	(82)	(225)	(99)	(324)
Royalties	(6,869)	(1,244)	(8,113)	(5,238)	(1,401)	(6,639)
Inventory net realizable value adjustment and write-off	(159)	(632)	(791)	—	(1,051)	(1,051)
Cash operating costs	52,508	30,280	82,788	48,459	33,837	82,296
Royalties	6,869	1,244	8,113	5,238	1,401	6,639
Inventory net realizable value adjustment and write-off	159	632	791	—	1,051	1,051
Accretion of rehabilitation provision	78	193	271	95	270	365
Corporate general and administrative costs	8,980	1,649	10,629	6,226	1,659	7,885
Sustaining capital expenditures	10,075	4,184	14,259	8,153	4,940	13,093
Corporate capital expenditures	333	61	394	—	—	—
All-in sustaining costs	79,002	38,243	117,245	68,171	43,158	111,329
Ounces sold	83,028	15,248	98,276	80,724	21,514	102,238
Cost of sales per ounce	\$ 855	\$ 2,095	\$ 1,047	\$ 774	\$ 1,924	\$ 1,016
Cash operating cost per ounce	\$ 632	\$ 1,986	\$ 842	\$ 600	\$ 1,573	\$ 805
All-in sustaining cost per ounce	\$ 952	\$ 2,508	\$ 1,193	\$ 844	\$ 2,006	\$ 1,089

“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 the values in prior periods 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 non-GAAP financial measures as defined in 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 or 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.

Adjusted net income attributable to Golden Star shareholders

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

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
(Stated in thousands of U.S dollars except per share data)				
Net income/(loss) attributable to Golden Star shareholders	7,773	(9,036)	8,602	(10,960)
Add back/(deduct):				
Loss/(gain) on fair value of financial instruments	1,776	(424)	(2,286)	3,449
Severance charges	32	3,751	489	4,045
(Gain)/loss on change in asset retirement obligations	(145)	862	1,985	587
Tax effect of change in estimates of rehabilitation asset	26	(89)	(371)	(27)
	9,462	(4,936)	8,419	(2,906)
Adjustments attributable to non-controlling interest	9	(80)	(170)	(88)
Adjusted net income/(loss) attributable to Golden Star shareholders	9,471	(5,016)	8,249	(2,994)
Adjusted income/(loss) per share attributable to Golden Star shareholders - basic	0.09	(0.05)	0.08	(0.03)
Weighted average shares outstanding - basic (millions)	109.9	108.9	109.7	108.8

The Company uses “Adjusted net income/(loss) attributable to Golden Star shareholders” for its own internal purposes. Management’s internal budgets and forecasts and public guidance do not reflect the items which have been excluded from the determination of adjusted net income attributable to Golden Star shareholders. Consequently, the presentation of adjusted net income attributable to Golden Star shareholders enables shareholders to better understand the underlying operating performance of our core mining business through the eyes of management. Management periodically evaluates the components of adjusted net earnings based on an internal assessment of performance measures that are useful for evaluating the operating performance of our business and a review of non-GAAP measures used by mining industry analysts and other mining companies.

“Adjusted net income/(loss) attributable to Golden Star shareholders - basic” is calculated by adjusting net loss attributable to Golden Star shareholders for gain/loss on fair value of financial instruments, severance charges, gain or loss on change in asset retirement obligations, income tax effect of change in estimates of rehabilitation asset, non-cash cumulative adjustment to revenue and finance costs related to the Stream Agreement and impairment charges. The Company has excluded the non-cash cumulative adjustment to revenue from adjusted net income/(loss) as the amount is non-recurring, the amount is non-cash in nature and management does not include the amount when reviewing and assessing the performance of the operations. “Adjusted income/(loss) per share attributable to Golden Star shareholders” for the period is “Adjusted net income/(loss) attributable to Golden Star shareholders” divided by the weighted average number of shares outstanding using the basic method of earnings per share.

Effective January 1, 2020, share-based compensation expense and income tax expense are included in the determination of Adjusted net income/(loss) attributable to Golden Star shareholders and the tax effect of change in estimates of rehabilitation assets is excluded from the determination of Adjusted net income/(loss) attributable to Golden Star shareholders following Management’s most recent evaluation. The Adjusted net income/(loss) attributable to Golden Star shareholders for the three months ended June 30, 2019 was restated from a net income of \$0.9 million to a net loss of \$5.0 million to reflect this change (six months ended June 30, 2019 - from a net income of \$10.3 million to \$3.0 million). As a result, Adjusted net income/(loss) attributable to Golden Star shareholders - basic for the three months ended June 30, 2019 was also restated from a net income of \$0.01 per share to a net loss of \$0.05 per share (six months ended June 30, 2019 - net income of \$0.09 per share to \$0.03 per share).

Adjusted net income/(loss) attributable to Golden Star shareholders and adjusted income/(loss) per share attributable to Golden Star shareholders should be considered 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.

EBITDA and Adjusted EBITDA

The table below shows the reconciliation of Net income/(loss) to EBITDA and Adjusted EBITDA:

(Stated in thousands of U.S dollars)	Q2 2020	Q1 2020	Q4 2019	Q3 2019	Q2 2019	Q1 2019	Q4 2018	Q3 2018
Net income/(loss)	8,332	12	(69,359)	4,926	(10,882)	(2,659)	(11,894)	(4,222)
Add back/(deduct):								
Finance expense, net	3,771	3,363	(3,437)	3,911	3,602	3,547	3,812	4,086
Income tax expense	13,971	8,235	9,715	5,244	5,278	7,202	1,525	4,151
Depreciation and amortization	7,289	6,869	8,464	6,979	6,749	6,862	7,824	8,659
EBITDA	33,363	18,479	(54,617)	21,060	4,747	14,952	1,267	12,674
Add back/(deduct):								
Impairment charges	—	—	56,762	—	—	—	—	—
Loss/(gain) on fair value of financial instruments	1,776	(4,062)	2,986	(4,793)	(424)	3,873	(3,274)	629
Other (income)/expense	(1,421)	2,735	6,976	409	4,501	(321)	(1,455)	(1,105)
Adjusted EBITDA	33,718	17,152	12,107	16,676	8,824	18,504	(3,462)	12,198

Corporate severance charges for the three months ended June 30, 2019 of \$3.7 million, for the three months ended September 30, 2019 of \$0.3 million have been reclassified from the corporate general and administrative expenses line into other income/(expense) for the corresponding three months then ended to align with the classification of corporate severance charges for the year ended December 31, 2019. The sum of these corporate severance charges of \$4.0 million have been reversed in the three months ended December 31, 2019 to reflect the correct timing of the charges.

OUTSTANDING SHARE DATA

As of July 28, 2020, there were 109,963,469 common shares of the Company issued and outstanding, 2,606,105 stock options outstanding, 1,271,635 deferred share units outstanding, 486,708 share units of 2017 performance and restricted share units outstanding, 1,555,214 share units of UK PSUs (as defined below) outstanding and 7% Convertible Debentures which are convertible into an aggregate of 11,444,000 Golden Star 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, 2019.

CHANGES IN ACCOUNTING POLICIES

The Company has adopted the following new and revised accounting standard effective January 1, 2020. These changes were made in accordance with the applicable transitional provisions.

Definition of a Business (Amendments to IFRS 3)

The amendments in Definition of a Business (Amendments to IFRS 3) are changes to Appendix A Defined terms, the application guidance, and the illustrative examples of IFRS 3 only. It:

- clarifies that to be considered a business, an acquired set of activities and assets must include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs;
- narrow the definitions of a business and of outputs by focusing on goods and services provided to customers and by removing the reference to an ability to reduce costs;
- add guidance and illustrative examples to help entities assess whether a substantive process has been acquired;
- remove the assessment of whether market participants are capable of replacing any missing inputs or processes and continuing to produce outputs; and
- add an optional concentration test that permits a simplified assessment of whether an acquired set of activities and assets is not a business.

There was no accounting impact to the Financial Statements on adoption of this standard.

Revenue recognition

Revenue from the sale of metal is recognized when the Company transfers control over to a customer. The Company's spot sales of gold are transported to a gold refiner who locates a buyer and arranges sale of the gold. Effective March 20, 2020 and until recommencement of commercial flights between Ghana and South Africa, the sale generally completes on the day of arrival of gold at the refinery in South Africa as a consequence of the change in shipment logistics due to COVID-19. Previously, the sale of gold completed on the same day the gold was shipped from the mine site. The sales price is generally set with reference to the London A.M. or P.M. fix on the day of arrival of gold at the refinery.

UK Performance Share Unit Plan

In February 2020, the Company adopted a new UK Performance Share Unit Plan ("UK PSU Plan") as approved by Golden Star shareholders on May 7, 2020. Under the UK PSU Plan, performance share units ("UK PSUs") may be issued to UK resident employees of the Company or its designated affiliates. UK PSUs may be redeemed for: (i) Golden Star common shares issued from treasury; (ii) Golden Star common shares purchased in the secondary market at the election of the participant and subject to consent of the Company; (iii) a cash payment at the election of the participant and subject to consent of the Company; or (iv) a combination of (i), (ii) and (iii).

Each UK PSU represents one notional common share that is redeemed for common shares or common shares and/or cash subject to the consent of the Company based on the value of a common share at the end of the three year performance period, to the extent performance and vesting criteria have been met. UK PSUs vest at the end of a three-year performance period. The award is determined by multiplying the number of UK PSUs by the performance adjustment factor, which ranges from 0% to 200%.

The performance adjustment factor is determined by comparing the Company's share price performance to the share price performance of a peer group of companies determined by the Compensation Committee of the Board. The Company plans to settle these awards in common shares of the Company and so they are accounted for as equity awards with corresponding compensation expense recognized.

FINANCIAL INSTRUMENTS

(Stated in thousands of U.S dollars)	Fair value at June 30, 2020	Basis of measurement	Associated risks
Cash and cash equivalents	45,051	Amortized cost	Interest/Credit/Foreign exchange
Accounts receivable	5,077	Amortized cost	Foreign exchange/Credit
Non-hedge derivative liability	1,108	Fair value through profit and loss	Market price
Trade and other payables	69,830	Amortized cost	Foreign exchange/Interest
Finance leases	1,482	Amortized cost	Interest
7% Convertible Debentures	48,316	Amortized cost	Interest
Macquarie Credit Facility	52,771	Amortized cost	Interest
Long-term derivative liability	2,425	Fair value through profit and loss	Market price

Amortized cost - Cash and cash equivalents, accounts receivable, trade and other payables, the 7% Convertible Debentures, the Macquarie Credit Facility and the finance leases approximate their carrying values as the interest rates are comparable to current market rates.

Fair value through profit or loss - The fair value of the long-term derivative liability relating to the 7% Convertible Debentures is estimated using a convertible note valuation model. For the three months ended June 30, 2020, a loss of \$0.5 million (six months ended June 30, 2020 - gain of \$3.2 million) was recorded to the statement of operations. The non-hedge derivative liability relating to collar contracts is estimated using pricing models that utilize a variety of observable inputs that are a combination of quoted prices, applicable yield curves and credit spreads. As at June 30, 2020, these costless collars consist of puts and calls on (i) 12,500 ounces of gold with a floor price of \$1,400 per ounce and a ceiling price of \$1,750 per ounce maturing at a rate of 4,167 ounces per month from July 2020 to September 2020; and (ii) 12,600 ounces with a floor price of \$1,500 per ounce and a ceiling price of \$1,992 per ounce maturing at a rate of 4,200 ounces per month from October 2020 to

December 2020. For the three months ended June 30, 2020, the Company recognized an unrealized loss of \$1.3 million (six months ended June 30, 2020 - unrealized loss of \$0.9 million).

DISCLOSURES ABOUT RISKS

The Company is exposed to significant risks including, but without limitation 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.

Possible adverse effects of the COVID-19 pandemic on future operating results

Refer to the "Going Concern and Liquidity Outlook" section of this MD&A for a discussion of the possibility of operational disruptions as a result of COVID-19.

For a detailed discussion of risks relating to the Company, refer to the Company's Annual Information Form for the year ended December 31, 2019 available on the SEDAR website at 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 June 30, 2020, 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.

RISK FACTORS AND ADDITIONAL INFORMATION

The risk factors for the three and six months ended June 30, 2020 are substantially the same as those disclosed and discussed under the headings “Risk Factors - General Risks”, “Risk Factors - Governmental and Regulatory Risks” and “Risk Factors - Market Risks” in the Company's Annual Information Form for the year ended December 31, 2019 available on the Company's profile on SEDAR at www.sedar.com.