



GOLDEN STAR RESOURCES LTD.

Annual Information Form

For the Year Ended December 31, 2016

DATED: March 27, 2017

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ABOUT INFORMATION IN THIS ANNUAL INFORMATION FORM

Unless specifically stated otherwise in this Annual Information Form:

- all dollar amounts are in United States dollars;
- information is presented as of December 31, 2016; and
- references to “Golden Star”, the “Company”, “us”, “our” and “we”, or related or similar terms, refer to Golden Star Resources Ltd., its predecessors and consolidated subsidiaries, or any one or more of them, as the context requires.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING INFORMATION

This Annual Information Form 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 that are based on expectations, estimates and projections as of the date of this Annual Information Form. 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”, “will be taken”, “occur”, “be achieved” or the negative connotation thereof. Forward-looking information and statements include, but are not limited to information or statements with respect to: production and cash operating cost estimates; the intended expansion of production and reduction of costs; the planned or expected use of proceeds of the Company’s equity offering; the expected allocation of the Company’s sources of production through 2017; the impact of rain on our operations; the impact of Wassa Underground (as defined in the “Overview of Golden Star” section below) mining operations on Wassa open pit mining operations and the impact of Wassa open pit mining operations on Wassa Underground mining operations; the safety and efficiency benefits of Alimak stoping over conventional shrinkage mining; mining methods and estimated recovery at the Wassa Underground; the rate and acceleration of the rate of production from Wassa Underground; the sufficiency of infrastructure at Wassa Underground to accommodate the near-term mine plan at Wassa Underground; the commencement of longitudinal stoping of the B Shoot at Wassa Underground during the first quarter of 2017 and the timing for accessing the transverse stopes of the higher grade B Shoot zone at Wassa Underground in the third quarter 2017; required investments in mine infrastructure; securing financing for operations on favourable terms; anticipated commencement dates of mining and production at Prestea Underground (as defined in the “Overview of Golden Star” section below); the expected higher grade nature of ore from Prestea Underground and Mampon; the commencement of mining and production from Mampon and the conclusion of mining and production from Mampon; the impact of mining Mampon on the Company’s cash flow; the achievement of blasting the first stope at Prestea Underground and the timing thereof; the commencement of commercial production at Prestea Underground and the timing thereof; the timing for rehabilitation work, as well as pre-development and development work and stoping at Prestea Underground; estimated costs and timing of the development of new deposits and sources of funding for such development; capital expenditures; government review of gold exploration areas; the mining laws, environmental laws and tax regime of Ghana; production capacity, rates and costs; currency exchange rate fluctuations; gold sales; mining operations and gold recovery rates; ore type, delivery and processing; use of waste rock; tailings processing; completion, use and capacity of TSF2 (as defined in the “Wassa Gold Mine” section below); potential mine life; strip ratios; permitting and approvals; rehabilitation; estimates of mineral reserves and mineral resources; geological, environmental, community and engineering studies; environmental impact of operations; exploration efforts and activities; timing for commencing or completing drilling; updates to resource models; the potential to expand the mineral reserves of the Company through further drilling; the potential to increase the Company’s mineral resources outside of the existing mineral resource footprint; the impact that increased exploration is expected to have on mineral resources and mineral reserves; identification of acquisition and growth opportunities; relationships with local stakeholder communities; the timing for transforming, and the Company’s ability to transform into a lower cost producer and the resulting reduction in cash operating costs; the ability of the Company to repay the 5% Convertible Debentures and 7% Convertible Debentures when due or to restructure them or make alternate arrangements; and our ability to meet our cash requirements.

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.

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. The following, in addition to the factors described under “Risk Factors”, are among the factors that could cause actual results, performance or achievement to differ materially from the forward-looking statements:

- significant increases or decreases in gold prices and the speculative nature of gold exploration;
- losses or gains in mineral reserves and mineral resources from changes in operating costs and/or gold prices;
- failure of exploration efforts to expand mineral reserves and mineral resources around the Company’s existing mines;
- unexpected changes in business and economic conditions;
- inaccuracies in mineral reserves and mineral resources estimates;
- changes in interest and currency exchange rates;
- possible hedging activities;
- timing and amount of gold production;
- unanticipated variations in ore grade, tonnes mined and crushed or milled;
- unanticipated recovery or production problems;
- effects of illegal mining on the Company’s properties;
- ability to, and cost of, dewatering the Company’s underground mines;
- changes in mining and processing costs, including changes to costs of raw materials, supplies, services and personnel;
- changes in metallurgy and processing;
- availability of skilled personnel, contractors, materials, equipment, supplies, power and water;
- changes in project parameters or mine plans;
- costs and timing of development of mineral reserves;
- weather, including drought or excessive rainfall in West Africa;
- results of current and future exploration activities;
- results of pending and future feasibility studies;
- acquisitions and joint venture relationships;
- political or economic instability, either globally or in the countries in which the Company operates;
- changes in regulatory frameworks or regulations affecting the Company’s operations, particularly in Ghana, where its producing properties are located;
- local and community impacts and issues;
- availability and cost of replacing mineral reserves;

- timing of receipt and maintenance of government approvals and permits;
- unanticipated transportation costs including shipping incidents and losses;
- accidents, labor disputes and other operational hazards;
- delays in obtaining government approvals or financing or in the completion of development or construction activities;
- an inability to obtain power for operations on favorable terms or at all;
- environmental (including reclamation) costs and risks;
- changes in tax laws;
- title issues;
- competitive factors, including competition for property acquisitions;
- possible litigation;
- availability of capital at reasonable rates or at all;
- risks related to indebtedness and the service of such indebtedness;
- changes in the Ghanaian Cedi and government policies regarding payments in foreign currency; and
- changes to Golden Star's mining licenses, including revocation.

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 results, performance or 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 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 Annual Information Form, except in accordance with and as required by applicable securities laws.

CAUTIONARY NOTE REGARDING MINERAL RESERVES AND MINERAL RESOURCES

Scientific and technical information contained in this Annual Information Form was reviewed and approved by Dr. Martin Raffield, Senior Vice-President, Project Development and Technical Services and Mitch Wasel, Vice-President, Exploration for Golden Star. Each of Dr. Raffield and Mr. Wasel is a "qualified person" ("QP") as defined by National Instrument 43-101 - Standards of Disclosure for Mineral Projects ("NI 43-101"). All mineral reserves and mineral resources have been prepared 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 do not have demonstrated economic viability. Information regarding the mineral properties mentioned in this Annual Information Form that are considered to be material mineral properties to the Company is described under the heading "Description of the Properties - Golden Star Material Properties".

CAUTIONARY NOTE TO U.S. INVESTORS

This Annual Information Form 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 the Company's 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 value. Inferred mineral resources have a high degree of uncertainty as to their existence and as to whether they can be economically or legally mined. It cannot be assumed that all or any part of an inferred mineral resource will ever be upgraded to a higher category. Therefore, you are cautioned not to assume that all or any part of an inferred mineral resource exists, that it can be economically or legally mined, or that it will ever be upgraded to a higher category. Likewise, you are cautioned not to assume that all or any part of measured or indicated mineral resources will ever be upgraded into mineral reserves. In addition, disclosure of "contained ounces" is permitted under Canadian Securities Laws; however, the SEC only permits registrants to report SEC compliant reserves in ounces, and requires reporting of mineralization that does not qualify as reserves as in place tonnage and grade without reference to unit measures. As such, certain information contained herein concerning descriptions of mineralization and resources under Canadian Securities Laws may not be comparable to similar information made public by United States companies subject to reporting and disclosure requirements of the SEC.

CURRENCY PRESENTATION AND EXCHANGE RATE INFORMATION

We report in United States dollars. Accordingly, all references to "\$", "U.S.\$" or "United States dollars" in this Annual Information Form refer to United States dollar values. References to "Cdn.\$" or "Canadian dollars" are used to indicate Canadian dollar values.

The noon rate of exchange on December 30, 2016 as reported by the Bank of Canada for the conversion of Canadian dollars into United States dollars was Cdn.\$1.00 equals U.S.\$0.7448 and for the conversion of United States dollars into Canadian dollars was U.S.\$1.00 equals Cdn.\$1.3427.

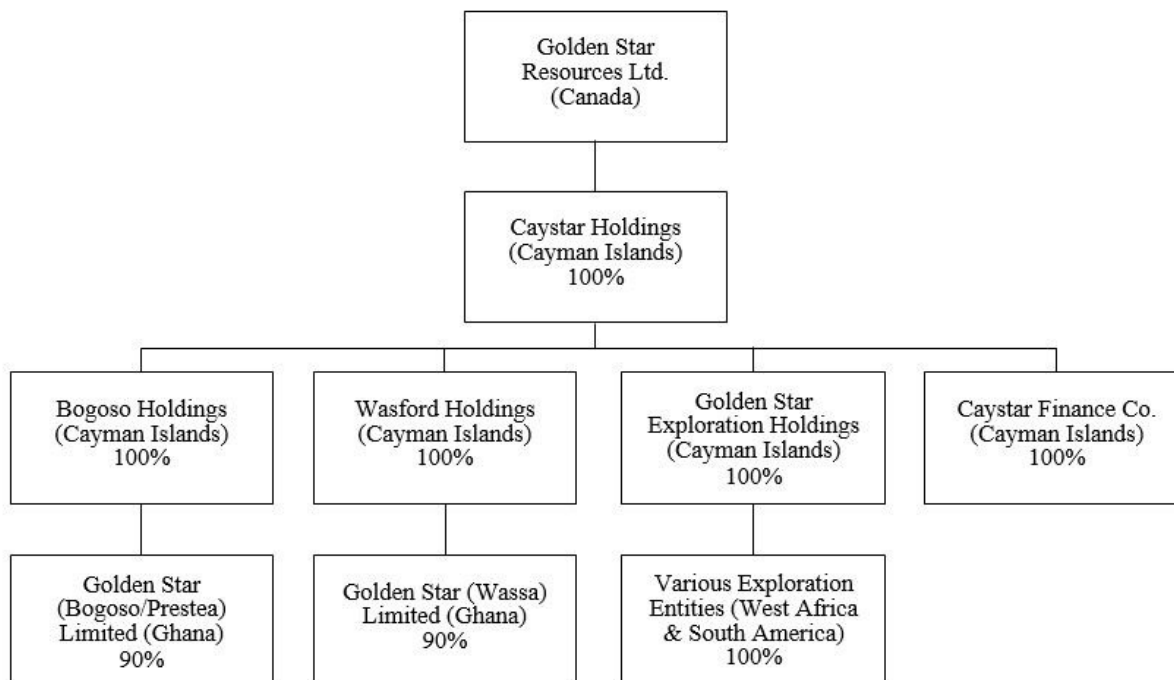
The following table sets forth, for each of the years indicated, the high, low and average noon spot rates for Cdn.\$1.00 dollars in terms of U.S. dollars, as reported by the Bank of Canada.

	Year ended Dec. 31, 2016	Year ended Dec. 31, 2015
	(U.S. \$)	(U.S. \$)
High.....	0.7972	0.8527
Low.....	0.6854	0.7148
Average.....	0.7548	0.7820

CORPORATE STRUCTURE

Golden Star Resources Ltd. was established under the *Canada Business Corporations Act* on May 15, 1992 as a result of the amalgamation of South American Goldfields Inc., a corporation incorporated under the federal laws of Canada, and Golden Star Resources Ltd., a corporation originally incorporated under the provisions of the *Business Corporations Act* (Alberta) on March 7, 1984 as Southern Star Resources Ltd. Concurrent with the amalgamation, the common shares of the Company were consolidated on a one-for-two basis. All references to “common shares” in this document mean the common shares of the Company after the amalgamation and the share consolidation. Golden Star’s principal and registered office is located at 150 King Street West, Suite 1200, Toronto, Ontario, M5H 1J9, Canada.

The following diagram depicts the organizational structure of Golden Star and its significant subsidiaries:



GENERAL DEVELOPMENT OF THE BUSINESS

OVERVIEW OF GOLDEN STAR

Golden Star indirectly holds a 90% equity interest in Golden Star (Bogoso/Prestea) Limited (“GSBPL”) and Golden Star (Wassa) Limited (“GSWL” and together with GSBPL, the “Foreign Operating Entities”), which respectively own (i) the Bogoso/Prestea property (“Bogoso/Prestea”), which contains the Prestea open pit gold mine (and satellite pits) including Prestea South and Mampon, the Prestea underground gold mine (“Prestea Underground”) and the Bogoso/Prestea refractory deposits (which have been suspended), and (ii) the Wassa property (“Wassa”), which contains the Wassa open pit gold mine (and satellite pits) and the Wassa underground gold mine (“Wassa Underground”), as well as processing plants at each of Bogoso/Prestea and Wassa. Golden Star also holds gold exploration interests elsewhere in Ghana and in Brazil, South America.

It’s the Company’s objective to transform into a low cost non-refractory gold mining company through the development of its projects. The Company is focused on reducing its operating costs and exploring, developing and operating gold properties in Ghana.

The Company’s operations transact business in U.S. dollars and other currencies and keep financial records in U.S. dollars. Golden Star’s accounting records are kept in accordance with International Financial Reporting Standards (“IFRS”) as issued by the

International Accounting Standards Board. The Company's fiscal year ends December 31. The Company is a reporting issuer or the equivalent in all provinces of Canada, in Ghana and in the United States, and file disclosure documents with securities regulatory authorities in Canada and Ghana and with the SEC.

THREE YEAR HISTORY

2014

On February 10, 2014, the Company announced its proven and probable mineral reserves and mineral resources as of December 31, 2013. The Company's mineral reserves declined to 3.9 million ounces from mining depletion and a lower gold price assumption of \$1,300 per ounce ("oz"). The Company's measured and indicated mineral resources declined to 6.4 million ounces with a lower gold price assumption of \$1,400/oz.

On February 21, 2014 the Company announced the approval and adoption by the Company's board of directors (the "Board") of a new by-law relating to provision of advance notice to the Company in certain circumstances where nominations of persons for election to the Board are made by shareholders of the Company (the "Advance Notice By-law"). The purposes of the Advance Notice By-law are to (i) facilitate an orderly and efficient annual general or, where the need arises, special meeting, process, (ii) ensure that all shareholders receive adequate notice of the proposed director and sufficient information regarding all director nominees, and (iii) allow shareholders to register an informed vote on director nominees after having been afforded reasonable time for appropriate deliberation.

On July 23, 2014, the Company filed a final short form base shelf prospectus permitting it to offer and sell from time to time certain securities for up to an aggregate offering price of \$250 million in one or more transactions during the 25-month period that the short form base shelf prospectus, including any amendments thereto, remains effective.

On September 10, 2014, the Company announced that GSWL had entered into an agreement with Ecobank regarding an additional \$25 million secured medium term loan facility ("Ecobank II Loan"). The Ecobank II Loan is repayable within 60 months of the initial drawdown period, with interest payable monthly at three month LIBOR plus 11%. GSWL paid Ecobank a transaction fee of 2.5% of the principal amount of the Ecobank II Loan.

On September 15, 2014, the Company announced the results of the underground mine at Wassa preliminary economic assessment (the "Wassa Underground PEA"). Highlights of the Wassa Underground PEA, assuming a gold price of \$1,300/oz, included an internal rate of return of 129% and an estimated net present value at 5% of \$350 million. The Board decided to commence a feasibility study and construct a development decline in 2015, with production decisions dependent on obtaining the necessary permits and environmental approvals.

On November 13, 2014, the Company announced the results of its preliminary economic assessment with respect to the West Reef resources of Prestea Underground (the "Prestea West Reef PEA"). The Prestea West Reef PEA is based on the development of a non-mechanized mining operation at the West Reef. Highlights of the Prestea West Reef PEA, assuming a gold price of \$1,200/oz, include an internal rate of return of 72% and a net present value at 5% of \$121 million.

2015

On March 26, 2015, the Company announced the results of its feasibility study on the development of an underground mining operation at its currently operating Wassa open pit mine in Ghana. The Wassa feasibility study estimates the project will produce an average of 163,000 ounces of gold per annum over its nine year production life with average cash operating costs of approximately \$780 per ounce.

On March 26, 2015, the Company announced its proven and probable mineral reserves and mineral resources as of December 31, 2014. The Company's mineral reserves were 1.9 million ounces at a gold price assumption of \$1,200/oz. The Company's measured and indicated mineral resources increased to 6.6 million ounces at a gold price assumption of \$1,400/oz.

On May 7, 2015, the Company announced that it secured \$150 million in funding arrangements with Royal Gold, Inc. ("Royal Gold") and its wholly-owned subsidiary, RGLD Gold AG ("RGLD"). The \$150 million in funding arrangements consist of a \$130 million stream transaction ("Stream Transaction") and a \$20 million term loan with Royal Gold ("Term Loan"). Pursuant to the Stream Transaction, RGLD has agreed to pay Caystar Finance Co. ("Caystar Finance"), a wholly-owned subsidiary of Golden Star, a \$130 million advance payment in exchange for a gold stream on the Bogoso/Prestea, Prestea Underground, Wassa and Wassa Underground mines. Under the Stream Transaction, Caystar Finance received an initial payment of \$40 million with the remaining \$90 million to be paid as spending on Wassa Underground and Prestea Underground progressed in line with an agreed payment schedule and as the Company satisfied the conditions under the Stream Transaction.

In exchange for the advance payment, Caystar Finance agreed to sell to RGLD an initial gold stream of 8.5% of gold production from Bogoso/Prestea, Prestea Underground, Wassa and Wassa Underground at a cash purchase price of 20% of spot gold price until 185,000 ounces have been delivered; thereafter a reduced gold stream of 5% of gold production from the properties at a cash purchase price of 20% of spot gold price until a further 22,500 ounces have been delivered; and thereafter a tail gold stream of 3% of gold production from the properties at a cash purchase price of 30% of spot gold price.

After 207,500 ounces of gold have been delivered in full, Caystar Finance will have the option to repurchase 50% of the tail stream, thereby reducing the tail stream to 1.5% of gold production. If RGLD elects not to sell 50% of the tail stream back to Caystar Finance, it will be required to increase the tail stream by 50% for the same price that Caystar Finance offered.

RGLD's advance payment is secured against GSBPL's and GSWL's assets. RGLD's security interest in the Wassa, Bogoso/Prestea and Prestea Underground assets is to be discharged once the aggregate offsets under the Stream Transaction equals the advance payment made by RGLD. RGLD will subordinate its security in support of up to \$25 million in financing from the existing Ecobank II Loan.

Pursuant to the Term Loan, Royal Gold provided Caystar Finance with a \$20 million secured term loan for a four-year period at an interest rate linked to the price of gold. The interest rate is calculated as the product of the average spot gold price over the quarter and 62.50% divided by 10,000 and shall not exceed 11.5%. At a gold price of \$1,200 this equates to an interest rate of 7.5%.

The Term Loan was used to retire outstanding a portion of the indebtedness under the Ecobank I Loan. The remaining \$18 million owing under the Ecobank I Loan was repaid with a portion of the upfront proceeds from the Stream Transaction.

Interest payments on the Term Loan will be made quarterly in arrears and the remaining capital portion of the Term Loan is due on the fourth anniversary of the effective date of the Term Loan, subject to an agreed quarterly 25-50% excess cash flow sweep from the third quarter of 2017 onwards. There are no early prepayment penalties.

The Term Loan is secured against GSBPL's and GSWL's assets. Royal Gold's security interest in GSBPL's and GSWL's assets is to be discharged once the obligations under the Term Loan have been fully performed and paid in full. Royal Gold will subordinate its security in support of up to \$25 million in financing from the existing Ecobank II Loan.

As part of the consideration for the Term Loan, Golden Star issued to Royal Gold an aggregate of 5 million warrants exercisable to purchase 5 million common shares of Golden Star at \$0.27 per share for a period of four years from the date of the issuance of the warrants (which occurred at the time of funding under the Term Loan).

On June 29, 2015, the Company secured the necessary permits to develop open pit operations at Prestea South. These surface operations began production in the third quarter of 2015, a year earlier than production from Prestea South was initially anticipated.

On July 3, 2015, the Company announced that due to frequent voltage fluctuations in the grid power supply over the previous three months, the ball mill at the Bogoso refractory plant sustained repeated significant damage culminating in a failure of the ball mill motor. The downtime at the plant impacted bacterial activity and gold recovery in the BIOX® circuit. The resulting impact of these throughput issues on the Company's cost structure compelled management to review its options at Bogoso/Pretea resulted in an early closure of refractory operations at the Bogoso refractory plant.

On December 31, 2015, the Company announced an amendment to the purchase and sale agreement entered into pursuant to the Stream Transaction. The amendment includes the addition of \$15 million to the stream advance payment and, at Caystar Finance's option, an additional \$5 million of stream financing, subject to certain conditions, including the procurement of a minimum of \$5 million of third party investment. The Streaming percentages were adjusted as follows to reflect the \$15 million additional advance payment: From January 1, 2016, Caystar Finance was obligated to deliver 9.25% of the Mines' production to RGLD at a cash purchase price of 20% of spot gold. From the earlier of January 1, 2018 or commercial production at the underground mines, Caystar Finance will deliver 10.5% of production at a cash purchase price of 20% of spot gold until 240,000 ounces have been delivered. Caystar Finance did not exercise its option for an additional \$5 million of stream financing.

2016

On January 15, 2016, the Company filed a technical report entitled "NI 43-101 Technical Report on a Feasibility Study of the Pretea Underground Gold Project in Ghana".

On February 23, 2016, the Company announced its mineral reserves and mineral resources estimate as of December 31, 2015. The mineral reserves were 2.1 million ounces at a gold price assumption of \$1,100/oz. The Company's measured and indicated mineral resources were 4.7 million ounces at a gold price assumption of \$1,300/oz.

On May 4, 2016, the Company entered into an agreement with a significant current account creditor to settle \$36.5 million of current liabilities. Under this agreement, the Company paid \$12 million and deferred the remaining \$24.5 million until January 2018, after which the outstanding balance will be repaid in equal installments over 24 months commencing in January 2018. Interest of 7.5% will accrue and be payable beginning in January 2017.

On May 9, 2016, the Company completed a bought deal public equity offering with BMO Capital Markets pursuant to which the Company issued 22,750,000 common shares for gross proceeds of \$15.0 million.

On July 12, 2016, the Company announced that pre-commercial production had commenced at Wassa Underground, effective July 10, 2016.

On August 3, 2016, the Company completed a public offering of 40,000,000 common shares at a price of \$0.75 per share. The underwriters for the offering exercised in full their option to purchase an additional 6,000,000 common shares. As a result, a total of 46,000,000 common shares were sold by the Company for gross proceeds of \$34.5 million. In addition, the Company completed a private placement of \$65.0 million aggregate principal amount of 7.0% convertible senior notes due 2021 (the "7% Convertible Debentures"). As part of the offering of the 7% Convertible Debentures, the Company exchanged \$42.0 million principal amount of its outstanding 5% convertible senior unsecured debentures due June 1, 2017 (the "5% Convertible Debentures") for an equal principal amount of the 7% Convertible Debentures. The principal amount exchanged is included in the total aggregate principal amount of the 7% Convertible Debentures issued. The Company did not receive any cash proceeds from the exchange.

On August 17, 2016, the Company announced that it had repaid in full the remaining \$22 million balance of its Ecobank II Loan with Ecobank Ghana Limited, using the proceeds from the financing transaction that closed on August 3, 2016.

On September 8, 2016, the Company announced it had appointed Manroc Developments Inc. ("Manroc") as the underground mining contractor for Pretea Underground. Manroc specializes in Alimak stoping, a mechanized shrinkage mining method, and has a reputation for safety and efficiency. Alimak stoping was selected as the mining method for Pretea Underground due to its safety and efficiency benefits over conventional shrinkage mining.

On October 27, 2016, the Company announced that it had received a mining lease for Mampon. Mampon is a high grade, oxide deposit, approximately 80 km to the north of the Company's carbon-in-leach processing plant at the Bogoso site. The Company was issued an environmental permit for Mampon on January 24, 2017. The Company expects to commence mining of Mampon in the second quarter of 2017 and conclude mining of Mampon in the third quarter of 2017.

During the fourth quarter of 2016, \$5.0 million principal outstanding of the 7% Convertible Debentures were converted into 5,555,666 common shares.

DESCRIPTION OF THE BUSINESS

GOLD SALES AND PRODUCTION

Golden Star produced 194,054 ounces of gold in 2016 and 222,416 ounces of gold in 2015. Currently, all of the Company's gold production is shipped to a South African gold refinery which arranges for the sale of its gold. The Company's gold is sold in the form of doré bars that average approximately 90% gold by weight with the remaining portion being silver and other metals. The sales price for spot sales is typically based on the London P.M. fix on the day of shipment to the refinery. Until the end of 2016, the Company sold 9.25% of its total gold production to RGLD at 20% of the spot price. During 2017, the Company will be selling 9.25% of its total gold production at 20% of the spot gold price to RGLD until the earlier of December 31, 2017 or the date upon which commercial production has occurred for both underground projects, at which time the Company will be selling 10.5% of its gold production at 20% of the spot gold price to RGLD until 240,000 ounces have been delivered. Thereafter, 5.5% of production at a cash purchase price of 30% of spot gold will be delivered. (See "Three Year History" section for more information on the Streaming Transaction).

GOLD PRICE HISTORY

The price of gold is volatile and is affected by numerous factors all of which are beyond the Company's control such as the sale or purchase of gold by various central banks and financial institutions, inflation, fluctuation in the relative values of the U.S. dollar and foreign currencies, changes in global and regional gold demand, and the political and economic conditions of major gold-producing countries throughout the world.

The following table presents the high, low and average London P.M. fixed prices for gold per ounce on the London Bullion Market over the past ten years, as well as the average gold price received by Golden Star.

Year	High	Low	Average	Average Price Received by Golden Star
2007	841	608	695	713
2008	1,011	713	872	870
2009	1,213	810	972	978
2010	1,421	1,058	1,225	1,219
2011	1,895	1,319	1,572	1,564
2012	1,792	1,540	1,670	1,662
2013	1,694	1,192	1,411	1,414
2014	1,385	1,142	1,266	1,261
2015	1,297	1,049	1,160	1,151
2016	1,366	1,077	1,251	1,211

BUSINESS STRATEGY AND DEVELOPMENT

The Company's business and development strategy is focused primarily on the exploration, development and operation of gold properties in Ghana, including the development of Prestea Underground, which is currently being developed. The Company also hold gold exploration properties in South America and other countries in West Africa.

The Company acquired the Bogoso property and began operating its mines and carbon-in-leach (“CIL”) processing plant in 1999. In 2001, The Company acquired the Prestea property located adjacent to the Bogoso property. In early 2002, GSBPL acquired a 45% interest in the Prestea Underground property, and since then the Company’s interest has increased to 90%.

In late 2002, the Company acquired Wassa and constructed the Wassa processing plant, which began commercial operation in April 2005. In July 2007, the Company completed construction and development of the Bogoso/Prestea refractory plant.

In October 2016, the Company was granted a mining lease for Mampon with a term of 10 years. Mampon is a high grade, oxide deposit, approximately 80 km to the north of the Company’s CIL processing plant at the Bogoso/Prestea site. The Company expects that the minerals mined from Mampon will be processed at the CIL processing plant at the Bogoso/Prestea site.

The refractory operation at Bogoso has been suspended in the third quarter of 2015. This is consistent with the Company’s strategy of lowering its cash operating cost per ounce by focusing future mining and processing on non-refractory ore types which generally entail lower processing costs than refractory ores.

The Company’s long-term objective is to continue the growth of its mining business through the appropriate development of lower operating cost projects. In the near term, the Company is focused on reducing its operating costs and developing the Prestea Underground project and the Mampon pit, and exploring its existing properties for opportunities to expand the mineral reserves and extend the mine lives of both Wassa and Prestea through further drilling.

Customers

Gold can be readily sold on numerous markets throughout the world and its market price can be readily ascertained at any time. Because there are a large number of gold purchasers, the Company is not economically dependent upon the sale of gold to any one customer.

Currently all of the Company’s gold production is shipped to a South African gold refinery. The refinery arranges for sale of the gold on the day it is shipped from the mine site and the Company receives payment for gold sold two working days after the gold leaves the mine site. A percentage of the Company’s gold production is also sold to RGLD pursuant to the Streaming Transaction. The global gold market is competitive with numerous banks and refineries willing to buy gold on short notice. Therefore, the Company believes that the loss of its current customer would not materially delay or disrupt revenues.

Employees

As of December 31, 2016, Golden Star, including its majority-owned subsidiaries, had approximately 1,176 full time employees and approximately 584 contract employees, for a total of 1,760, a 3% increase from approximately 1,253 full time and 454 contract employees at the end of 2015.

Competition

The Company’s competitive position depends upon its ability to successfully and economically acquire, explore, develop and operate new and existing gold properties. Factors that allow gold producers to remain competitive in the market over the long term include the quality and size of ore bodies, cost of operations, and the acquisition and retention of qualified employees. The Company competes with other mining companies in the acquisition, exploration, financing and development of new mineral properties. There is significant competition for a limited number of gold acquisition and exploration opportunities. The Company also competes with other mining companies for skilled mining engineers, mine and processing plant operators and mechanics, mining equipment, geologists, geophysicists and other experienced technical personnel.

Seasonality

All of the Company’s operations are in tropical climates that experience annual rainy seasons. Ore output from the Company’s surface mining operations can be reduced during wet periods. The Company’s mine plans anticipate periods of high rain fall each

year. Exploration activities are generally timed to avoid the rainy periods to ease transportation logistics associated with wet roads and swollen rivers.

MINING IN GHANA

Operations in Ghana

Ghana is situated on the west coast of Africa, approximately 600 kilometers (“km”) north of the Equator on the Gulf of Guinea. Ghana is a republic with a democratically elected government.

Ghanaian Ownership and Special Rights

Accra, the capital city of Ghana, is located almost exactly on the Prime Meridian. The former British colony changed its name from the Gold Coast to Ghana on achieving independence on March 6, 1957. Ghana is now a republic with a population of approximately 28 million people and a democratically elected government. English remains the official and commercial language.

The total land area of the country is approximately 238,000 square km and the topography is relatively flat. Ghana has a tropical climate with two rainy seasons and two dry seasons each year. The natural vegetation in the Western Region where Golden Star has its two operations is moist tropical forest, now found only in forest reserves, with a majority of the land converted to agricultural pursuits.

The Ghanaian legal system is generally modelled after and based on the British common law. The laws of Ghana include the Constitution, national laws passed by Parliament (or under authority granted by Parliament) and the common law of Ghana. The common law of Ghana includes customary rules which apply to particular communities in Ghana and which may or may not be consistent with the Constitution or a specific national law.

During the time in which the Company carried out mining operations at Wassa and Bogoso/Prestea, Ghana has generally been a politically and economically stable country. Further, in the Company’s experience, Ghanaian customs do not materially impact its operations in Ghana.

The Constitution of Ghana vests title in every mineral in its natural state to the Government of Ghana. The exercise of any mineral right in the form of reconnaissance, exploration or exploitation of any mineral in Ghana requires an appropriate licence or mineral right to be issued by the Government of Ghana acting through the Minister responsible for Lands and Natural Resources. The Minister responsible for Lands and Natural Resources administers, promotes and regulates Ghana’s mineral wealth through the Minerals Commission, a governmental organization designed in accordance with the Minerals Commission Act 1993 (Act 450) and the Minerals and Mining Act 2006 (“2006 Mining Act”).

Pursuant to the 2006 Mining Act, a number of regulations were passed in 2012 to clarify and implement provisions of the 2006 Mining Act. These regulations relate to matters such as licensing, local content, technical issues, mineral right holding costs, mine support services and payment of compensation to persons impacted by mining operations.

A corporate body duly registered in Ghana can apply to the Minerals Commission for a renewable exploration license granting exclusive rights to explore for a particular mineral in a selected area for an initial period not exceeding three years. When exploration has successfully delineated a mineral reserve, an application may be made to the Minerals Commission for conversion to a mining lease, granting a company the right to produce a specific product from the concession area, normally for a period of 20 to 30 years or a lesser period that may be agreed upon with the applicant.

Once a licence or mineral right is issued to an entity by the Government of Ghana, Ghanaian mining laws prevent that licence or mineral right from being transferred, assigned or mortgaged by the licensee or mineral right holder without the prior written approval of the Government of Ghana. The Ghana Minerals Commission is also required to maintain a public register of all applications, grants, variations, transfers, suspensions and cancellations of such licences or mineral rights. Official searches may

be conducted in the public register to obtain information regarding any licence or mineral right granted by the Government of Ghana.

In order to confirm the Company's title in its material mineral properties, the Company will from time to time obtain legal opinions from its local Ghanaian counsel regarding such title. With respect to each of Wassa, Wassa Underground, Prestea, Prestea Underground, Mampon, and Bogoso (where refractory mining is currently suspended), on February 7, 2017 the Company received title opinions from Ghanaian counsel confirming that GSBPL or GSWL (as applicable) is the holder of the applicable mineral rights in each property and that such mineral rights are in good standing, and are subject only to those statutory rights and options conferred on the Government by the 2006 Mining Act. In order to render such opinions, Ghanaian counsel reviewed, among other things, the mining leases relating to the material resource properties, and conducted official title searches at appropriate governmental registries. In addition, the Company relies on its in-house tenement officers and the services of local experts, including local external legal counsel, to ensure that its operating subsidiaries in Ghana comply with applicable legal and regulatory requirements relating to the ownership and operation of its material mineral properties and assets in Ghana.

The Company has obtained from the Government of Ghana: (i) two mining leases over Bogoso dated August 21, 1987 and August 16, 1988, each for a term of 30 years, subject to renewal; (ii) three mining leases over Wassa, with the first lease dated September 17, 1992 for a term of 30 years, subject to renewal, and the two other leases dated December 31, 2012, for a term of 6 years, subject to renewal; and (iii) one mining lease over Mampon, dated October 17, 2016, for a term of 10 years, subject to renewal. These mining leases are in good standing and the Company expects to renew the two mining leases over Bogoso dated August 21, 1987 and August 16, 1988 in the ordinary course of business.

With respect to Wassa and Bogoso/Prestea, in addition to mining leases, the Company requires the following permits, licences or other regulatory approvals to be able to carry out business operations in Ghana: (i) environmental permits; (ii) approved environmental management plans and environmental certificates; (iii) reclamation bonds and approved reclamation plans; (iv) water usage permits; (v) business operating permits; (vi) licences to export, sell or dispose of minerals; (vii) permits/licences to retain a specified percentage of mineral export proceeds for purposes of debt servicing, dividend payment to foreign shareholders and acquisition of plant and machinery for the mining project; (viii) permits to operate foreign exchange retention accounts with a trustee bank; and (ix) immigration quotas to employ a specified number of non-Ghanaians to work on mining projects.

Golden Star, through its applicable subsidiaries, holds all licences, permits, and regulatory approvals necessary in order to carry on mining operations at or in relation to the mines located on the Prestea, Prestea Underground, Wassa, Wassa Underground and Bogoso (where refractory mining is currently suspended) projects, as currently carried out and to transport, handle, export and sell the gold produced from such mines. The Company is not aware of significant factors unique to the Company or its properties that may affect access, title, or the right or ability to perform the Company's proposed work in respect of its mineral projects. The Company conducts its operations in all material respects in compliance with applicable Ghanaian laws.

The 2006 Mining Act requires that any person who intends to acquire a controlling share of the equity of any mining company that has been granted a mineral right, must first give notice of its intent to the Government of Ghana and also obtain its consent prior to acquiring a controlling share.

Under the 2006 Mining Act, the Government of Ghana holds a 10% free-carried interest in all companies that hold mining leases. The 10% free-carried interest entitles the Government to a pro-rata share of future dividends. The Government has no obligation to contribute development capital or operating expenses. GSBPL and GSWL owe \$968.6 million and \$173.7 million, respectively, to Golden Star or its subsidiaries as of December 31, 2016, for past advances, and these amounts would be repaid before payment of any dividends to the Government of Ghana.

Under the 2006 Mining Act, the Government of Ghana is empowered to acquire a special or golden share in any mining company. The special share would constitute a separate class of shares with such rights as the Government and the mining company might agree. Though deemed a preference share, it could be redeemed without any consideration or for a consideration determined by the mining company and payable to the holder on behalf of the Government of Ghana.

In the absence of such agreement, the special share would have the following rights:

- it would carry no voting rights but the holder would be entitled to receive notice of, and to attend and speak at, any general meeting of the members or any separate meeting of the holders of any class of shares;
- it could only be issued to, held by, or transferred to the Government of Ghana or a person acting on behalf of the Government;
- the written consent of the holder would be required for all amendments to the organizational documents of the company, the voluntary winding-up or liquidation of the company, or the disposal of any mining lease, or the whole or any material part of the assets of the company;
- it would not confer a right to participate in the dividends, profits or assets of the company or a return of assets in a winding up or liquidation of the company; and
- the holder of a special share may require the company to redeem the special share at any time for no consideration or for a consideration determined by the company.

GSBPL and GSWL have not issued, nor to date been requested to issue, a special share to the Government of Ghana. To Golden Star's knowledge, for as long as Golden Star has been operating in Ghana, no mining company has been requested to issue a special share.

The Government of Ghana has a pre-emptive right to purchase all gold and other minerals produced by mines in Ghana. The purchase price would be agreed by the Government of Ghana and the mining company, or the price established by any gold hedging arrangement between the company and any third party approved by the Government, or the publicly quoted market price prevailing for the minerals or products as delivered at the mine or plant where the right of pre-emption was exercised. The Government of Ghana has agreed to take no pre-emptive action pursuant to its right to purchase gold or other minerals so long as mining companies sell gold in accordance with certain procedures approved by the Bank of Ghana. The Company sells its gold in compliance with these procedures.

Oversight of Foreign Operating Entities

The Company's board of directors and senior management team have considerable experience conducting business in Ghana and elsewhere in Africa and certain members of the Company's senior management team reside in Ghana (for additional information, see the management information circular of the Company dated March 13, 2017 filed under the Company's profile on SEDAR at www.sedar.com). In addition, Mr. Sam Coetzer, the President, Chief Executive Officer and a director of Golden Star, is also a director of the Foreign Operating Entities. Golden Star maintains oversight over the operations and assets of the Foreign Operating Entities by electing the directors and appointing the officers of those subsidiaries, as well as removing such directors and officers from time to time. Golden Star, as the parent entity, holds the majority of the funds of the consolidated corporate group in its North American bank accounts. Golden Star generally provides funds to the Foreign Operating Entities as needed through intercompany loans and receives funds from its foreign subsidiaries as loan repayments. In addition, Golden Star provides management and other services to the Foreign Operating Entities and is reimbursed for those expenses and services. Management of Golden Star directs, and must consent to, all material decisions being made at the Foreign Operating Entity level. As a result, the operations and business objectives of Golden Star and the Foreign Operating Entities are effectively aligned.

As a reporting issuer in the United States, the Company must comply with the controls and reporting provisions set out in the Sarbanes-Oxley Act of 2002. As such, the Company has established a control matrix for each mining site (and controls at each corporate level). The Company's internal controls include 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 and that are intended to 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 minute books and corporate records of the Foreign Operating Entities are maintained with those subsidiaries and are under the indirect control of Golden Star.

The Company hires and engages local experts and professionals (i.e. legal and tax consultants) to advise the Company with respect to current and new regulations in Ghana in respect of banking, financial and tax matters. The Company utilizes established and well recognized financial institutions in both Canada and Ghana. There are no material differences between day-to-day banking

operations in Ghana and those in Canada. The Company also uses local counsel and local consultants to assist it with its government relations. Members of management of the Company also have direct contacts and good relationships at all relevant levels of Government in Ghana.

As a result of the foregoing, the Company is of the view that any risks associated with its corporate structure and its foreign operations are minimal and effectively managed by Golden Star based on the controls described above.

Ghanaian Royalty

Ghanaian law sets mineral royalties at a flat rate of 5% of mineral revenues. The Company incurred royalty expense of \$12.1 million and \$12.9 million in 2016 and 2015, respectively.

Ghanaian Corporate Tax

The corporate income tax rate for 2016 has been consistent with 2015, however in 2012 the Government increased the corporate income tax rate from 25% to 35% of taxable income for mining companies. Additionally, the use of capital allowances (tax depreciation) was changed in 2012 to be deductible at a flat rate of 20% over a five year period instead of an 80% deduction in the year that the capital spending was incurred and the majority of the remaining 20% deductible over the following two years.

A new Income Tax Act (“ITA”) was passed by Ghana’s parliament and assented to by the President on September 1, 2015, on which date the ITA entered into force. The implementation of the ITA commenced on January 1, 2016. The introduction of the ITA did not impact the Company’s tax expenses for the year ended December 31, 2016. The significant change in the ITA that may affect the Company is that tax depreciation claims on plant, equipment and mining properties will be included in losses which expire after five years rather than being included in a capital allowance balance that carries forward indefinitely.

During 2012, the Government enacted new tax regulations that would disallow expenditures from one mining area as a deduction from revenues in a separate mining area belonging to the same company in determining the company’s taxable income for tax purposes.

In 2012, the Government of Ghana announced its intent to introduce a 10% windfall profit tax on mining companies in 2013. As a result of the decline in spot gold prices during 2013 the Government of Ghana suspended its implementation of the proposed windfall profit tax. However if gold prices increase, the Government of Ghana may proceed with its plan to implement the proposed 10% windfall profit tax.

In 2011, the Government established a tax stability renegotiation team to review the existing tax stability agreements of some major mining companies operating in Ghana. While the Company’s mines do not have tax stability agreements, it is not clear at this time if the tax stability renegotiation team will review the Company’s Deeds of Warranty which specify certain tax agreements for the Company’s properties.

Environmental and Other Laws and Regulations

In the various jurisdictions where the Company operates, all phases of its exploration, project development, and operations are subject to environmental laws and regulations. These laws and regulations may define, among other things, air and water quality standards, waste management requirements, and closure and rehabilitation obligations. In general, environmental legislation is evolving to require stricter operating standards, more detailed socio-economic and environmental impact assessments for proposed projects, and a heightened degree of accountability for companies and their officers, directors, and employees for corporate social responsibility, and health and safety. Changes in environmental regulations, and the way they are interpreted by the regulatory authorities, could affect the way we operate, resulting in higher environmental and social operating costs that may affect the viability of the Company’s operations.

Environmental matters in Ghana, including those related to mining, fall primarily under the oversight of the Environmental Protection Agency (“EPA”), as well as the Minerals Commission and their Mines Inspectorate Division. The EPA has acts and regulations that govern, among other things, environmental and socioeconomic impact assessments and statements, environmental management plans, emissions to the environment, environmental auditing and review, and mine closure and reclamation, to which the Company’s operations are subject. Additional provisions governing mine environmental management are provided in the Minerals and Mining Act, 2006, and Minerals and Mining Regulations, 2012.

The Company noted a continuing trend toward substantially increased environmental requirements and evolving corporate social responsibility expectations in Ghana, including the requirement for more permits, analysis, data gathering, community hearings, and negotiations than have been required in the past for both routine operational needs and for new development projects. The trend to longer lead times in obtaining environmental permits has reached a point where the Company is no longer able to accurately estimate permitting times for the Company’s planning purposes. The increases in permitting requirements could affect the Company’s environmental management activities including, but not limited to, new projects, tailings storage facilities, water management, and rehabilitation and closure planning implementation at its mines.

The Company’s mining, processing, development, and mineral exploration activities are also subject to various laws governing prospecting, development, production, taxes, labor standards, occupational health and safety, land rights of local people and other matters. New rules and regulations may be enacted or existing rules and regulations may be modified and applied in a manner that could have an adverse effect on the Company’s financial position and results of operations.

The Company use hazardous chemicals in the Company’s gold recovery activities, and thus generate environmental contaminants that may adversely affect air, land and water quality. To mitigate these effects, the Company has established objectives to achieve regulatory requirements in the Company’s exploration, development, operation, closure, and post-closure activities so that its employees, the local environment, and its stakeholder communities are protected and that the next land use contributes to the sustainability of the local economy. In order to meet the Company’s objectives, Golden Star:

- educates its managers so that they are committed to creating a culture that makes social and environmental matters an integral part of short-term and long-term operations and performance management systems;
- works with its employees so they understand and accept environmental and social policies and procedures as a fundamental part of the business;
- signed and publicly stated its support for the UN Global Compact and completed its commitments that are provided in our communications on progress;
- establishes, and continues to improve, operating standards and procedures that aim to meet or exceed requirements in relevant laws and regulations, the commitments made in our environmental impact statements, environmental and socioeconomic management plans, rehabilitation and closure plans, and any international protocols to which it is a signatory;
- incorporated environmental and human rights performance requirements into relevant contracts;
- provides training to employees and contractors in environmental matters;
- regularly prepares, reviews, updates, and implements site-specific environmental management and rehabilitation and closure plans;
- works to progressively rehabilitate disturbed areas in conformance with site-specific environmental plans, in the context of the life of mine plans;
- consults with local communities and regulators to inform on its environmental management policies and procedures;
- regularly reviews its environmental performance;
- conducts quarterly audits to review performance and safety of our tailings facility by the engineer on record as well as quarterly audits by a third party auditor;
- had annual audits by both the EPA and Minerals Commission of health, safety and environment;
- completes its resettlement projects in accordance with the International Finance Corporation Performance Standard 5 on Land Acquisition and Involuntary Resettlement; and

- publicly reports its social, health, safety and environmental performance.

Rehabilitation activities were ongoing at both Wassa and Bogoso/Prestea during 2016 aiming to reduce some of the long-term liabilities. The Company's ongoing rehabilitation includes re-profiling waste dumps, capping reactive rock with compacted oxide material, topsoil spreading, and planting for both slope stabilization and long-term rehabilitation. The Company's consolidated reclamation expenditures totaled \$5.5 million, \$2.9 million, and \$3.6 million in 2016, 2015, and 2014, respectively.

Corporate Social Responsibility

In keeping with the Company's health, safety and well-being, environmental, and community relations and human rights policies, the Company strives at all times to conduct its business as a responsible corporate citizen. Golden Star believes its ongoing success in Ghana depends on its continuing efforts to build good relations with its local stakeholder communities, and by reviewing broader stakeholder comments and addressing stakeholder concerns in its developing projects and ongoing operational activities. The Company believes its success as an employer, as a neighbor, and as an important part of the local and national economy is furthered by contributing to the diversification of the local economy with initiatives such as its Golden Star Oil Palm Plantation ("GSOPP") and by its support of community-driven improvement projects through its Golden Star Development Foundation (the "Foundation"). During 2016, the Foundation worked with the Company's local Community Mine Consultation Committees to fund and sponsor several community-driven projects including domestic waste collection vehicles, community centres, the delivery of medical supplies to clinics, and scholarships for local students. In recognition of our long-running commitment to community development, in early 2017, the Golden Star Policy on Community Development and Support was implemented. This Policy captures the Company's commitment to ongoing contribution to both the Golden Star Development Foundation and the Golden Star Oil Palm Plantation, amongst other commitments.

GSOPP continued to advance during 2016 and the Company celebrated the 10th anniversary of GSOPP in the year. GSOPP now encompasses 1,053 hectares of palm oil trees, employs 317 small holder or out-grower farmers, and 350 part-time contract workers. The majority of the plantations are now in fruiting maturity, with over 41,000 tonnes of fresh fruit bunches produced since inception. Yields remain higher than national averages, and farmer incomes have increased 33% from 2015 as palms reach maturity.

Golden Star also supports a skills training program for stakeholders aimed at local economic development. The Golden Star Skills Training and Employability Program ("GSSTEP") has since its inauguration in 2009 provided employable skills to 568 youth in skills ranging from commercial cookery and carpentry, to mobile phone repairs and mining disciplines.

In addition to the Company projects, in 2016 Golden Star continued to participate in a number of partnership projects to expand capacity, and development opportunities for host communities. Under the Prevention is Better Than Cure partnership, Golden Star continued its collaboration with Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), the Ghana Health Service ("GHS") and other private/public partners. The main focus in 2016 was ongoing support to the first of its kind in Ghana, a prevention focussed community clinic at Akyempim that combines both curative and preventative health approaches. Also under the partnership, breast cancer screening for 4,049 women and girls (in collaboration with the Golden Star Ladies Club and other sponsors) was conducted in the year, bringing the three year total to over 10,000 women and girls screened, potentially saving as many as 270 lives.

In 2016, the Company continued to focus on increasing local procurement participation and local content at its sites. A pilot initiative in the Company's Prestea operational area, with the objective of local value retention, incorporated a targeted identification of local business development opportunities, and capacity building. This program has given rise to a local contracting collaboration ("LOCOMS"), where 18 local companies supply haulage trucks, hire equipment and provide dust suppression and sanitation services to the Company's operations. The LOCOMS companies directly employ over 250 people from the local community who were previously considered long-term unemployed youth.

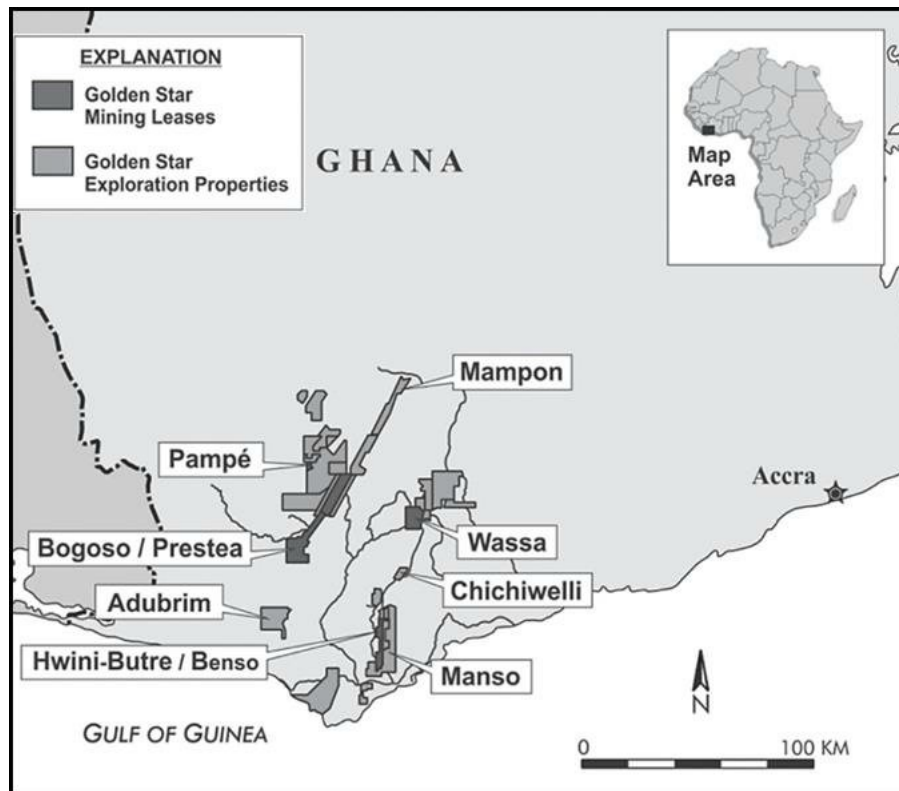
The Company's commitment to the development of its stakeholder communities demonstrates its dedication to Ghana and to sharing the success of its operations with the local communities. As the Company continues to expand its community development

programs, more local people and communities are integrated into its economic development and outreach programs, with the objectives of sustainable outcomes and enduring value.

DESCRIPTION OF THE PROPERTIES

MAP OF OPERATIONS AND PROPERTIES

The map below shows the locations of, among other mineral concessions, Bogoso/Prestea and Wassa. Golden Star's material properties are described in further detail below.



GOLDEN STAR MATERIAL PROPERTIES

The technical and scientific information in this Annual Information Form has been prepared under the supervision of, or reviewed by, Dr. Martin Raffield and Mr. Mitch Wasel, each of whom is a QP under NI 43-101, and an officer of the Company.

Technical Reports

Unless otherwise stated, the information in this section in respect of Wassa, Bogoso/Prestea and Prestea Underground is based upon the following technical reports (collectively, the "Technical Reports"):

- *Wassa* – "NI 43-101 Technical Report on a Feasibility Study of the Wassa open pit mine and underground project in Ghana" effective date December 31, 2014 and filed on May 8, 2015 and prepared by SRK Consulting ("SRK") under the supervision of Mike Beare, Rod Redden, Neil Marshall, Chris Bray and Paul Riley of SRK and S. Mitchel Wasel, each of whom is a QP for the purposes of NI-43-101 (the "Wassa Underground Feasibility Study"); and
- *Prestea Underground* – "NI 43-101 Technical Report on a Feasibility Study of the Prestea underground gold project in Ghana" effective date November 3, 2015 and filed on January 22, 2016 and prepared by SRK under the supervision of Yao Hua (Benny) Zhang, Ken Reipas, Dr. John Willis, Dr. Tony Rex, Neil Marshall, Jane

- Joughin and Kris Czajewski of SRK and Brian Prosser of MVS and Dr. Martin P. Raffield and S. Mitchel Wasel, each of whom is a QP for the purposes of NI-43-101 (the “Prestea Underground Feasibility Study”); and
- *Bogoso/Prestea* – “NI 43-101 Technical Report on Resources and Reserves Golden Star Resources Ltd., Bogoso Prestea Gold Mine, Ghana” effective date December 31, 2013 and filed on March 14, 2014 and prepared by SRK under the supervision of Richard Oldcorn, Chris Bray, Dr. John Arthur of SRK and Yan Bourassa, each of whom is a QP for the purposes of NI 43-101 (the “Bogoso/Prestea Technical Report”).

The Technical Reports have been filed with the Canadian securities regulatory authorities pursuant to NI 43-101 and are available for review electronically on the System for Electronic Document Analysis and Retrieval (“SEDAR”) website at www.sedar.com.

Wassa Gold Mine

Project Description and Location

Golden Star, through its subsidiary GSWL, owns 90% of and operates the Wassa mine (the “Wassa Mine”), and the CIL processing plant in the Western Region of Ghana. Wassa includes several open-pit mines, a 2.7 million tonne (“Mt”) per annum processing plant, a tailings storage facility, equipment repair shops and ancillary facilities, including an administration building, a warehouse, a maintenance shop, an 8 megawatt stand-by power generating facility and an employee residential complex. The Company has been mining the Wassa open pits since commissioning the processing plant in 2005. Mining is currently at Wassa Main, which is within 500 m of the plant. Exploration and development drilling below the Wassa Main has been ongoing since late 2011.

The Wassa complex is located near the village of Akyempim in the Wassa East District in the Western Region of Ghana. It is 62 km north of the district capital, Dabobase, and 40 km east of Bogoso. It is located 80 km north of Cape Coast and 150 km west of the capital Accra. The main access to the site is from the east, via the Cape Coast to Twifo-Praso road, then over the combined road-rail bridge on the Pra River. There is also an access road from Takoradi in the south via Mpohor.

In 2015, SRK prepared Feasibility Study regarding the economic viability of an underground mine beneath the Wassa pit. The Wassa feasibility study envisions an underground mine that will operate in conjunction with the existing open pit mine for approximately eight years.

Accessibility, Climate, Local Resources, Infrastructure and Physiography

Wassa Main is currently an operating open pit mine yielding 1.0Mt of total material per month, with the required services, infrastructure, and community support already in place. The following are relevant to the assessment of resources and infrastructure:

- access is via the public road network that extends on to the mine complex;
- electricity and water are available;
- surface infrastructure in the area consists of a variety of government, municipal, and other roads with good overall access;
- processing will be carried out at the Wassa processing plant;
- tailings will be stored in the current tailing storage facility and the new tailing storage facility, approved in November 2015;
- waste rock generated at the site will be backfilled into former pit areas or placed in extensions to existing waste dumps, near the Wassa open pit;
- the Wassa expansion project incorporating commercial level underground mining, pit expansion and waste dump extension was invoiced for permitting by the EPA in November 2016; and
- the extensive history of mining in Ghana provides opportunities to obtain skilled underground mine workers.

The climate in the project area is classified as wet semi-equatorial. The area experiences a bi-modal rainfall pattern, with peaks in March to July and September to October.

Analysis of available rainfall data, obtained from the Ateiku Meteorological survey (1944 to 2009) indicates that the average annual rainfall is 1,996 (\pm 293) millimetres (“mm”). The wettest month of the year is generally June, with an average rainfall of about 241 (\pm 85) mm, while January is the driest month of the year with an average rainfall of about 31 (\pm 35) mm.

Under such climatic conditions surface mining operations can generally continue year round with short breaks during storms, most of which are short-lived and may be experienced throughout most of the year. Underground mining operations will not be directly affected by storms because storm water management infrastructure is in place at surface to divert runoff from mine accesses. Relative humidity is fairly constant throughout the year, ranging from 88% to 90%.

The project area is characterized by gently rolling hills with elevations up to 1,000 m and 1,100 m above sea level, incised by an extensive drainage network. The natural vegetation of the Wassa project area is an ecotone of the moist, semi-deciduous forest and wet rainforest zones. It has been degraded due to anthropogenic activities, giving way to broken forest, thickets of secondary forest, forb re-growth, swamps in the bottom of valleys, and cleared areas. Extensive subsistence farming occurs throughout the area, with plantain, cassava, pineapple, maize, and cocoyam being the principal crops. Some small scale cultivation of commercial crops is also carried out, with cocoa, teak, coconuts and oil palm being the most common. Forest patches are present on the steep slopes and in areas unsuitable for agriculture.

Environmental assessments carried out in the project area over the last two decades indicate that the biodiversity of the Wassa operational area is of low ecological significance and conservation status.

History

Wassa

The Wassa area has witnessed several periods of local small scale and colonial mining activity from the beginning of the 20th century and mining of quartz veins and gold bearing structures are evident from the numerous pits and adits covering the Wassa Lease area.

From 1988, the property was operated as a small scale mining operation with a gravity gold recovery circuit by a Ghanaian company, Wassa Mineral Resources Limited (“Wassa MRL”). In 1993, Wassa MRL was looking for a capital partner to further develop the mining lease, and invited the Irish companies Glencar Exploration Limited (“Glencar”) and Moydow Ltd. (“Moydow”) to visit the concession. Following this visit, Satellite Goldfields Limited (“SGL”) was formed between Wassa MRL, Glencar and Moydow. The mining lease, which is valid for a 30 year period expiring in 2022, was assigned by Wassa MRL to SGL.

Extensive satellite imagery and geophysical interpretations were carried out, which identified a strong gold target (>1 g/t Au). Exploration drilling commenced in February 1994, and by March 1997 a total of 58,709 m of reverse circulation (“RC”) and diamond drilling (“DD”) had been completed. In September 1997, consulting engineers Pincock, Allen and Holt completed a feasibility study, which determined a proven and probable mineral reserve of 17.6 Mt at 1.7 g/t Au, for a total of 932,000 contained ounces of gold. The reporting code, and key assumptions and parameters used to report this are not known and a QP has not done sufficient work to classify this historical estimate as a current mineral resource or mineral reserve. Hence, the Company is not treating the historical estimate as a current mineral resource or mineral reserve. Construction of Wassa Main was initiated in September 1998 after Glencar secured a \$42.5 million debt-financing package from a consortium of banks and institutions.

Wassa Main was originally developed as a 3 Mt open pit heap leach operation with a forecasted life of mine (“LoM”) gold production of approximately 100,000 ounces per annum. The first material from the pit was mined in October 1998. After approximately one year of production, it became evident that the predicted heap leach gold recovery of 85% could not be achieved, mainly due to the high clay content of the resource and poor solution management. After a number of attempts to improve the recovery, including increased agglomeration and doubling the leach solution application rate, it was concluded that the achievable gold recovery by heap leach was between 55% and 60%. The combined effect of the lower than planned gold recovery and lull in the gold price at the time resulted in Glencar not being able to service debt to its creditors. In early 2001, the creditors together with Glencar decided to sell the project to recover some of the accumulated debt. Mining ceased at the end of October 2001.

When the secured senior creditors exercised security over the project in 2001, the project was put up for sale. Upon completion of the acquisition of Wassa Mine by the Company in 2002, a further exploration program was undertaken. Both of these exploration programs formed part of a feasibility study that was completed in July 2003, which demonstrated the economic viability of reopening and expanding the existing open pits, and processing the material through a conventional CIL circuit. Wassa has been operating as a conventional CIL milling operation since late April 2005.

Geological Setting

Wassa lies in the Birimian Province of the West African Precambrian Shield, within the southern portion of the Ashanti Greenstone Belt along the eastern margin of the belt within a volcano-sedimentary assemblage located at proximity to the Tarkwaian basin contact. The eastern contact between the Tarkwaian basin and the volcano-sedimentary rocks of the Sefwi group is faulted, but the fault is discrete as opposed to the western contact of the Ashanti belt where the Ashanti fault zone can be several hundred meters wide.

The lithologies of the Wassa assemblage are predominantly comprised of mafic to intermediate volcanic flows which are interbedded with minor horizons of volcanoclastics, clastic sediments such as wackes and magnetite rich sedimentary layers, most likely banded iron formations intercalated with mudstones. The magnetic signature of the Ashanti belt is relatively high in comparison to the surrounding Birimian sedimentary basins such as the Kumasi basin to the west of the Ashanti belt and the Akyem Basin to the East.

Rock assemblages from the southern area of the Ashanti belt were formed between a period spanning from 2,080 to 2,240 million years, with the Sefwi Group being the oldest rock package and the Tarkwa sediments being the youngest. The Ashanti belt is host to numerous gold occurrences, which are believed to be related to various stages of the Eoeburnean and Eburnean deformational event. Structural evidences and relationships observed in drill core and pits at Wassa would suggest the mineralization to be of Eoeburnean timing while other known deposits in the southern portion of the Ashanti belt, such as Bogoso/Prestea is considered to be of Eburnean age.

Exploration

In addition to the drilling (as described below), extensive exploration work has been conducted on and around the Wassa Mine. Previously, several airborne and ground geophysical surveys consisting of aero-magnetics and radiometrics were conducted. The geophysical surveys targeted geochemical anomalies which had previously been identified following multiple stream and soil geochemical sampling programs, which are described below for each concession.

Modern exploration programs at Wassa began in the early 1990s with satellite imagery and geophysical surveys which identified geophysical lineaments and anomalies over small scale and colonial mining areas. Stream and soil geochemistry sampling programs were conducted over the geophysical anomalies and identified two linear gold in-soil anomalies.

Exploration drilling commenced in February 1994, and by March 1997, a total of 58,709 m of RC and DD had been completed. In September 1997, consulting engineers Pincock, Allen and Holt completed a feasibility study. Only minimal exploration work was conducted by SGL between the completion of the feasibility study in 1997 and the 2001 bankruptcy.

In March 2002, Golden Star started an exploration program consisting mainly of pit mapping and drilling below the pits to test the continuity of mineralization at depth and with the aim to increase the quoted reserves and resources for the feasibility study.

Simultaneous with the resource drilling program, which targeted resource increases in the pit areas, Golden Star also undertook grass roots exploration along two previously identified mineralized trends. The 419 area was located south of the main pits and the South-Akyempim anomaly was a soil target which had never been previously drilled and was located west of the main pits. Deep auger campaigns were also undertaken in the Subri forest reserve which is located in the southern portion of Wassa.

In March and April 2004, a high resolution helicopter geophysical survey was carried out over the area comprising Wassa and surrounding prospecting and reconnaissance licenses. Five different survey types were conducted, namely: Electromagnetic,

Resistivity, Magnetic, Radiometric and Magnetic Horizontal Gradient. The surveys consisted of 9,085 km of flown lines covering a total area of 450 square km. The geophysical surveys identified several anomalies with targets being prioritized on the basis of supporting geochemical and geological evidence.

The exploration program in 2005 continued to focus on drill testing anomalies identified by the airborne geophysical survey as well as infill drilling within the pit area. Drilling was carried out by a combination of DD, RC and reverse air blast (“RAB”) techniques. The following years were subject to more infill and resource definition drilling in the pit areas at Wassa until the 2011 exploration program was undertaken, at which point a shift toward drilling deep high grade targets below the pits became the main focus of the exploration programs.

Since the discovery of higher grade gold mineralization beneath the current Wassa pits in 2011, the exploration focus has shifted to delineating the controls and geometry of these zones. Drilling from 2011 to 2014 was focused on the extent of the gold mineralization beneath the pits in addition to the extent of which the projected plunge of the structures extended down to the south. In 2015, exploration conducted at Wassa was limited to infill drilling of the first planned stopes along the F Shoot and B Shoot trends. The 2015 drilling along the F Shoot trend was successful in growing the target area of the F Shoot trend significantly.

On February 4, 2016, the Company announced the results of its F Shoot drilling at Wassa Underground. The F Shoot is characterized by up to three parallel zones. The results from this phase of drilling showed that grades and thicknesses amenable to underground mining and extended the F Shoot target north of the reserve. Additional drilling was planned from both surface and underground to better delineate the higher grade portions of the structure. On July 10, 2016, the first stope in the upper part of the F Shoot was mined using longitudinal longhole open stoping. Commercial production was achieved at Wassa Underground, effective January 1, 2017, and the project construction of Wassa Underground, including the installation of all ancillary infrastructure, was complete and operational, in accordance with the Company’s planned schedule and budget. Gold production is anticipated to continue to ramp up during 2017 as Golden Star’s mining operations begin to access the B Shoot, which is a higher grade area of the Wassa Underground ore body. The Company plans to begin longitudinal stoping of the B Shoot in the first quarter of 2017, with the larger, transverse stopes expected to be accessed in the third quarter of 2017.

Mineralization

The Wassa mineralization is subdivided into a number of domains, namely; F Shoot, B Shoot, 242, South East, Starter, 419, Mid East and Dead Man’s Hill. Each of these represents discontinuous segments of the main mineralized system. The South Akyempim (“SAK”) deposits are located approximately 2 km to the southwest of the Wassa Main deposit on the northern end of a well-defined mineralized trend parallel to the Wassa Main trend. The mineralization is hosted in highly altered multi-phased greenstone-hosted quartz-carbonate veins interlaced with sedimentary pelitic units.

Mineralization within Wassa Main is structurally controlled and related to vein densities and sulphide contents. The mineralization generally consists of broadly tabular zones containing dismembered and folded ribbon-like bodies of narrow quartz vein material. Three vein generations have been distinguished on the basis of structural evidence, vein mineralogy, textures and associated gold grades.

Drilling

Drilling is carried out by a combination of DD, RC and RAB techniques. In general the RAB method is used at early stages for follow up to soil geochemical sampling and during production for testing contacts and mineralization extensions around the production areas and has a maximum drilling depth of around 30 m. The RC pre-collar diamond core tail drilling is used as the main method for obtaining suitable samples for mineral resource estimation and is carried out along drill lines spaced between 25 and 50 m apart along prospective structures and anomalies defined from soil geochemistry and RAB drilling results. RC drilling is typically extended to depths in the order of 100 to 125 m. The DD method is used to provide more detailed geological data and in those areas where more structural and geotechnical information is required. Generally the deeper intersections are also drilled using DD and, as a result, most section lines contain a combination of RC and DD drilling.

RC and DD drilling were carried out in double shifts and during every shift a Golden Star geologist was on site to align the drill rig and check the drill head dip and azimuth. Downhole surveying was conducted using a Single Shot Camera (“SSC”), for RC and DD holes at the bottom of holes exceeding 30 m depths and then taken progressively every 30 m up hole. The SSC recorded the dip and azimuth for each of the surveys on a film image, this image was validated and recorded by the Company geologists or was recorded by a Reflex survey instrument and captured in the database as well as being filed in the respective drillhole file folders on site.

Drilling depths at Wassa Main have generally been less than 250 m, but with the discovery of higher grades below Wassa Main in late 2011, hole depths have increased. In the first-half of 2014, two gyro survey instruments were utilized to resurvey several of the deeper holes. In total 153 holes, drilled during 2012 to 2014, were resurveyed. The gyro survey readings were conducted every 10 m both in and out of the hole and the values were then averaged. The 153 gyro surveyed holes were updated in the database and subsequently used for the resource estimates. The gyro surveys showed that there was some deviation in the holes below 250 m drilled depth. Deviations varied from location to location depending on drill orientation with a general tendency for the hole to steepen and swing to the north.

The drilling in 2015 was designed to infill the existing drill spacing within the first planned underground mining stopes along the F and B Shoot trends. The F Shoot area was sparsely drilled on 25 meter drill fence spacing which was closed with the 2015 drilling to a nominal 12.5 meter fence spacing. Although the section spacing along the F Shoot trend was tightened up to 12.5 meter spacing, the holes along the drill fence often exceeded 12.5 meters and these gaps will be closed using DD from the underground development, once established. The Wassa Underground development commenced in the middle of 2015. Pre-commercial production commenced in early July 2016. The successful blasting of the first stope delivered the first ore from the new underground mine to the Wassa processing plant, where it was blended with ore from Wassa Main. Underground ore was mined using longitudinal longhole stoping, although the primary mining method that will be used in Wassa Underground from the third quarter of 2017 is transverse stoping. Commercial production was achieved at Wassa Underground, effective January 1, 2017. The first stopes are in the upper part of the F Shoot, which is one of the more moderate grade areas of the underground mine. Golden Star is using the F Shoot mineralization for test stoping and to complete the training of our underground personnel as the mine development moves towards the higher grade B Shoot. Due to this focus on the F Shoot, Golden Star expects to begin mining the first stopes of the B Shoot in the first quarter of 2017.

Drilling in 2016 concentrated on definition drilling of underground stoping areas from both underground and surface. Advanced access to Wassa Underground enabled access for drilling, which was conducted using three rigs for most of the year. In addition to underground drilling several surface rigs initiated infill drilling of the first planned transverse stopes. As part of the normal operating procedure, underground drilling will continue ahead of the mining to enable detailed stope design and mine scheduling.

Sampling and Analysis

Sample preparation on site is restricted to core logging and splitting. The facilities consist of enclosed core and coarse reject storage facilities, covered logging sheds and areas for the splitting of RC and RAB samples. Sub-sampling of RC and RAB samples is carried out using a Jones Riffle splitter.

Sampling is typically carried out along the entire drilled length. For RC drilling, samples are collected every 1 m. Where DD holes have been pre-collared using RC, the individual 1 m RC samples are combined to produce 3 m composites which are then sent for analysis. Should any 3 m composite sample return a significant gold grade assay, the individual 1 m samples are then sent separately along with those from the immediately adjacent samples.

DD samples are collected, logged and split with a diamond rock saw in maximum 1 m lengths. The core is split into two equal parts along a median to the foliation plane using a core cutter. The sampling concept is to ensure a representative sample of the core is assayed. The remaining half core is retained in the core tray, for reference and additional sampling if required.

RC sampling protocols were established in 2003. The composite length of 3 m has been established to allow a minimum of at least two composites per drillhole intersection based on experience from exploration drilling and mining. The hanging wall and footwall intersections can generally be easily recognised in core from changes in pyrite content and style of quartz mineralization.

RAB samples are collected and bagged at 1 m intervals. As the samples are generally smaller in size than the RC samples, 3 m composites are prepared before using the PVC tube to collect a portion of the three individual 1 m samples. After positive results from the 3 m composites, the individual 1 m samples are split to approximately 2 to 3 kilograms and then submitted to the laboratory for analysis.

Security of Samples

Samples are collated at the mine site after splitting and then transported to the primary laboratory for the completion of the sample preparation and chemical analysis. Exploration samples are trucked by road to the laboratories in Tarkwa.

Sample security involves two aspects, namely maintaining the chain of custody of samples to prevent inadvertent contamination or mixing of samples, and rendering active tampering of samples as difficult as possible.

The transport of samples from site to the laboratory is by road using a truck dispatched from the laboratory. As the samples are loaded they are checked and the sample numbers are validated. The sample dispatch forms are signed off by the driver and a company representative. The sample dispatch dates are recorded in the sample database as well as the date when results are received.

No specific security safeguards have been put in place by the Company to maintain the chain of custody during the transfer of core between drilling sites, the core library, and sample preparation and assaying facilities. Core and rejects from the sample preparation are archived in secure facilities at the core yard and remain available for future testing.

Metallurgical Test Work

It is anticipated that up to one-third of the plant feed from the new underground mining operation at Wassa will comprise higher grade underground material, which is observed to contain higher levels of sulphide minerals than the general current open pit feed. To evaluate the performance of future potential feed material from underground mining, the Company took a series of samples from the available half core remaining from ore resource drilling and compared the physical characteristics and metallurgical response from these to a reference sample of the current plant feed.

A subsequent metallurgical testwork program was aimed to determine physical and metallurgical differences between the underground feed planned to be processed over the first nine years of the underground operation (based on the current indicated resource) and the current, and to some extent, historic feeds. As the plant was already treating what was reported and observed to be a reasonably similar feed material, testwork was undertaken on a series of 6 variability samples and 4 crushability samples, which were compared to a reference sample taken from the current open pit ore feed to the process plant.

The metallurgical testwork was undertaken by SGS in Cornwall, UK and the samples were delivered and logged in December 2014 with the initial phase of testwork completed and a draft report was issued in early April 2015.

By the end of 2016 a total of 183,000 tonnes of underground ore had been processed through the plant combined with open pit feed. No detrimental metallurgical or mechanical properties have been observed in the underground ore.

Mineral Reserve and Mineral Resources Estimates

See “Consolidated Mineral Reserve and Mineral Resources Estimations” section.

Mining Operations

The Wassa Underground Feasibility Study was published in the second quarter of 2015 and considers continued mining of the Wassa open pit in combination with underground mining of economic mineralization.

From the beginning of 2017, the open pit has an estimated mine life of four years. During this time, the Company expects that open pit production will be combined with underground production to produce an estimated 225,000 ore tonnes per month. Wassa underground has a mine life of seven years. During Wassa underground's last three years, the Company expects that it will be the sole source of ore at Wassa, producing an estimated 65,000 ore tonnes per month. An estimated total of 1.1 million ounces will be produced over Wassa's life of mine.

The mining method used at the Wassa open pit is a conventional excavator and truck method typical for this type and style of gold mineralization. Drilling and blasting of ore and waste is conducted over bench heights of 6 m. Oxide or weathered ore is generally only required to be lightly blasted and in some areas can be excavated as 'free dig'. Hydraulic excavators are used in conjunction with conventional blasting practice, to mine a 2.5 or 3.0 m flitch height. Broken rock is loaded to 95 t capacity off-highway haul trucks to a central stockpile or to the waste dump.

The development of the underground mine was carried out in conjunction with the existing open pit mining operation. A twin decline system was driven from within the north east wall of the current open pit down to the high-grade zone beneath the bottom of the final pit. A longhole open stoping method is used to mine the ore body dipping at about 65 degree to the west. In the upper areas, a longitudinal mining layout is envisioned using waste rock fill while deeper down in the main part of the ore body, a transverse primary-secondary system using cemented rockfill will be utilized.

Gold recovery is achieved at Wassa through the use of conventional CIL technology. In the LOM plan, the annual feed rate is 2.7 million tonnes per annum ("Mtpa") on 100% fresh ore.

There are two tailings facilities that will accommodate the anticipated tailings production, with the existing tailings storage facility referred to as "TSF1" and a new tailings storage facility in the design phase referred to as "TSF2".

TSF1 is located northwest of the plant site at the head of a southerly draining valley, immediately adjacent to and then over some pre-existing leach pads. The TSF1 facility has been raised in stages with the first stage being constructed in 2004. A supernatant pond currently exists in the north of the TSF1 area as beaches slope away from the main embankment. Deposition occurs around the entire periphery to control the position of the supernatant pond. Paddock deposition is underway in the facility to establish a surface landform for revegetation. Revegetation trials are scheduled to commence on the facility in 2017.

The construction and operation of TSF2 was initially permitted by the EPA in 2013. The environmental permit issued included the caveat that the facility be lined, and as such, application was made to the EPA for a revised design and construction schedule, and was subsequently permitted in November 2015. To make way for the TSF2 construction, the resettlement of the Togbekrom and surrounding hamlets was required. This has been completed in accordance with the approved resettlement action plan.

To satisfy the requirements of the Environmental Assessment Regulations, 1999 (LI 1652), an environmental management plan (an "EMP") for the years covering 2015 to 2017 was submitted to the EPA in October 2013. Comments were received from the EPA in March 2014 and the revised EMP was submitted in June 2014. GSWL was invoiced and subsequently paid the permit fee for certification in January 2015, an indication of overall acceptance of the EMP. The EPA issued further comments on the finalized EMP to align the standard of EMPs within Ghana. GSWL submitted a Final EMP addressing these standardization aspects in August 2015. A recent audit by the EPA noted that the mine was in compliance for this aspect. The next update of the GSWL EMP is due for submission for 2018. Under EPA Regulations, an EMP remains in force until the successive EMP is approved.

Capital Costs

Capital costs have been derived principally from planned equipment requirements and estimates for major infrastructure. The mining equipment capital includes purchase of start-up and replacement fleet over the life of mine. Costs of major capital items are sourced from original equipment manufacturers ("OEM") and for minor items both supplier quotes and SRK in-house cost database have been used.

Total capital has been estimated at \$189.4 million. Project capital for Wassa Underground is estimated at \$72.5 million over the life of the mine. The process plant requires \$62.8 million in project and sustaining capital for the mine life. The \$28.6 million of

planned open pit capital costs include the residual disposal value of the mining fleet in 2024 and mainly comprise the cost of replacing the mining fleet. Closure costs are estimated at \$19 million.

As of December 31, 2016, the Wassa Underground project has cost a total of \$39.8 million net of revenue from gold produced during the construction from project commencement in December 2014 and \$6.3 million capitalized borrowing costs to December 31, 2016. Commercial production at Wassa Underground was declared in January 2017.

Operating Costs

Open pit mining, processing and general and administrative (“G&A”) costs are based on current site operating actuals and forecasts. The unit costs for underground operating cost drivers are based on Ghanaian costs for consumables and labour. The periodic operating costs have been calculated by combining the unit costs with the development and production schedules.

Some unit cost drivers, like equipment maintenance costs, have been derived from SRK’s database of actual costs from operations and modified where appropriate to the conditions anticipated for Wassa Underground. Labour costs have been derived from information supplied by the Company. Fuel costs are based on diesel cost of \$1.25/litre.

The table below provides the estimated operating cost breakdown of Wassa over the life of the mine. The capitalized operating costs are included in all of the figures presented.

Operating Cost	LoM Cost (\$M)	LoM Cost (\$/t milled)
Underground		(\$/t-Underground ore tonne mined)
Direct Cost	18.97	3.49
LHD	14.36	2.64
Trucking	15.88	2.92
Jumbo drilling	6.86	1.26
Longhole Drill	10.32	1.90
Auxiliary Fleet	14.02	2.58
Infill Drilling	4.89	0.90
Power	16.79	3.09
Labour	80.03	14.72
Backfill Plant Operating (Directs)	41.15	7.57
Underground Miscellaneous	10.68	1.96
Contingency	23.40	4.30
Total Underground Cost including contingency	257.35	47.33
Open Pit		(\$/t-Open Pit ore tonne mined)
Open Pit Mining	327.17	18.35
Stockpile Re-handling	4.68	0.26
Total Open Pit Cost	331.85	18.61
Plant and General		(\$/t-processed)
Processing	423.96	17.60
General and Administration	140.75	5.84
Total Plant and General	564.71	23.44
Total	1153.91	47.90
Capitalized Operating Cost	(15.14)	(0.63)
Grand Total	1138.77	47.28

Exploration and Development

Exploration at Wassa for 2016 concentrated on stope delineation drilling utilizing both surface and underground drill rigs. With the advancement of the underground development at Wassa this enabled Golden Star to commence diamond drilling from underground drilling stations. The objective of the drilling is to delineate the stoping areas ahead of mining. During 2016 three underground drill rigs were utilized for most of the year, completing 246 holes totaling 25,313m.

Surface drilling was also conducted at Wassa during the last half of 2016. This drilling targeted F Shoot North mineralization as well as the first B Shoot transverse stopes. In 2016, 33 surface holes were completed totaling 9,397 m.

Prestea Underground Project

Project Description and Location

The Prestea concession is located in the Western Region of Ghana approximately 200 km from the capital Accra and 50 km from the coast of the Gulf of Guinea. Bogoso and Prestea comprise a collection of adjoining mining concessions that together cover a 40 km section of the Ashanti gold district in the central eastern section of the Western Region of Ghana, with the processing facilities situated approximately 10 km south of the town of Bogoso.

Prestea Underground was mined from the 1870's until 2002, when mining ceased following an extended period of low gold prices in the late 1990s and early 2000s. The Prestea mining area has produced approximately nine million ounces of gold, the second highest production of any mine in Ghana. The underground workings are extensive, reaching depths of approximately 1,450 m and extending along a strike length of 9 km. Underground workings can currently be accessed via two surface shafts, one near the town of Prestea (Central Shaft) and a second approximately four km to the southwest at Bondaye.

Prestea Underground is an underground gold mine located 15 km south of the Bogoso/Prestea mine and adjacent to the town of Prestea. The mine has been on care and maintenance since its acquisition by Golden Star in 2002. In September 2015, rehabilitation work commenced for the development of the West Reef Project. Refurbishment work continued to progress as expected at the high grade Prestea Underground Mine during 2016. The mine consists of two usable access shafts and extensive underground workings and support facilities. Access to the mine site is via an unpaved road from Tarkwa.

The Prestea Underground consists of an underground mine with a production mine life of five years and a modified Bogoso/Prestea processing plant. The Prestea Underground mineral resource is developed on a steeply dipping, narrow vein structure between 17 level ("L") and 24 L, accessible through the Prestea Central Shaft. The ore will be mined using a mechanized shrinkage stope method. Alimak stoping was selected as the mining method for Prestea Underground due to its safety and efficiency benefits over conventional shrinkage mining.

Manroc Developments Inc. ("Manroc") was selected following a competitive bid process, involving a number of mining contractors. Manroc specializes in Alimak stoping, a mechanized shrinkage mining method. Manroc's role will be to provide Alimak raise mining, stoping and equipment maintenance training to Golden Star personnel over a three year contract period.

Underground development continued with a total development advance of approximately 420 meters completed by mid-February 2017. This development focused on crosscut advancement towards the West Reef and construction of a workshop and electrical bays and the slashing of existing drives to a size suitable for mechanized load-haul-dump equipment.

The rock winder upgrade progressed to 95% completion in 2016 with commissioning completed in January 2017, enabling an increase in hoisting capacity to satisfy the production profile in 2017. The mining rate in the Prestea Underground Mine is expected to be approximately 650 tonnes per day and the shaft's capacity is expected to be approximately 1,200 tonnes per day.

In early January 2017 the West Reef ore body was intersected on 24 L for the first time by Golden Star's mining operations in two separate cross cuts. The focus is now on establishing the infrastructure into the first of the stopes. Construction activities continue to advance according to schedule and stoping is expected to start in the second quarter of 2017, with commercial production anticipated to be declared in mid-2017.

Accessibility, Climate, Local Resources, Infrastructure and Physiography

Local population centers are located at Bogoso town in the northern half of the Bogoso concession, and Prestea town, which is in the center of the Prestea concession. Bogoso is on the main road from Tarkwa to Kumasi and there is a paved road between Bogoso

and Prestea. The town of Prestea is located adjacent to the backfilled workings of the Plant North open pit. The central shaft complex and offices for Prestea Underground are within the town limits.

Access to the property by road is a six hour drive from Accra via the port city of Takoradi. The road is paved from Accra to Prestea. There are airports at Kumasi and Takoradi, which provide daily services to the international airport at Accra. Kumasi is situated approximately a three and a half hour drive from Prestea Underground. Road surfaces in the area vary from poor to good.

The topography of the area within which the GSBPL assets are located generally slopes in a northern direction towards the Ankobra River. It can be described as gently rolling, punctuated by a number of low hills and rises. A series of northeast-southwest trending sub-parallel ridges, about 2 km wide, dominates the eastern part of the project area. The mineralization tends to occur on the western slopes of the ridges with the intervening valleys occupied by farming communities and seasonal streams.

The GSBPL assets are within the rainforest bioclimatic zone, but there is no primary forest left in the area of the assets as a result of logging, farming, historical mining, and unauthorized small scale mining activity. The vegetation types on the Prestea concession include: secondary forest, secondary thicket, farm re-growth, farmland, and marshes or freshwater swamp forest. Patches of secondary forest are only present in a few areas not accessible for farming. Biodiversity studies have not identified endangered or threatened species on the Prestea concession.

The Prestea Underground project is not expected to add to existing impacts on biodiversity and ecology. No secondary forest will be disturbed for the Prestea Underground project and the project infrastructure will be in brownfields areas. The river ecosystems downstream of the project area have been heavily degraded by anthropological influences, including over a century of historic mining operations, discharges of untreated sewage, and unauthorized small-scale mining operations. The climate is south western equatorial climate type with daily temperatures varying mostly between 20°C to 35°C. There are two rainy seasons, one from April to June and then a minor rainy season in October and November. This area has significant rainfall most months, with a short dry season in December and January.

Annual rainfall in the area averaged 1,641 millimetres (mm) between 2002 and 2014. The range in annual rainfall during this period was from minimum annual rainfall 1,197 mm to maximum annual rainfall 2,195 mm.

As Prestea Underground is an underground mine, the climate has no major impact on the operations. In the tropical environment, work on the surface can continue year round, with short breaks during the mostly short-lived storm events.

Prestea Underground is in an area where mining has occurred more or less continuously since the late 1800s. Therefore, a significant portion of the required services, infrastructure and community support are already in place so local skilled underground workers are available. The following services and infrastructure are relevant to the assessment of the Prestea Underground project:

- surface access to Prestea Underground is via the public road network that extends to Prestea Underground;
- electricity and water are available - electricity from the Ghanaian national grid is currently used to power the existing underground dewatering pumps;
- surface infrastructure in the area consists of a variety of government, municipal, and other roads with good overall access;
- processing of the ore will be carried out at the existing Bogoso/Prestea non-refractory processing facility, 16 km by road from Prestea;
- tailings storage will be in the existing Bogoso/Prestea storage facility;
- any waste rock generated at the site will be disposed in an engineered storage facility close to the new hoisting shaft site; and
- the extensive history of mining in the local area and also in Ghana provides opportunities to obtain skilled underground workers. Any additional training requirements can be sourced within Ghana.

History

Mining in the Prestea area dates back several centuries. The first direct involvement by Europeans in the area occurred in the 1880's with the establishment of the Gio Apanto Gold Mining Company and the Essaman Gold Mining Company.

These companies became the Apanto Mines and Prestea Mines Limited in 1900. The companies merged to become Ariston Gold Mines (“Ariston”) in 1927. Companies associated with Ariston carried out exploration and some mining to the north east of Prestea at Quaw Badoo and Brumasi. Ariston also prospected concessions immediately to the south west of Prestea at Anfargah.

Recorded production for the Prestea mine began in 1912 under the British company Ariston Mining, which operated the mine until the 1950’s. The Company was responsible for the majority of the underground development including shaft sinking, ventilation and level development. The mine was nationalized in the late 1950’s, following the independence of Ghana, when all mining operations in the Prestea region were consolidated under the management of Prestea Gold Limited, a subsidiary of State Gold Mining Company (“SGMC”).

In the early 1990’s, the mining industry reopened to foreign companies and a joint venture agreement was formed between JCI Limited (“JCI”), Prestea Gold Ltd., SGMC and the government of Ghana. In 1994, JCI took over the Prestea Underground operation and carried out exploration and feasibility studies in the area immediately north and south of the mine infrastructure. JCI withdrew from the joint venture in 1998 due to low gold price and aging infrastructure. A consortium supported by the Ghana Mine Workers Union was then founded to operate the mine under the name “PGR”. The mine operated for three years until its closure in early 2002 due to depressed gold prices and financial difficulties. Golden Star acquired an initial interest in the mine in 2002 (followed by the subsequent acquisition of an additional interest in the mine) which has remained on care and maintenance since that time to 2014 when the refurbishment and current development started.

Geological Setting

The Prestea concession lies within the southern portion of the Ashanti Greenstone Belt along the western margin of the belt. Rock assemblages from the southern area of the Ashanti Belt were formed between a period spanning from 2,080 to 2,240 Ma, with the Sefwi Group being the oldest rock package and the Tarkwa sediments being the youngest. The Ashanti Belt is host to numerous gold occurrences, which are believed to be related to various stages of the Eoeburnean and Eburnean deformational events.

The geology of the Prestea concession is divided into three main litho-structural assemblages, which are fault bounded and steeply dipping to the west. From the eastern footwall to the western hanging wall, these packages are represented by the Tarkwaian litho-structural assemblage, the tectonic breccia assemblage, composed of sheared graphitic sediments and volcanic flows and the last assemblage is composed of undeformed sedimentary units of the Kumasi Basin, which is located to the west of the Ashanti fault zone.

At Prestea, the principal structure is a mineralized fault-filled quartz vein known as the “Main Reef” which is relatively continuous and has been modelled and worked over a strike length of approximately 6 km and to a depth of approximately 1,450 m below surface (35 L). Several subsidiary structures such as the Prestea Underground and East Reef have developed respectively in the immediate hanging wall and footwall of the Main Reef structure. The Prestea Underground is a second order structure where dilational zones occurs some 200 m into the hanging wall of the Main Reef structure and, at present, is known to occur over a strike length of 800 m and has currently been defined by underground drilling between 550 m to 1,150 m below topography as far as the 30 L. The major thrust faults such as the Main Reef fault and the Prestea Underground fault, as well as the presence of an associated penetrative foliation, are the main syn-D3 structural features.

Exploration

Data validation and selected evaluation drilling from underground have helped to increase the confidence in the morphology and orientation of the mineralization at Prestea. Crosscut samples and Barnex JCI era drilling data (surface drilling) accounts for some 92% of the available data. The remainder is a mixture of RC and DD boreholes drilled by Golden Star and underground channels and diamond boreholes acquired by the Company as part of their purchase of the Prestea mining rights.

Sampling covers a depth extent of 1,400 m from surface. The Golden Star data is largely concentrated in the area underlying the Plant North open pit, Central shaft and the northern extent of the Beta boundary.

The previous mineral resource estimate for the Prestea Underground orebodies was based on a combination of Golden Star underground sampling from some 278 boreholes, 115 rock saw samples and channel sampling from two crosscuts. The bulk of the drilling was conducted from 2003 and throughout 2006. The Company drilled an additional 14 underground boreholes into the Prestea Underground orebody in 2012 and 2013 for geotechnical and metallurgical testing purposes. This drilling has been carried out using fan drilling from cubbies on the most accessible levels but predominantly from the 12 L, 17 L and 24 L.

In 2015, the 14 underground drillholes drilled in 2012 and 2013 were combined with other holes not included in the 2008 resource updates to update the resource models. The inclusion of the additional drilling enabled previously inferred classified material to be reclassified and included in reserves as indicated for inclusion in reserves. These results were included in the year end resource and reserve statements.

Subsequent exploration of the Prestea Underground target has been planned and managed by Golden Star and was initiated in 2003. The 17 L Prestea Underground drive exposes the vein structure as being a distance of approximately 450 m. Along the Prestea Underground drive the backs have been sampled approximately every 5 m with a 2 x 2 inch channel sample cut using an air driven diamond blade rock saw. The channel samples were cut orthogonal to the main structure. The channel samples and the reef drive have been surveyed and tied into the mine grid at surface. A total of 81 channel samples were collected on the 17 L reef drive averaging 2.4 m width with composite grades ranging from 0.1 to 127 g/t gold.

The results from the 17 L channel sampling show that the mineralization along the reef is hosted in several higher grade pods. These high grade pods were drill tested at depth from cubbies on the 17 L and 24 L, drilled from the footwall to the hanging wall obliquely to the moderately west dipping foliation and reef.

Mineralization

The Prestea deposit can be classified as a lode gold deposit or an orogenic mesothermal gold deposit, which are the most common gold systems found within Achaean and Paleoproterozoic terrains. In the West African shield, orogenic gold deposits are typically underlain by geology considered to be of Birimian age and are generally hosted by volcano-sedimentary sequences.

The Ashanti Greenstone Belt is considered prospective for orogenic mesothermal gold deposits and hosts numerous lode gold deposits and paleoplacer deposits. Several major gold deposits are found within the Ashanti Greenstone Belt which can be classified into six different deposit types:

1. Sedimentary-hosted shear zones
2. Fault-fill quartz veins
3. Paleoplacer
4. Intrusive-hosted
5. Late thrust fault quartz veins
6. Folded veins system

At Prestea, gold mineralization exhibits a strong relationship with major shear zones, fault zones and second order structures. Two types of mineralization have been identified at Prestea, which are both characterized as mesothermal gold mineralization:

- fault-fill quartz veins along fault zones and second order structures, which typically contain non-refractory, free milling gold; and
- disseminated mineralization associated with brecciated zones of iron-rich footwall volcanic lenses, which are characterized by finely disseminated arsenopyrite rich and silicified replacement zone. This type of mineralization is generally lower grade, refractory and locally termed sulphide material.

The weathering profile at Prestea is deep and typically results in extensive surface oxidation of bedrock, to a depth of up to 100 m. Generally, the weathering profile typically consists of a lateritic surface, a saprolitic horizon, a transitional zone and a deeper primary sulphide zone.

Drilling

The samples used for the current mineral resource estimates at Prestea are based on a combination of surface DD drilling and underground core drilling. Fan drilling is carried out from drill cubbies in order to reduce the movement of the drill rigs. In addition to the drilling, rock saw channels have been cut on a number of levels to provide channel samples across the orebody and to investigate the grade distribution in the immediate contact zones adjacent to the orebody in order to better define the potential dilution. Drilling for the Main Reef orebody has been carried out at roughly 80-100 m spacing along strike from surface. The underground drilling has been largely concentrated on the Prestea Underground orebody and has consisted of fan drilling from individual cubbies with up to 21 boreholes drilled from a single collar location. Underground collar locations are spaced approximately 80 m apart along strike on the 17 L, 24 L and 30 L.

Data is currently available from some 675 surface and underground boreholes in the Prestea area broken down as follows:

- DD surface = 274 boreholes; 29,700 m;
- RC surface = 137 boreholes; 14,000 m; and
- DD underground = 278 boreholes; 46,500 m.

Drilling for the Prestea Underground deposit was conducted from underground drill stations, predominantly from 17 L and 24 L. The drilling was conducted by Golden Star and no historical data was used in the mineral resource estimates. On 17 L, 10 drill stations were established along the Main Reef footwall access where fan drilling was conducted dominantly horizontally and down dip. The up dip portion of the Prestea Underground remains to be tested between 12 L and 17 L and remains one of the priority drill targets.

The underground drilling of the Prestea Underground target was conducted in several campaigns from 2004 to 2006 with a total of 128 holes and 28,790 m being completed during this time. All drilling was conducted with underground diamond drill core rigs. All borehole collars were surveyed using the underground survey control brought down from surface using the mine grid. The boreholes were also surveyed nominally every 25 to 30 m down hole using a Reflex single shot survey instrument.

Core recovery through the mineralized zone was optimized by using chrome core barrels, viscous muds and short drilling runs but in some boreholes some of the graphitic fissures (graphic rich fault gouge) were washed away. Areas of lost core were not sampled and in the database are identified as insufficient sample and were given a zero grade. Generally core recovery was good through the zone.

Sampling and Analysis

Sampling from RC drilling is carried out using a standard single cyclone with samples collected at 1 m intervals through the expected mineralized zone. In zones of waste rock the sample interval is occasionally increased to a 3 m composite. However all samples are assayed and if a 3 m sample returns a significant grade value the original 1 m samples will be assayed individually. All samples are riffled and bagged at the drill site and returned to the Bogoso/Prestea mine for reduction and sample preparation.

Core from surface DD is collected using HQ size core barrels (63.5 mm). The core is logged and sawn in half at the Bogoso/Prestea mine site and 1 m samples are prepared through the prospective mineralized zone. However, geological contacts are taken into account and samples will therefore vary slightly in length. In waste zones samples are collected at 1 m nominal intervals where alteration, sulphidation or quartz veins are observed. The orebodies dip steeply to the west and depending if the drilling is from surface or underground, it is angled to try and intersect the mineralized zone orthogonally. However, from underground drilling cubbies this is often not possible. Recoveries and solid core recovery values are recorded in the database and 80% of the diamond drill core samples have a recovery greater than 90%.

Samples used for the Prestea Underground mineral resource estimations were of two types, rock sawn channel samples on 17 L and 24 L reef drives.

Channel samples were collected using a double diamond blade Cheetah air driven rock saw. This saw produced a channel sample roughly 50 mm deep by 50 mm wide. Sample collection and dispatch to the laboratory was supervised by a geologist who ensured the samples were taken correctly, labelled and transported to the surface.

Core samples generated from the underground drilling were processed at either the core logging facilities at the Prestea Central shaft or at the main core storage facility near the Bogoso/Prestea processing plant. Core boxes with lids were delivered to the logging facilities at the end of every shift by the drillers. The core logging process involved initial cleaning of the core and checking of the metre blocks and mark ups on the individual boxes. If there were any discrepancies, they were addressed with the driller who was responsible for the core. All core was photographed prior to being logged and sampled. Two teams logged the core at surface one being responsible for recording geotechnical information and overall core recovery between drilling runs. Following the geotechnical drilling the core was logged by the geologist who paid particular attention to structure, lithology, alteration and mineralization. All of the core was orientated with a spear orientation device and this was used to take structural measurements while the core is being logged.

Sampling intervals were laid out by the geologist logging the core and were based on geological contacts with samples in mineralized zones generally not exceeding one metre. The physical sampling of the core was done with a diamond blade core cutting saw. The core was sawn in half along the line marked by the geologist to ensure a representative sample was taken. The half sawn core samples were deposited into individual plastic bags where the sample number was both written on the bag as well as on a piece of flagging tape which was inserted into the bag. The remaining half core sample was returned to the core boxes and kept for future reference. During the sampling, standards and blanks were inserted in the sample numbering sequence and these were recorded on the lab dispatch sheets. Every 20 samples were submitted to the laboratory were accompanied by a sample standard and a blank to check the precision of the analysis. Additional checks were done on samples once the results were returned.

Security of Samples

Samples were dispatched to either SGS laboratories or Transworld Laboratories (now Intertek Mineral Lab) in Tarkwa. Samples were organized in the core logging facilities where they were checked and put into numeric order. The transportation to the laboratory in Tarkwa is provided by the lab. Sample turnaround and dispatch are recorded either in a spreadsheet (earlier samples) or with the database software acQuire.

Sample rejects and pulps were returned to the Bogoso/Prestea core logging facility where they are stored for up to a year and then disposed of. Approximately 10% of the coarse reject samples, above detection limit that were returned to the site, are renumbered and resubmitted to the laboratory for duplicate analysis and used for quality control evaluations. The processing, handling, analysis and storage of the samples for Prestea Underground are considered to be within or exceed industry standards.

Mineral Reserve and Mineral Resources Estimates

See “Consolidated Mineral Reserve and Mineral Resources Estimations” section.

Mining Operations

The Prestea Underground consists of an underground mine with a production mine life of five years. The ore will be processed in the Bogoso/Prestea Plant which will be modified to accept low tonnage, high grade feed. The nominal mill feed rate will be approximately 240,000 tonnes per annum or 650 tonnes per day.

There is an extensive infrastructure of vertical shafts, inclined shafts, horizontal development, raises and stoping developed along the 9 km of strike length of the various orebodies from Prestea in the north to Tuapim in the south.

The Prestea Underground rehabilitation and preproduction period is expected to be completed in June 2017. The full production period extends for a period of four and one-half years. At full production, the planned mining rate is 650 tonnes per day (240 kt per year). The planned life of mine production is 1,094 kt at 13.9 g/t gold, containing 490,000 ounces of gold.

The following infrastructure projects are currently in progress or completed:

- Central and Bondaye shaft rehabilitation;
- Central and Bondaye hoist upgrades;
- Electrical infrastructure;
- Compressed air;
- Pumping;
- Ventilation;
- 17 L and 24 L track and ground support; and
- 25 L loading pocket.

A low tonnage, high grade processing stream will be integrated into the existing Bogoso/Prestea processing plant. The modification will enable the low-tonnage stream to treat a nominal 650 tons per day of non-refractory run of mine material.

Processing tails will be deposited on the currently operated Bogoso/Prestea storage facility. The Bogoso/Prestea storage facility is a conventional valley/paddock tailings storage facility.

The Company does not foresee that there will be any obstacles to the permitting of the project, as it is in a disturbed area, is unlikely to pose any residual or cumulative impacts of any significance, and has wide community support. The surface deposits to the south of Prestea Underground are host to 122,000 ounces of non-refractory mineral reserves at an average grade of 2.24 g/t gold. These surface operations began production at the end of 2015 and are expected to be completed in late 2017.

Due to the limited impact associated with the development, environmental considerations are deemed manageable and project approvals should be granted within the normal timelines. The development of the project is not expected to contribute to the water already removed from the historic underground voids. The design of the project will ensure maintenance of the existing environmental indemnity covering the surface and underground concessions.

Capital Costs

The Prestea Underground operating cost estimate is expressed to a feasibility level accuracy of +/- 15%. The table below shows the Prestea Underground project capital costs.

Capital Costs	Pre-development Period (\$M)	Pre-production Period (\$M)	Production Period (\$M)	Total Capital (\$M)
Equipment and Projects				
Shafts and hoisting	2.96	0.72	0.00	3.69
Shaft equipment	0.48	0.00	0.26	0.74
Electrical	5.62	1.53	4.15	11.30
Dewatering system rehab	0.00	0.00	1.85	1.85
West Reef dewatering	0.60	0.28	0.45	1.34
Compressed air	1.25	0.17	0.00	1.42
Underground rehab	0.85	0.00	0.00	0.85
O/P and ventilation raisebores	0.47	1.53	0.37	2.36
Primary ventilation	0.40	0.00	0.01	0.41
Surface infrastructure	0.66	0.00	1.72	2.39
Safety	0.95	0.04	0.12	1.10
Mining equipment	1.82	0.55	0.46	2.83
Mining sustaining	0.00	0.00	2.20	2.20
Processing	18.50	2.05	0.00	20.50
Miscellaneous	1.70	0.24	1.50	3.45
Subtotal	36.20	7.11	13.10	56.40
Capitalized Operating Cost				
Mining	9.76	11.50		21.20
Processing	0.00	4.67		4.70
Prestea G&A	2.99	2.20		5.20
Bogoso G&A	0.40	0.33		0.70
Revenue	0.00	(11.76)		(11.80)
Subtotal	13.10	6.90		20.10
Total Capital (\$M)	49.40	14.00	13.10	76.50

Total project capital of \$76.5 million is comprised of \$63.4 million initial capital (pre-development and pre-production periods), and \$13.1 million sustaining capital, not inclusive of capitalized borrowing costs.

The capital cost estimate (excluding capitalized pre-production operating costs and sustaining capital) includes an overall contingency rate of 8.6% (\$4.2 million).

As of December 31, 2016, the underground project has cost a total of \$39.4 million net of revenue from gold produced during construction from project commencement in September 2015 and \$3.7 million capitalized borrowing costs to December 31, 2016.

Operating Costs

The Prestea Underground operating cost estimate is expressed to a feasibility level accuracy of +/- 15%. The table below shows the Prestea Underground operating cost summary.

Department	Operating Costs \$M						Production	Unit Cost
	2017	2018	2019	2020	2021	2022	Period \$M	Operating \$/tonne
Mining								
Manpower	7.1	9.5	9.3	9.4	9.2	6.1	50.6	51.5
Equipment	0.7	1.0	0.9	1.0	0.9	0.5	5.1	5.2
Supplies	4.5	5.5	5.0	4.8	4.2	2.4	26.4	26.9
Services	0.4	0.3	0.3	0.3	0.2	0.2	1.7	1.7
Power	2.9	3.7	3.6	3.6	3.6	2.4	19.7	20.1
Subtotal Mining	15.7	20.0	19.2	19.0	18.1	11.5	103.4	105.3
Processing	11.5	15.4	14.4	14.9	14.0	7.1	77.3	78.8
G&A								
Prestea	2.7	3.4	3.4	3.5	3.5	2.1	18.6	19.0
Bogoso	0.5	0.7	0.7	0.7	0.7	0.5	3.6	3.7
Subtotal G&A	3.2	4.1	4.1	4.1	4.1	2.6	22.3	22.7
Total (\$M)	30.4	39.5	37.7	38.0	36.3	21.2	203.0	206.8

The total operating cost for the project is estimated at \$207/tonne processed. This is comprised of \$105/tonne underground mining, \$79/tonne processing (including \$3.75/tonne for surface ore haulage), and \$23/tonne general and administration operating costs.

Exploration and Development

Several targets remain untested at depth below the current mine bottom, especially following the high grade down plunge trend, which could increase the project mineral resource base. Further definition drilling and sill development could convert some of the existing inferred mineral resources to the indicated category, which will be a benefit for extending the mine life, if realized. Prestea Underground drilling resumed in 2017 when services and sufficient ventilation were established on 24 L. In early January 2017 the West Reef ore body was intersected on 24 L for the first time by Golden Star's mining operations in two separate cross cuts.

Bogoso/Prestea Gold Mine

Project Description and Location

Golden Star, through its subsidiary GSBPL, owns 90% of and operates the Bogoso/Prestea mine and two processing plants located along the Ashanti Trend in western Ghana, approximately 35 km northwest of the town of Tarkwa. Bogoso and Prestea are adjoining mining concessions that together cover approximately 40 km of strike along the southwest-trending Ashanti gold district.

The mine employs conventional excavator and truck open pit mining methods. Ore is hauled from the pits to the processing plants. Equipment and facilities include the nominal 1.2 million tonne per annum non-refractory processing plant. In addition, there are numerous ancillary support facilities including warehouses, maintenance shops, roadways, administrative offices, an employee residential complex, a water supply system, a stand-by 12 megawatt power plant, a medical clinic, tailings storage facility and a water treatment plant. Electric power is available from the Ghana power grid.

Golden Star acquired Bogoso/Prestea and its non-refractory processing plant in 1999. The Prestea property was acquired in 2001. In July 2007, Golden Star completed construction and development of the Bogoso/Prestea refractory processing plant.

The refractory operation at Bogoso/Prestea was suspended and placed on care and maintenance when the Chujah pit was mined out in the second quarter of 2015. This is in keeping with the Company's strategy of lowering the cash operating cost per ounce by focusing future mining and processing on non-refractory ore types which require lower processing costs than refractory ores.

The non-refractory processing plant currently processes oxide feed from the Prestea South oxide pits. The Company also expect to process Prestea Underground ore using this processing plant.

Accessibility, Climate, Local Resources, Infrastructure and Physiography

The climate is tropical with mean daily temperatures varying between 25°C to 35°C. There are two rainy seasons, one from April to June and then a minor rainy season in October and November. During December to February, wind blows from the north and frequently brings dust from the Sahara. The south west of Ghana receives the highest rainfall in the region. In the concession areas, the humidity is high all year round and rainfall averages 2,030 mm annually.

Wet and moist forest types of Western Ghana are the natural vegetation types in the concession area. The natural vegetation has been degraded by earlier logging activities, and past and present farming activities, and now largely comprises broken forest, secondary-forest, farmland and abandoned farmland, with upland type re-growth with swamps in some valley areas.

Takoradi is Ghana's second port after Tema (Accra) and is capable of handling large cargo ships and provides storage, bonded warehouses and customs and excise facilities for the majority of the mining equipment shipped to the goldfields of Ghana.

Bogoso is located on the main road from Tarkwa to Kumasi and there is a paved road between Bogoso and Prestea. The property has paved road access to Accra, Tarkwa and the major port at Takoradi. There are airports at Kumasi and Takoradi, which provide daily services to the International Airport at Accra.

The topography of the area within which the GSBPL assets are located is characterized by a series of northeast-southwest trending sub-parallel ridges. The altitude in the valleys where the main population centres occur is around 100 m above sea level. The mineralization tends to occur on the western slopes of the ridges with the intervening valleys occupied by farming communities and seasonal streams.

Local population centres are Bogoso Town north of the Bogoso concession and Prestea Town in the centre of the Prestea concession. Power is supplied from the Ghana national grid with appropriate backup capacity provided by diesel generators at Bogoso.

History

Mampon, Abronye and Opon

The first recorded work in the Mampon area was in 1929 when maps of the Dunkwa area were produced as part of a soil and stream sediment sampling campaign. In the mid-1930s, the Ghanaian Geological Survey mapped the area as part of an extensive investigation of the volcanic-sedimentary boundary between Prestea and Obuasi. Gold exploration is also recorded from this time, although no production records exist.

Very little information is available for the area between 1940 and the early 1980s. In 1988, BHP Billiton Limited ("BHP") obtained the prospecting license for the Dunkwa concession and conducted regional scale geochemical and Very Low Frequency - Electromagnetic ("VLF-EM") surveys which located the deposits at Mampon, Abronye and Adiokrom. Follow up detailed geochemical and VLF-EM surveys were then conducted and six diamond drillholes explored the extent of the Abronye deposit.

BHP gave up its interest in the concession in the early 1990s and it was taken over by Sikaman Gold Resources Ltd, which subsequently sold its rights to Birim Goldfields Inc. ("BGI") in 1994. Bogoso Gold Limited ("BGL") entered into a joint venture with Hemlo Gold Mines Inc. ("HGM"). HGM gave up its joint venture rights in 1999, at which point some 4,500 m of trenching, 10,100 m of RC drilling and 8,500 m of DD had been carried out across the concession. During this period, the consultants Watts, Griffis and McOuat completed an independent technical review of the projects and produced an indicated and inferred mineral resource estimate totaling 1.6 Mt at 3.2 g/t Au of oxide material and a further 1.4 Mt at 1.4 g/t Au of fresh material at Mampon and Abronye combined. The reporting code and key assumptions and parameters used to report this mineral resource are not known and a QP has not done sufficient work to classify this historical estimate as a current mineral resource or mineral reserve. Hence, the Company is not treating the historical estimate as a current mineral resource or mineral reserve.

In 1999, Ashanti Goldfields became a joint venture partner and exploration continued for a further three years with 84 RC holes (5,300 m) and 26 DD (5,500 m) being drilled on the Mampon deposit. In 2002, Resource Services Group completed a technical review of an Ashanti pre-feasibility study and produced an inferred mineral resource estimate of 1.5 Mt at 4.75 g/t Au for oxide,

transition and fresh horizons combined at Mampon. The reporting code and key assumptions and parameters used to report this mineral resource are not known and a QP has not undertaken sufficient work to classify this historical estimate as a current mineral resource or mineral reserve and the Company is not treating the historical estimate as current mineral resources or mineral reserves.

In 2003, the properties were acquired from BGI by Golden Star.

Bogoso North and Marlu

Marlu Gold Mining Areas Limited (“MGMAL”) explored for gold and operated a medium scale open pit and underground mining operation from 1935 to 1955. Surface gold mineralization was systematically explored utilizing trenching and shallow adits driven across strike. Deeper exploration, well below the depth of oxidation, was conducted on the Marlu deposits, where underground workings extended approximately 250 m below the surface. In 1935, MGMAL commenced mining oxide ore from a series of open pits extending from Bogoso North to Buesichem. During the period 1935 to 1955, MGMAL processed between 0.36 and 0.45 Mtpa of ore yielding 35,000 to 51,000 oz per year. During the 15 year period of mining (the mine was shut down for the duration of World War II), 6.9 Mt of ore with a recoverable grade of 4.1 g/t Au was processed through the plant generating about 1.9 Moz of gold. Marlu also mined a small amount of ore from underground at Bogoso North. The Marlu mining operation terminated in 1955.

The 30 year period between the closure of the Marlu mining operations in 1955, and the acquisition of the Bogoso concession by Denison Mines Limited, a Canadian company, in early 1986 only saw sporadic exploration activities. These activities included the sampling of old adits and two separate drilling programs, one by the SGMC and the other by the United Nations Development Program.

In 1986, Canadian Bogoso Resources Limited, a Ghanaian company, commenced exploration on the Bogoso concession. Exploration between 1986 and 1988 outlined potential for development of mining operations on the concession. Included as part of this work was drilling of the Marlu tailings, dewatering and sampling of the Marlu underground workings to a depth of about 100 m, DD beneath the old open pits, adit sampling and trenching.

Golden Star acquired the Bogoso concession in 1999, and since that time has operated a nominal 1.5 Mtpa CIL processing plant to process oxide and other non-refractory ores (termed the Bogoso non-refractory plant). In 2001, Golden Star acquired the Prestea property located adjacent to the Bogoso property and mined surface deposits at Prestea from late 2001 to late 2006. In July 2007, GSBPL completed construction and development of a nominal 3.5 Mtpa processing facility at Bogoso/Prestea that uses BIOX[®] technology to treat refractory sulphide ore.

Chujah, Dumasi, Ablifa and Buesichem

Gold was first commercially mined at the Bogoso/Prestea property in the early 20th century. Notably, in 1935, MGMAL started commercial scale mining of high-grade oxide material from a series of open pits extending south from Bogoso North to Buesichem, just south of the Bogoso/Prestea property. MGMAL also mined a small amount of material from underground at Bogoso North, Marlu and Bogoso South and was still mining the Buesichem pit when it shut down its operations in 1955. According to BGL’s records, during its 20 year period of operating from 1935 to 1955, MGMAL produced over 900,000 oz of gold at an average recovered grade of 3.73 g/t Au.

Billiton Plc (“Billiton”), now known as BHP Billiton Limited, then part of the Royal Dutch Shell Group, took control of the Bogoso/Prestea property in the late 1980s and its initial feasibility study established a “mineable reserve” of 5.96 Mt with a mean grade of 4.0 g/t Au, of which 461,000 t (or less than 8%) comprised oxidised material and the remainder fresh (sulphide) material. The reporting code and key assumptions and parameters used to report this mineral resource are not known and a QP has not done sufficient work to classify this historical estimate as a current mineral resource or mineral reserve. Hence, the Company is not treating the historical estimate as current mineral resources or mineral reserves. The construction of a mining and processing facility was completed in 1991, the latter comprising a conventional CIL circuit to treat the oxidised material at a rate of 1.36 Mtpa and a flotation, fluidized bed roasting, and CIL circuit with a design capacity of 0.9 Mtpa. However, Billiton encountered operation difficulties with the fluidized bed roaster, as a result of which the operation was then focussed solely on the oxide ore. The resulting

standalone CIL plant had a capacity of approximately 2 Mtpa and on-going exploration was successful in delineating further ore thereby prolonging the mine life.

Mining and exploration at Prestea has been ongoing since 1873. During the majority of this period, the work was concentrated around the Prestea Village area with the development of the underground operation and a small open pit at Plant North in the north of the Prestea concession.

Beta Boundary, Bondaye and Tuapim

Before 2001, little, if any work was carried out in the Bondaye and Tuapim areas. Exploration sampling was carried out over the Beta Boundary deposit immediately to the north. In June 2001, Golden Star was awarded the surface rights for the Prestea concession and commenced a program of detailed stream and outcrop geochemical sampling over the entire concession. The results from this work led to the recognition of potential exploration targets in the Bondaye and Tuapim areas and RAB drilling commenced in 2003. There are no historical (Pre-2004) mineral resource estimates for the Bondaye and Tuapim deposits.

Geological Setting

The Bogoso-Prestea properties lie within the southern portion of the Ashanti Greenstone Belt along the western margin of the belt. Rock assemblages from the southern area of the Ashanti belt were formed between a period spanning from 2,080 to 2,240 Ma with the Sefwi Group being the oldest rock package and the Tarkwa sediments being the youngest. The Ashanti belt is host to numerous gold occurrences, which are believed to be related to various stages of the Eoeburnean and Eburnean deformational events.

The geology of the Bogoso-Prestea mine site is divided into three main litho-structural assemblages, which are fault bounded and steeply dipping to the west, which suggests that the contacts are structurally controlled and that the litho structural assemblages are unconformable. These packages are from the eastern footwall to the western hanging wall, the Tarkwaian litho-structural assemblage, the tectonic breccia assemblage composed of sheared graphitic sediments and volcanic flows which is commonly referred to as the Main Crush Zone ("MCZ"), and the last assemblage is composed of sedimentary units of the Kumasi basin which is located to the west of the Ashanti fault zone.

The Asikuma and Mansiso licenses host the Opon, Mampon and Aboronye deposits; structural setting controlling the style of mineralization is similar for all three deposits. Both concessions are underlain by north-northeast trending metasedimentary rocks of the Kumasi basin, including coarse-grained wackes, mudstones and argillites, interpreted to represent turbiditic sedimentary sequences. Mineralization at Mampon and Aboronye is associated with pyrite and arsenopyrite dissemination within the wallrock surrounding the quartz veins and within the quartz veins themselves. Veins range from narrow stringers to robust quartz bodies up to 4 m in width. The veining is also suggested to be associated with north-northwest striking splays or oblique shears close to their intersection with a major north south trending shear zone. Mampon is modeled over a 1 km strike length while the Aboronye deposit is modeled over 700 m along strike.

Gold mineralization between Marlu and Bogoso North is restricted to a narrow graphitic fault zone characterised by low gold tenors. The Bogoso North deposit consists of two splays of the MCZ; a quartz vein dominated hanging wall splay, and a highly graphitic footwall structure. The two splays of the MCZ at Bogoso North extend for approximately 500 m along strike and range in true width from 5 to 15 m. Gold mineralization at Bogoso North dips moderately to the northwest at 40 to 50°. The mineralization is modelled over a 2 km strike at Bogoso North and an additional 2.7 km to a depth of some 300 m. Bogoso North gold mineralization is associated with either quartz veins or graphitic cataclasites.

The Chujah/Dumasi area comprises both Birimian and Tarkwaian lithologies, separated by a deformation corridor referred to as the central structural corridor or tectonic breccia. The tectonic breccia is characterized by an anastomosing network of faults and imbricated fault slices. The thickness of the main shear zone ranges from a few m to over 50 m in true width. The combined length of Chujah and Dumasi is some 3 km along strike and the deposit has been modelled to a vertical depth of 500 m.

The Ablifa deposits are situated on the Ashanti Trend. Mineralization occurs within a narrow north-east striking corridor, in which mineralization dips predominantly to the northeast at angles ranging between 50° and 70°. The deposit is modelled over a strike length of 4.3 km and to a maximum vertical depth of 250 m.

In the vicinity of the Buesichem deposit the MCZ appears to encroach on the Birimian - Tarkwaian contact. In the Buesichem pit the eastern high wall is composed of a phyllite unit which, has been interpreted as Tarkwaian. The deposit is modelled over a 1.3 km strike length and to a maximum depth of 500 m.

Locally, mineralization at Beta Boundary, Bondaye and Tuapim is characterised by lode gold mineralization, which typically contains non-refractory, free milling gold associated with arsenopyrite. Oxidation of the upper layers of the deposits is extensive and in places can reach tens of m in depth. Beta Boundary is modelled over a 4 km strike length and to a depth of 450 m, whilst Bondaye is modelled over a 1.3 km strike and Tuapim over 2 km. Bondaye and Tuapim are modelled to a maximum vertical depth of 150 m.

Exploration

Bogoso-Pretea

In 2007, Golden Star contracted Geotech Airborne Geophysical Surveys (“GEOTECH”) to run a VTEM survey which they flew over the entire project area. The total drill production up to the end of 2013 stands at 89,216 m of RAB, 141,115 m of RC and 195,133 m of DD drilling. A number of targets were generated from the VTEM survey and a drilling program was embarked upon in 2009 ending in 2011 resulting in some 22,475 m of RC and 93,425 m of DD drilled over a total of 230 RC and 364 diamond holes over the various deposits.

In 2015 all relevant permits were obtained for the Pretea South deposits which gave Golden Star the rights to commence mining in the area. Ahead of the mining two multipurpose drill rigs were utilized to infill the existing drilling along the Bondaye mineralized trend. The majority of drilling conducted at Bondaye was RC drilling with 142 holes being drilled totaling 12,228 meters, In addition to the RC drilling nine diamond drill holes, which totaled, 507 meters were collared to collect metallurgical samples in the fresh and transitional material.

The results from the drilling at Bondaye were used to update a resource model for the area, which in turn was used for the 2015 year end resource and reserve statements, as well as life of mine planning.

Mampon-Abronye

Golden Star entered into an agreement with BGI in 2003 to acquire the Asikuma and Mansiso concessions. Golden Star took over ownership of the concession following the agreement and undertook exploration activities which included auger sampling, regolith mapping, RAB, RC and DD.

In 2006, a baseline environmental monitoring study as part of the environmental impact assessment for the Mampon project was conducted. Community consultations for the Mampon project were conducted throughout the various exploration programs. Agreements have been reached with the land-owners, including an effective moratorium over the project site.

In 2007, Golden Star contracted GEOTECH to run a VTEM survey over both concessions. A total of 17 RC holes, 30 DD holes and 4 geotechnical holes were drilled at Mampon over the years by BGI and Golden Star for a total of 7,454 m of drilling.

In 2013 Golden Star completed 35 holes totaling 3,551 m. This drilling consisted of sterilization drilling of proposed waste dump foot prints as well as additional infill metallurgical sampling holes. The results of the drilling were used to update the Mampon feasibility study. In early 2015, Golden Star paid the Minerals Commission for the conversion of the Asikuma PL to a Mining Lease.

Mineralization

The deposits are located on the 250 km long northeast southwest trending Ashanti Belt, a Paleoproterozoic granitoid-greenstone assemblage of southwest Ghana. These greenstone belts and dividing sedimentary basins were formed and deformed during the Eoeburnean and Eburnean orogeny. The Prestea-Bogoso area occurs at the southern termination of the Ashanti Belt, where the gold deposits, mined or under exploration, are localised principally along a steep to subvertical major crustal structures referred to as the Ashanti trend. The principal structures are graphitic shear zones and mineralized fault filled quartz veins which occur only at Prestea.

The Bogoso-Prestea section of the Ashanti Trend shows a range of mineralization styles associated with graphitic shear zones, which represent the principal displacement zone of a regional-scale shear zone that defines the mineral belt. These styles include laminated quartz vein deposits containing free gold, highly deformed graphitic shear zones containing disseminations of arsenopyrite as the principal gold bearing phase (e.g. Buesichem, Chujah-Dumasi and Bogoso North) and disseminations of sulphides in mafic/intermediate volcanic rocks generally found in the footwall of the main shear zone.

The Bogoso-Prestea deposits can be classified as a lode gold deposits or orogenic mesothermal gold deposits, which are the most common gold systems found within Archean and Paleoproterozoic terrains. In the West African shield, orogenic gold deposits are typically underlain by geology considered to be of Eburnean age and are generally hosted by volcano-sedimentary sequences. The Ashanti belt is considered prospective for orogenic mesothermal gold deposits and hosts numerous other lode gold deposits such as the Obuasi mine.

At Bogoso-Prestea, gold mineralization exhibits a strong relationship with major shear zones, fault zones and second order structures. Three types of mineralization have been identified at Prestea, which are both characterised as mesothermal gold mineralization:

- Arsenopyrite-pyrite rich graphitic shear zones;
- Fault-fill quartz veins along fault zones and second order structures, which typically contains non-refractory, free milling gold; and
- Disseminated mineralization associated with brecciated zones of iron-rich footwall volcanic lenses, which are characterized by finely disseminated arsenopyrite-pyrite rich and silicified replacement zone.

The graphite rich shear-hosted and volcanic hosted mineralization types are refractory and generally lower grade in comparison to fault-filled quartz vein hosted mineralization type.

The weathering profile at Bogoso-Prestea is deep and typically results in extensive surface oxidation of bedrock, to a depth of up to one hundred metres. Generally, the weathering profile typically consists of a lateritic surface, a saprolitic horizon, a transitional zone and a deeper primary sulphide zone.

Drilling

Drilling is carried out by a combination of DD, RC and RAB techniques at the GSBPL operations. With over 5,000 holes drilled and over 400,000 m of drilling conducted on the various deposits, the continued production and grade control drilling is providing appropriate reconciliation with the original drilling. The interpretation of the relevant results is directly related to the wireframe modelling used for the purpose of defining the volume of material used for the mineral resource volume.

All drillhole data is verified by GSBPL staff and independently by consultants and there are no recovery or survey factors which are considered to materially impact the accuracy and reliability of the results.

Sampling and Analysis

For all drilling programs in Ghana, Golden Star follows a standardised approach to drilling and sampling. Sampling is typically carried out along the entire drilled length. For RC drilling, samples are collected every 1 m. Where DD holes have been pre-collared using RC, the individual 1 m RC samples are combined to produce 3 m composites which are then sent for analysis.

Should any 3 m composite sample return a significant gold grade assay, the individual 1 m samples are then sent separately along with those from the immediately adjacent samples.

DD samples are collected, logged and split with a diamond rock saw in maximum 1 m lengths. Detailed logging of the core is done by an appropriate qualified geologist at the core shed, recording colour, lithology, alteration, weathering, structure and mineralization. The sampling concept is to ensure a representative sample of the core is assayed. The remaining half core is retained in the core tray, for reference and additional sampling if required.

Sample assays are performed at either SGS in Tarkwa or TWL which is also based in Tarkwa. Golden Star has used both laboratories and regularly submits quality control samples to each for testing purposes. Both laboratories are independent of Golden Star and are currently in the process of accreditation for international certification for testing and analysis.

Quality control measures are typically set in place to ensure the reliability and trustworthiness of exploration data, and to ensure that it is of sufficient quality for inclusion in the subsequent mineral resource estimates. Quality control measures include written field procedures and independent verifications of aspects such as drilling, surveying, sampling and assaying, data management and database integrity. Appropriate documentation of quality control measures and analysis of quality control data are an integral component of a comprehensive quality assurance program and an important safeguard of project data.

The field procedures implemented by Golden Star are comprehensive and cover all aspects of the data collection process such as surveying, drilling, core and RC cuttings handling, description, sampling and database creation and management. At GSBPL, each task is conducted by appropriately qualified personnel under the direct supervision of a qualified geologist. The measures implemented by Golden Star are considered to be consistent with industry best practice.

Security of Samples

Sample preparation on site is restricted to core logging and splitting, which is carried out by Golden Star. The facilities consist of enclosed core and coarse reject storage facilities, covered logging sheds and areas for the splitting of RC and RAB samples. Core samples are logged geologically and geotechnically on-site prior to being split. Core is halved using a diamond saw and bagged by Golden Star for collection by representatives of the analytical laboratory. Sub-sampling of RC and RAB samples is carried out using a Jones Riffle splitter.

Samples are collated at the mine site after splitting and then transported to the primary laboratory for the completion of the sample preparation and chemical analysis. Exploration samples are trucked by road to the laboratories in Tarkwa.

Sample security involves two aspects, namely maintaining the chain of custody of samples to prevent inadvertent contamination or mixing of samples, and rendering active tampering of samples as difficult as possible.

No specific security safeguards have been put in place by Golden Star to maintain the chain of custody during the transfer of core between drilling sites, the core library, and sample preparation and assaying facilities. Core and rejects from the sample preparation are archived in secure facilities at the core yard and remain available for future testing.

Independent consulting group, SRK, considers the security measures to be adequate and appropriate given the location of the sample preparation and storage facilities within the main mining complex and the additional security surrounding the storage compound.

Metallurgical Test Work

Metallurgical samples collected from the 2016 drilling campaigns were submitted to the site laboratory for recovery analysis on transition and fresh material. The metallurgical sampling concentrated on the Beta Boundary South pits located at Prestea South. A total of 19 samples were collected, 6 fresh and 13 transition. The additional sampling was conducted to determine whether this material could be processed through the current non refractory plant at Bogoso.

Although the metallurgical test results indicated that the Bogoso oxide plant could achieve recoveries greater than 60% these recoveries were not realized when a bulk sample composed of transitional material was run through the plant in 2016.

Mineral Resource and Mineral Reserve Estimates

See “Consolidated Mineral Resources and Mineral Reserve Estimations” section.

Mining Operations

The mining methods used at the Bogoso/Prestea pits are conventional excavator and truck methods typical for this style of gold mineralization. Drilling and blasting of ore and waste is conducted over bench heights of 6 m or 9 m and explosives are delivered to the hole by the manufacturer.

The refractory plant was put on care and maintenance in the third quarter of 2015 and production is only from oxide mining of the Prestea South pits.

The non-refractory plant is currently being fed at a rate of 1.2 Mtpa with oxide ore from the Prestea South pits.

The mine currently utilizes the Bogoso/Prestea storage facility. Initially designed in 2004, the Bogoso/Prestea storage facility comprises of a dual-cell paddock-type facility, located in a valley approximately 1.5 km north east of the processing plants.

Water management at Bogoso/Prestea incorporates water re-use and recycling, with water chemistry forming an integral element in the overall concept of water use at the mine.

To satisfy the requirements of the Environmental Assessment Regulations, 1999 (LI 1652), an EMP for years covering 2016 to 2018 was submitted to the EPA in December 2015. The document is now pending review with the EPA. Following feedback from the EPA, GSBPL will be expected to submit a final EMP to the EPA for certification. The Regulations require submission of an updated EMP every three years.

Exploration and Development

The 2016 exploration drilling program at Prestea concentrated on resource definition of the Bondaye and Beta Boundary pits. A total of 159 holes consisting of 9,744 meters were drilled North of the Bondaye oxide pits and along the planned Beta Boundary South pits. Drilling was successful in expanding the Beta Boundary pits to the south but drilling north of Bondaye did not delineate any further economic gold mineralization.

In 2017 exploration drilling will focus on increasing the oxide material along the Tuapim trend at Prestea South as well as at Mampon and Aboronye. This drilling will commence in Q1 2017 with the intention of adding additional resources to keep the Bogoso oxide processing plant filled to capacity till the end of the year.

CONSOLIDATED MINERAL RESERVE AND MINERAL RESOURCES ESTIMATIONS

Consolidated Mineral Reserves

The table below presents Golden Star's consolidated proven and probable mineral reserves for the year ended December 31, 2016.

	December 31, 2016 Proven Mineral Reserve			December 31, 2016 Probable Mineral Reserve			December 31, 2016 Proven and Probable Mineral Reserve		
	tonnes (000)	grade g/t Au	ounces (000)	tonnes (000)	grade g/t Au	ounces (000)	tonnes (000)	grade g/t Au	ounces (000)
Wassa Open Pit	-	-	-	11,264	1.56	565	11,264	1.56	565
Wassa Underground	-	-	-	5,477	4.21	742	5,477	4.21	742
Stockpiles	695	0.96	21	-	-	-	695	0.96	21
Total Wassa	695	0.96	21	16,741	2.43	1,307	17,436	2.37	1,328
Mampon	-	-	-	301	4.64	45	301	4.64	45
Prestea South	-	-	-	510	2.31	38	510	2.31	38
Prestea Underground	-	-	-	1,094	13.93	490	1,094	13.93	490
Stockpiles	115	2.55	9	-	-	-	115	2.55	9
Total Bogoso / Prestea	115	2.55	9	1,905	9.35	573	2,020	8.96	582
TOTAL	810	1.18	31	18,646	3.13	1,879	19,456	3.05	1,910

Notes to the proven and probable mineral reserve statement:

- (1) The stated mineral reserves have been prepared in accordance with the requirements of NI 43-101 and are classified in accordance with the Canadian Institute of Mining, Metallurgy and Petroleum's "CIM Definition Standards – For Mineral Resources and Mineral Reserves". Mineral reserve estimates reflect the Company's reasonable expectation that all necessary permits and approvals will be obtained and maintained. Mining dilution and mining recovery vary by deposit and have been applied in estimating the mineral reserves.
- (2) Mineral reserves are the economic portion of the measured and indicated mineral resources. Mineral reserve estimates include mining dilution at grades assumed to be zero.
- (3) The 2016 mineral reserves were prepared under the supervision of Dr. Martin Raffield, Senior Vice President Project Development and Technical Services for the Company. Dr. Raffield is a QP as defined by Canada's NI 43-101.
- (4) The mineral reserves at December 31, 2016 were estimated using a gold price assumption of \$1,100 per ounce.
- (5) The slope angles of all pit designs are based on geotechnical criteria as established by external consultants. The size and shape of the pit designs are guided by consideration of the results from a pit optimization program.
- (6) Cut-off grades have been estimated based on operating cost projections, mining dilution and recovery, government royalty payment requirements and applicable metallurgical recovery. Marginal cut-off grade estimates for the open pits are as follows: Wassa 0.7 g/t; Mampon 1.5 g/t; and Prestea South 1.2 g/t. Break-even cut-off grade estimates for the underground mines are as follows: Wassa Underground 2.4 g/t; and Prestea Underground 7.7 g/t;
- (7) Numbers may not add due to rounding;
- (8) Only non-refractory ore is included in mineral reserves.

Consolidated Mineral Resources

The table below presents Golden Star's consolidated measured and indicated mineral resources for the year ended December 31, 2016.

	December 31, 2016 Indicated Mineral Resources			December 31, 2016 Measured & Indicated Mineral Resources			December 31, 2015 Measured & Indicated Mineral Resources		
	tonnes (000)	grade g/t Au	ounces (000)	tonnes (000)	grade g/t Au	ounces (000)	tonnes (000)	grade g/t Au	ounces (000)
Wassa Open Pit	27,500	1.43	1,265	27,500	1.43	1,265	37,974	1.23	1,501
Wassa Underground	13,499	3.82	1,656	13,499	3.82	1,656	13,090	3.85	1,621
Wassa Other	3,348	3.78	407	3,348	3.78	407	3,583	3.76	434
Subtotal Wassa	44,347	2.33	3,328	44,347	2.33	3,328	54,647	2.02	3,556
Bogoso / Prestea (refractory)	14,424	3.01	1,396	14,424	3.01	1,396	14,740	3.00	1,420
Mampon	418	4.11	55	418	4.11	55	396	4.25	54
Prestea South	1,176	2.28	86	1,176	2.28	86	2,568	2.12	175
Prestea Underground	1,570	15.69	792	1,570	15.69	792	1,597	15.52	797
Bogoso / Prestea Other	2,230	1.69	121	2,230	1.69	121	2,151	1.70	118
Subtotal Bogoso / Prestea	19,818	3.85	2,451	19,818	3.85	2,451	21,452	3.72	2,564
TOTAL	64,165	2.80	5,788	64,165	2.80	5,778	76,099	2.50	6,120
TOTAL (excluding refractory)	49,741	2.7	4,382	49,741	2.74	4,382	61,359	2.38	4,700

Consolidated Inferred Mineral Resources

The table below presents Golden Star's consolidated inferred mineral resources for the year ended December 31, 2016.

	December 31, 2016 Inferred Mineral Resources		
	tonnes (000)	grade g/t Au	ounces (000)
Wassa Open Pit	149	1.43	7
Wassa Underground	14,450	4.16	1,931
Wassa Other	982	5.18	164
Subtotal Wassa	15,581	4.20	2,102
Bogoso / Prestea (refractory)	1,112	2.78	99
Mampon	100	2.10	7
Prestea South	40	1.97	3
Prestea Underground	3,203	8.78	905
Bogoso / Prestea Other	380	1.55	19
Subtotal Bogoso / Prestea	4,835	6.64	1,032
TOTAL	20,417	4.77	3,134
TOTAL (excluding refractory)	19,305	4.89	3,034

Notes to the measured and indicated mineral resources and the inferred mineral resources:

- (1) The mineral resources were estimated in compliance with the requirements of NI 43-101.
- (2) The mineral resources for "Wassa Other" include Father Brown, Benso and Chichiwilli.
- (3) The mineral resources for Bogoso / Prestea Other include Chujah, Dumasi, Bogoso North, Buesichem, Opon and Ablifa.
- (4) The Wassa Underground mineral resource has been estimated below the \$1,300 per ounce of gold pit shell using an economic gold grade cut-off of 1.81 g/t Au, which the Company believes would be the lower cut-off for underground.
- (5) The Father Brown Underground mineral resource has been estimated below the \$1,300 per ounce of gold pit shell using an economic gold grade cut-off of 3.17 g/t Au, which the Company believes would be the lower cut-off for underground.
- (6) Prestea Underground mineral resource has been estimated below the \$1,300 per ounce of gold pit shell of Prestea South down to 3,800 m elevation using a gold cut-off at 5.43 g/t Au.
- (7) Mineral resources were estimated using optimized pit shells at a gold price of \$1,300 per ounce. Other than gold price, the same optimized pit shell parameters and modifying factors used to determine the mineral reserves were used to determine the mineral resources.

- (8) The identified mineral resources in the block model are classified according to the CIM definitions for the measured, indicated, and inferred categories and are constrained by a block cut-off grade calculated using a gold price of US\$ 1,300/ounce and below the 2016 year-end topographic surface. The mineral resources are reported in situ without modifying factors applied.
- (9) The stated mineral resources were prepared under the supervision of S. Mitchel Wasel, Vice President of Exploration for the Company. Mr. Wasel is a Qualified Person as defined in NI 43-101.
- (10) Numbers may not add due to rounding.
- (11) Mineral resources are not mineral reserves and do not necessarily demonstrate economic viability.

RISK FACTORS

The following sets forth certain risks and uncertainties that could have a material adverse effect on the Company's business, financial condition and/or results of operations and the trading price of its common shares, which may decline, and investors may lose all or part of their investment. Additional risks and uncertainties that the Company does not presently know or that it currently deems immaterial also may impair its business operations. Golden Star cannot assure you that we will successfully address these risks. In addition, other currently unknown risks exist that may affect the Company's business.

GENERAL RISKS

Working Capital may not be sufficient to meet future obligations

At December 31, 2016, the Company had current assets of \$77.4 million and current liabilities of \$137.8 million. Removing the non-cash deferred revenue current liability of \$19.2 million, this resulted in a working capital deficit of \$41.2 million as at December 31, 2016. The Company's ability to reduce the working capital deficit will depend on whether gold prices increase to levels significantly beyond the average realized gold price and/or whether the Company's operating costs are such that its operations generate sufficient cash flows to improve working capital.

In addition to cash operating costs, the Company's obligations also include a 5% royalty to the Government of Ghana, reclamation expenditures, corporate general and administration expenditures, interest and principal payments on long term debt and capital expenditures.

The Company's ability to repay or refinance its future obligations depends on a number of factors, some of which are beyond its control. Factors that influence the Company's ability to meet these obligations include general global economic conditions, credit and capital market conditions, results of operations, mineral reserves and resources and the price of gold. There is no guarantee that the Company will have positive working capital in the future, or that the working capital generated from operations will be sufficient to cover its expansion plans or for future operations.

The Company has pledged substantially all of its assets as security and may not be able to raise additional debt as a result

As part of the Term Loan with Royal Gold and the Stream Transaction with RGLD, the Company has pledged substantially all of its assets as security to Royal Gold and RGLD. Should Golden Star require additional funds to complete Prestea Underground or to service debt or general and administrative costs, it may be unable to raise additional debt financing without available collateral.

Golden Star may have to repay the Term Loan early under the provision for excess cash flow, thereby limiting cash flow available for certain other activities

The Term Loan with Royal Gold has an excess cash flow provision which requires Golden Star to repay the Term Loan in advance of the term date should the Company produce excess cash flow as defined in the Term Loan. In particular, (i) commencing with the quarter ending June 30, 2017 and continuing through and including the quarter ending December 31, 2017, the Company will deliver to Royal Gold an amount equal to 25% of its excess cash flow (which is generally determined as the difference of gold revenue for such period less the sum of capital expenditures, cash operating expenses, other cash expenses (related to water treatment, severance and asset retirement obligations and certain administrative expenses), and scheduled debt service and debt repayment for such period) and (ii) commencing with the quarter ending March 31, 2018 and continuing for each quarter thereafter, the Company will deliver to Royal Gold an amount equal to 50% of its excess cash flow. Should excess cash flow payments of the Term Loan be required, this could impact the Company's cash flow relating to exploration activities on concessions other than those currently held by Wassa and the Prestea South open pit mines.

A substantial or prolonged decline in gold prices would have a material adverse effect on the Company

The price of the common shares, the Company's results of operations and financial condition, and its exploration, development and mining activities have previously been, and would in the future be significantly adversely affected by a substantial or prolonged decline in the price of gold. The price of gold is volatile and is affected by numerous factors beyond the Company's control such as the sale or purchase of gold by various central banks and financial institutions, inflation or deflation, fluctuation in the value of the United States dollar and foreign currencies, global and regional demand, and the political and economic conditions of major gold-producing countries throughout the world. Any drop in the price of gold would adversely impact the Company's revenues, profits and cash flows. In particular, a sustained low gold price could:

- cause suspension of the Company's mining operations at Wassa Open Pit, Wassa Underground, Prestea and the development of Prestea Underground if these operations become uneconomic at the then-prevailing gold price, thus further reducing revenues;
- cause the Company to be unable to fulfill its obligations under agreements with its partners or under its permits and licenses which could cause it to lose its interests in, or be forced to sell, some of its properties;
- cause Golden Star to be unable to fulfill its debt repayment obligations;
- halt or delay the development of new projects such as Prestea Underground; and
- reduce funds available for exploration and/or development activities, with the result that depleted mineral reserves may not be replaced by new exploration activities.

Furthermore, the need to reassess the feasibility of any of the Company's development projects because of declining gold prices could cause substantial delays or could interrupt development until a reassessment could be completed. Life-of-mine plans incorporating significantly lower gold prices could result in reduced estimates of mineral reserves and mineral resources and in material write-downs of the Company's investments in mining properties and increased amortization, reclamation and closure charges.

The Company has incurred and may in the future incur substantial losses that could make financing its operations and business strategy more difficult and that may affect its ability to service its debts as they become due

The net loss attributable to Golden Star shareholders was \$39.6 million in 2016, with a net loss of \$67.7 million attributable to Golden Star shareholders in 2015 and a net loss of \$73.1 million attributable to Golden Star shareholders in 2014. In recent years, lower ore grades from the Company's mines, lower gold recovery rates and impairment write-offs of mine property and/or exploration property costs have been the primary factors contributing to such losses. In the future, these factors, as well as declining gold prices, could cause the Company to continue to be unprofitable. Future operating losses could adversely affect the Company's ability to raise additional capital if needed, and could materially and adversely affect its operating results and financial condition. In addition, continuing operating losses could affect the Company's ability to meet its debt repayment obligations.

The Company's obligations could strain its financial position and impede its business strategy

Golden Star had total consolidated debt and liabilities (excluding deferred revenue) as of December 31, 2016, of \$305.5 million, including \$1.1 million in equipment financing loans; \$2.0 million in finance leases; \$18.8 million (\$20.0 million face value) pursuant to the Term Loan net of fees; \$13.3 million (\$13.6 million face value) pursuant to the Company's outstanding 5% Convertible Debentures; \$47.6 million (\$60.0 million face value) pursuant to the Company's outstanding 7% Convertible Debentures; \$95.0 million of current trade payables and accrued liabilities; \$22.3 million (\$24.5 million face value) under a vendor agreement with a current account creditor; \$77.4 million accrual for environmental rehabilitation liabilities; \$10.5 million of other long term liabilities; and \$17.8 million of derivatives liabilities. The Company's indebtedness and other liabilities may increase as a result of general corporate activities. These liabilities could have important consequences, including the following:

- increasing the Company's vulnerability to depressed gold prices, and general adverse economic and industry conditions;
- limiting the Company's ability to obtain additional financing to fund future working capital, capital expenditures, exploration and development projects and other general corporate requirements;
- requiring Golden Star to dedicate a significant portion of its cash flow from operations to make debt service payments, which would reduce its ability to fund working capital, mining operations, capital expenditures, exploration and development projects and other general corporate requirements;
- limiting the Company's flexibility in planning for, or reacting to, changes in its business and industry; and
- placing the Company at a disadvantage when compared to its competitors that have less debt relative to their market capitalization.

The conversion of the 7% Convertible Debentures may result in additional dilution and/or a decrease in cash available for other purposes

The Company's 7% Convertible Debentures will mature on August 15, 2021. If the 7% Convertible Debentures are converted by the holder before August 1, 2019, Golden Star will, in addition to the other consideration payable or deliverable in connection with such conversion, make a conversion make-whole payment in cash, common shares or a combination thereof, at the Company's election, to the converting holder equal to the sum of the present value of the scheduled payments of interest that would have been made on the 7% Convertible Debentures from the conversion date to August 1, 2019, subject to certain limitations. Accordingly, upon a conversion of the 7% Convertible Debentures, including a conversion before August 1, 2019, holders of common shares may be subject to additional dilution and/or such conversion may reduce the amount of cash available to the Company for other purposes.

If the Company does not have sufficient liquidity to repay the 7% Convertible Debentures in cash on maturity or upon a fundamental change as described herein, and cannot secure additional financing to do so, there is a risk that Golden Star may default in repaying the 7% Convertible Debentures and/or that settling the obligation in shares will lead to significant dilution of the common shares of existing and prospective shareholders.

The Company may not be able to refinance the Convertible Debentures if required or if it so desires

The Company may need or desire to refinance all or a portion of the 7% Convertible Debentures or any other future indebtedness that it incurs on or before the maturity of the 7% Convertible Debentures. Golden Star cannot make any assurances that it will be able to refinance any of its indebtedness on commercially reasonable terms, if at all.

The Company may not have sufficient funds or the ability to raise the funds to pay interest on the 7% Convertible Debentures or purchase the 7% Convertible Debentures upon a fundamental change

The 7% Convertible Debentures bear interest semi-annually at a rate of 7% per year. If a fundamental change occurs, the Company will be required to offer to purchase, for cash, all of the outstanding 7% Convertible Debentures at a purchase price in cash equal to 100% of the principal amount, plus any accrued and unpaid interest. Golden Star may not have sufficient funds to pay the interest or purchase price when due. In addition, the terms of any borrowing agreements which Golden Star may enter into from time to time may require early repayment of borrowings under circumstances similar to those constituting a fundamental change. Such agreements may also make the Company's purchase of 7% Convertible Debentures an event of default under such agreements. If Golden Star fails to pay interest on the 7% Convertible Debentures or purchase the 7% Convertible Debentures when required, it will be in default under the indenture governing the 7% Convertible Debentures. In addition, a fundamental change may also constitute an event of default or require prepayment under, or result in the acceleration of the maturity of, the Company's other indebtedness outstanding at the time.

Estimates of the Company's mineral reserves and mineral resources could be inaccurate, which could cause actual production and costs to differ from estimates

There are numerous uncertainties inherent in estimating proven and probable mineral reserves and measured, indicated and inferred mineral resources, including many factors beyond the Company's control. The accuracy of estimates of mineral reserves and mineral resources is a function of the quantity and quality of available data and of the assumptions made and judgments used in engineering and geological interpretation, which could prove to be unreliable. These estimates of mineral reserves and mineral resources may not be accurate, and mineral reserves and mineral resources may not be able to be mined or processed profitably or at all.

Fluctuations in gold prices, results of drilling, metallurgical testing, changes in operating costs, production, and the evaluation of mine plans subsequent to the date of any mineral reserve or mineral resource estimate could require revision of the estimates. The volume and grade of mineral reserves mined and processed and recovery rates might not be the same as currently anticipated. Any material reductions in estimates of the Company's mineral reserves and mineral resources, or of its ability to extract these mineral reserves and mineral resources, could have a material adverse effect on its results of operations and financial condition.

The Company currently has only three sources of operational cash flows, which could be insufficient by themselves to fund the Company's continuing exploration and development activities

The Company's only current significant internal sources of funds are operational cash flows from Wassa Open Pits, Wassa Underground and Prestea. The anticipated continuing exploration and development of the Company's properties are expected to require significant expenditures over the next several years. If cash on hand, free cash flows generated by Wassa and Prestea and any other available facilities, are insufficient to cover all of the Company's capital investment needs, it may require additional financing or it may consider rescheduling capital spending. Furthermore, the Company is obligated under the Stream Transaction to sell a certain percentage of gold production at a reduced gold price, which could limit its future cash flows. Golden Star's ability to raise significant new capital will be a function of macroeconomic conditions, future gold price, its operational performance and its then current cash flow and debt position, among other factors. Continued uncertainty in the global economy may affect lending practices and the Company's ability to access capital. In addition, the Company has granted RGLD and Royal Gold a security interest over the assets of Bogoso/Prestea, Prestea Underground, Wassa and Wassa Underground in connection with the Stream Transaction and the Term Loan, which could make debt financing on favourable terms more difficult to arrange. Furthermore, there is no certainty that Golden Star will be able to meet its gold delivery obligation under the Stream Transaction or otherwise meet its obligations. As a result, the Company may not be able to obtain adequate financing on acceptable terms or at all, which could cause the Company to delay or indefinitely postpone further exploration and development of its properties. Consequently, Golden Star could lose its interest in, or could be forced to sell, some or all of its properties. If the Company raises additional funds through the sale of equity securities or securities convertible into equity securities, shareholders may have their equity interest in the Company diluted.

The Company is subject to fluctuations in currency exchange rates and policies on foreign currencies, which could materially adversely affect its financial position

The Company's revenues are in United States dollars, and it maintains most of its cash and cash equivalents in United States dollars or United States dollar-denominated securities. Golden Star converts its United States funds to foreign currencies as certain payment obligations become due. Accordingly, the Company is subject to fluctuations in the rates of currency exchange between the United States dollar and these foreign currencies, and these fluctuations could materially affect the Company's financial position and results of operations. A portion of the operating costs at Prestea and Wassa is based on the Ghanaian currency, the Cedi. The Company is required by the Government of Ghana to convert into Cedis 20% of the foreign exchange proceeds that it receives from selling gold, but the Government could require the Company to convert a higher percentage of gold sales proceeds into Cedis in the future. Golden Star obtains construction and other services and materials and supplies from providers in Australia, South Africa and other countries. The costs of goods and services could increase or decrease due to changes in the value of the United States dollar or the Cedi, the Euro, the Australian dollar, the British Pound, the South African Rand or other currencies. Consequently, operation and development of the Company's properties could be more costly than anticipated.

Any hedging activities might be unsuccessful and incur losses

Golden Star entered into certain hedging instruments in 2016 and it may enter into additional hedging arrangements in 2017 and beyond. The Company's current and future hedging activities might not protect adequately against declines in the price of gold. In addition, although a hedging program could protect the Company from a decline in the price of gold, it might also prevent the Company from benefiting fully from gold price increases. For example, as part of a hedging program, the Company could be obligated to sell gold at a price lower than the then-current market price.

Risks inherent in acquisitions that Golden Star might undertake could adversely affect its current business, financial condition, and growth

The Company plans to continue to pursue the acquisition of producing, development and advanced stage exploration properties and companies. The search for attractive acquisition opportunities and the completion of suitable transactions are time consuming and expensive, divert management attention from the Company's existing business and may be unsuccessful. Success in the Company's acquisition activities depends on its ability to complete acquisitions on acceptable terms and integrate the acquired operations successfully with its operations. Any acquisition would be accompanied by risks. For example, there may be a significant change in commodity prices after the Company has committed to complete a transaction and established the purchase price or exchange ratio, a material mineral deposit may prove to be below expectations or the acquired business or assets may have unknown liabilities which may be significant. Golden Star may lose the services of its key employees or the key employees of any business the Company acquires, or have difficulty integrating operations and personnel. The integration of an acquired business or assets may disrupt the Company's ongoing business and its relationships with employees, suppliers and contractors. Any one or more of these factors or other risks could cause the Company to not realize the anticipated benefits of an acquisition of properties or companies, and could have a material adverse effect on the Company's current business, financial condition, results of operations and on its ability to grow.

The Company is subject to litigation risks

All industries, including the mining industry, are subject to legal claims, with and without merit. As such, Golden Star is involved in various routine legal proceedings incidental to its business. Defense and settlement costs can be substantial, even with respect to claims that have no merit. Due to the inherent uncertainty of the litigation process, the resolution of any particular legal proceeding could have a material effect on the Company's future financial position and results of operations.

The Company is subject to operational risks

The Company is subject to a number of operational hazards that can delay production or result in liability to the Company. The Company's activities are subject to a number of risks and hazards including:

- power shortages from the national grid;
- mechanical and electrical equipment failures;
- parts availability;
- unexpected changes in mineralization grades;
- unexpected changes in mineralization chemistry and gold recoverability;
- environmental hazards;
- discharge of pollutants or hazardous chemicals;
- industrial accidents;
- labor disputes and shortages;
- supply and shipping problems and delays;
- shortage of equipment and contractor availability;
- unusual or unexpected geological or operating conditions;
- blockage of access to the underground operations;
- inadequate ventilation at the underground operations;
- cave-ins of underground workings;
- failure of pit walls or dams;
- fire;
- marine and transit damage and/or loss;
- changes in the regulatory environment, including in the area of climate change;
- delayed or restricted access to mineral deposits and/or properties due to community interventions; and
- natural phenomena such as inclement weather conditions, floods, droughts and earthquakes.

These or other occurrences could result in damage to, or destruction of, mineral properties or production facilities, personal injury or death, environmental damage, delays in mining, delayed production, monetary losses and possible legal liability. Satisfying such liabilities could be very costly and could have a material adverse effect on the Company's financial position and results of operations.

The Company's mining operations are subject to numerous environmental laws, regulations and permitting requirements and bonding requirements that can delay production and adversely affect operating and development costs

Compliance with existing regulations governing the discharge of materials into the environment, or otherwise relating to environmental protection, in the jurisdictions where the Company has projects may have a material adverse effect on its exploration activities, results of operations and competitive position. New or expanded regulations, if adopted, could affect the exploration, development, or operation of the Company's projects or otherwise have a material adverse effect on its operations.

Portions of Wassa and the Asikuma mining concession ("Asikuma") are located within certain forest reserve areas. The Mampon pit is located within the Opon Mansi Forest Reserve. Although Asikuma and the associated sections of the Opon Mansi Forest Reserve have been approved by the Government of Ghana as eligible for mining permits, permits for projects in forest reserve areas may not be issued in a timely fashion, or at all, and such permits may contain special requirements that may be burdensome or uneconomic to comply with.

Mining and processing gold from the Company's future development projects in Ghana will require mining, environmental, and other permits and approvals from the Government of Ghana. The trend to longer lead times and a higher cost in obtaining environmental permits has reached a point where the Company is no longer able to accurately estimate permitting times for its planning purposes. The increases in permitting requirements could affect the Company's environmental management activities including, but not limited to, tailings disposal facilities and water management projects at its mines.

Due to an increased level of non-governmental organization activity targeting the mining industry in Ghana, the potential for the Government of Ghana to delay the issuance of permits or impose new requirements or conditions upon mining operations in Ghana may increase. Any changes in the Government of Ghana's policies, or their application, may be costly to comply with and may delay mining operations. The exact nature of other environmental control problems, if any, which the Company may encounter in the future, cannot be predicted primarily because of the changing character of environmental requirements that may be enacted within the various jurisdictions where the Company operates.

As a result of the foregoing risks, project expenditures, production quantities and rates, estimates of rehabilitation expenditures and cash operating costs, among other things, could be materially and adversely affected and could differ materially from anticipated expenditures, production quantities and rates, and costs. In addition, estimated production dates could be delayed materially. Any such events could have a materially adverse effect on the Company's business, financial condition, results of operations and cash flows.

The development and operation of the Company's mining projects (including Prestea Underground and the continued development of Wassa Underground and Mampon) involve numerous uncertainties that could affect the feasibility, profitability or timing of such projects

Mine development projects typically require a number of years and significant expenditures during the development phase before production is possible.

Development projects are subject to the completion of successful feasibility studies and environmental and socioeconomic assessments, the issuance of necessary governmental permits and receipt of adequate financing. The economic feasibility of development projects is based on many factors such as:

- estimation of mineral reserves and mineral resources;
- mining rate, dilution and recovery;
- anticipated metallurgical characteristics of the ore and gold recovery rates;
- environmental and community considerations including resettlement, permitting and approvals;

- future gold prices; and
- anticipated capital and operating costs.

Estimates of proven and probable mineral reserves and operating costs developed in feasibility studies are based on reasonable assumptions including geologic and engineering analyses and may not prove to be accurate.

The management of mine development projects (including Prestea Underground and Mampon) and the start-up of new operations (including Wassa Underground, Prestea Underground, and Mampon) are complex. Completion of development and the commencement of production may be subject to delays and cost overruns. Any of the following events, among others, could affect the profitability or economic feasibility of a project:

- unanticipated changes in grade and tonnage of ore to be mined and processed;
- unanticipated adverse geotechnical conditions;
- incorrect data on which engineering assumptions are made;
- costs of constructing and operating a mine in a specific environment;
- delays on delivery of equipment required for the development and startup of the projects;
- unexpected breakdowns of equipment critical to the development process;
- unexpected increases in the cost of equipment and services related to the mine development projects;
- cost of processing and refining;
- availability of economic sources of power and fuel;
- availability of qualified staff and/or contractors;
- adequacy of water supply;
- adequate access to the site including competing land uses (such as agriculture and illegal mining);
- unanticipated transportation costs and shipping incidents and losses;
- significant increases in the cost of diesel fuel, cyanide or other major components of operating costs;
- government regulations and changes to existing regulations (including regulations relating to prices, royalties, duties, taxes, permitting, restrictions on production, quotas on exportation of minerals, protection of the environment and agricultural lands, including bonding requirements);
- fluctuations in gold prices; and
- accidents, labor actions and force majeure events.

Adverse effects on the operations of Wassa Underground, Prestea Underground, and Mampon, or the further development of Prestea Underground and Mampon, could also adversely affect the Company's business (including the Company's ability to achieve its production estimates), financial condition, results of operations and cash flow.

The Company needs to continually discover, develop or acquire additional mineral reserves for gold production and a failure to do so would adversely affect its business and financial position in the future

Because mines have limited lives based on proven and probable mineral reserves, Golden Star must continually replace and expand mineral reserves as its mines produce gold. The Company is required to estimate mine life in connection with its estimation of mineral reserves, but its estimates may not be correct. In addition, mine life would be shortened if Golden Star expands production or if it loses mineral reserves due to changes in gold price or operating costs. The Company's ability to maintain or increase its annual production of gold will be dependent in part on its ability to bring new mines into production and to expand or extend the life of existing mines.

Gold exploration is highly speculative, involves substantial expenditures, and is frequently non-productive.

Gold exploration involves a high degree of risk. Exploration projects are frequently unsuccessful. Few prospects that are explored are ultimately developed into producing mines. The Company cannot assure you that its gold exploration efforts will be successful.

The success of gold exploration is dependent in part on the following factors:

- the identification of potential gold mineralization based on surface analysis;

- availability of prospective land;
- availability of government-granted exploration and exploitation permits;
- the quality of the Company's management and its geological and technical expertise; and
- the funding available for exploration and development.

Substantial expenditures are required to determine if a project has economically mineable mineralization. It could take several years to establish proven and probable mineral reserves and to develop and construct mining and processing facilities. Because of these uncertainties, the Company cannot assure you that current and future exploration programs will result in the discovery of mineral reserves, the expansion of its existing mineral reserves or the development of mines.

The Company faces competition from other mining companies in connection with the acquisition of properties

Golden Star faces strong competition from other mining companies in connection with the acquisition of producing properties or properties capable of producing gold. Many of these companies have greater financial resources, operational experience and technical capabilities. As a result of this competition, the Company might be unable to maintain or acquire attractive mining properties on terms it considers acceptable or at all. Consequently, the Company's future revenues, operations and financial condition could be materially adversely affected.

Title to the Company's mineral properties could be challenged

Golden Star seeks to confirm the validity of its rights to title to, or contract rights with respect to, each mineral property in which the Company has a material interest. The Company has mining leases with respect to Prestea, Wassa Underground, Prestea Underground and Mampon. Title insurance generally is not available, and the Company's ability to ensure that it has obtained a secure claim to individual mineral properties or mining concessions is limited.

Golden Star generally does not conduct surveys of its properties until such properties have reached the development stage, and therefore, the precise area and location of such properties could be in doubt. Accordingly, the Company's mineral properties could be subject to prior unregistered agreements, transfers or claims, and title could be affected by, among other things, undetected defects. In addition, the Company might be unable to operate its properties as permitted or to enforce its rights with respect to its properties.

The Company depends on the services of key executives

The Company is dependent on the services of key executives including its President and Chief Executive Officer, Chief Operating Officer and Chief Financial Officer, and a number of other highly skilled and experienced executive personnel. Due to the relatively small size of the Company's management team, the loss of one or more of these persons or the Company's inability to attract and retain additional highly skilled employees could have an adverse effect on the Company's business and future operations.

The Company's use of contractors may expose it to a number of risks and increase its mining costs

Golden Star uses mining contractors in connection with the Company's mining operations. The use of contractors subjects Golden Star to certain risks, some of which are outside the Company's control, including:

- the Company's ability to negotiate agreements with contractors on acceptable terms;
- reduced control over those aspects of operations which are the responsibility of the contractor;
- failure of a contractor to perform under its agreement;
- interruption of operations or increased costs in the event that a contractor ceases to do business due to insolvency or other unforeseen events;
- failure of a contractor to comply with applicable legal and regulatory requirements;
- labor relation issues from a contractors' workforce; and
- the potential to incur liability to third parties as a result of the actions of the Company's contractors.

The occurrence of one or more of these risks could adversely affect the Company's financial position and results of operations.

The Company's insurance coverage could be insufficient

The Company's business is subject to a number of risks and hazards generally, including:

- adverse environmental conditions;
- industrial accidents;
- labor disputes;
- unusual or unexpected geological conditions;
- ground or slope failures;
- cave-ins;
- fire damage;
- changes in the regulatory environment;
- marine transit and shipping damage and/or losses;
- natural phenomena such as inclement weather conditions, floods and earthquakes; and
- political risks including expropriation and civil war.

Such occurrences could result in:

- damage to mineral properties or production facilities and equipment;
- personal injury or death;
- loss of legitimate title to properties;
- environmental damage to the Company's properties or the properties of others;
- delays in mining, processing and development;
- monetary losses; and
- possible legal liability.

Although Golden Star maintains insurance in amounts that it believes to be reasonable, the Company's insurance might not cover all the potential risks associated with its business. Golden Star might also be unable to maintain insurance to cover these risks at economically feasible premiums or at all. Insurance coverage might not continue to be available or might not be adequate to cover any resulting liability. Moreover, insurance against risks such as environmental pollution or other hazards as a result of exploration and production is not generally available to Golden Star or to other companies in the mining industry on acceptable terms. The Company might also become subject to liability for pollution or other hazards which it cannot insure against or which it might elect not to insure against because of premium costs or other reasons. Losses from these events might cause Golden Star to incur significant costs that could have a material adverse effect upon its business, results of operations or financial condition.

The Company is dependent on information technology systems, which are subject to certain risks, including cybersecurity risks and data leakage risks

The Company is dependent upon information technology systems in the conduct of its operations. Any significant breakdown, invasion, virus, cyber attack, security breach, destruction or interruption of these systems by employees, others with authorized access to the Company's systems, or unauthorized persons could negatively impact its operations. To the extent any invasion, cyber attack or security breach results in disruption to the Company's operations, loss or disclosure of, or damage to, its data or confidential information, its reputation, business, results of operations and financial condition could be materially adversely affected. The Company's systems and insurance coverage for protecting against cyber security risks may not be sufficient. Although to date the Company has not experienced any material losses relating to cyber attacks, it may suffer such losses in the future. Golden Star may be required to expend significant additional resources to continue to modify or enhance its protective measures or to investigate and remediate any information security vulnerabilities.

GOVERNMENTAL AND REGULATORY RISKS

As a holding company, limitations on the ability of the Company's operating subsidiaries to make distributions to it could adversely affect the funding of the Company's operations.

Golden Star is a holding company organized under the federal laws of Canada that conducts operations primarily through foreign (principally Ghanaian) subsidiaries, and substantially all of the Company's assets consist of equity in these entities. Accordingly, any limitation on the transfer of cash or other assets between the parent corporation and these entities, or among these entities, could restrict the Company's ability to fund its operations efficiently, or to repay the 5% Convertible Debentures, the 7% Convertible Debentures, the Term Loan, or other debt, or on its ability to fulfill its obligations under the Stream Transaction. Any such limitations or the perception that such limitations might exist now or in the future, could have an adverse impact on available credit and the valuation and share price of Golden Star.

The Government of Ghana may make or propose changes to the mining fiscal regime that will have a significant impact on the Company's overall costs

In 2012, the Government of Ghana announced its intent to introduce a 10% windfall profit tax on mining companies. In 2013, as a result of the decline in spot gold prices, the Government of Ghana suspended its implementation of the proposed windfall profit tax. However if gold prices increase the Government of Ghana may proceed with its plan to implement the proposed 10% windfall profit tax.

A new Income Tax Act ("ITA") was passed by Ghana's parliament and assented to by the President on September 1, 2015, on which date the ITA entered into force. The implementation of the ITA commenced on January 1, 2016. The significant change in the ITA that may affect the Company is that tax depreciation claims on plant, equipment and mining properties will be included in losses which expire after five years rather than being included in a capital allowance balance that carries forward indefinitely.

The Government of Ghana could review the existing tax stability agreements of mining companies operating in Ghana. While the Company's mines do not have tax stability agreements, the Government of Ghana could decide to review the Company's Deeds of Warranty which specify certain tax agreements for its properties. Such a review could result in some of the Company's financial concessions being revoked or changes which could have a significant impact on its business, results of operations or financial condition.

The Company faces several risks inherent in conducting business internationally, including compliance with U.S., Canadian and international laws and regulations that apply to the Company's international operations.

The Company has offices or activities in several jurisdictions, including Ghana, other parts of West Africa and Brazil. Accordingly, Golden Star faces several risks inherent in conducting business internationally, including compliance with U.S., Canadian and international laws and regulations that apply to the Company's international operations. These laws and regulations include data privacy requirements, labor relations laws, tax laws, anti-competition regulations, import and trade restrictions, export requirements, the *Canadian Corruption of Foreign Public Officials Act*, the U.S. Foreign Corrupt Practices Act and other U.S. federal laws and regulations established by the Office of Foreign Asset Control, as well as similar laws in the countries in which Golden Star conducts its business, which laws prohibit corrupt payments to governmental officials or certain payments or remunerations to customers. Given the high level of complexity of these laws, however, there is a risk that some provisions may be inadvertently breached by Golden Star, for example through fraudulent or negligent behavior of individual employees, the Company's failure to comply with certain formal documentation requirements, or otherwise. Violations of these laws and regulations could result in fines, criminal sanctions against the Company, its officers or its employees, requirements to obtain export licenses, cessation of business activities in sanctioned countries, implementation of compliance programs, and prohibitions on the conduct of the Company's business. Any such violations could include prohibitions on the Company's ability to conduct business in one or more countries and could materially damage its reputation, its international expansion efforts, its ability to attract and retain employees, its business and its operating results. The Company's success depends, in part, on its ability to anticipate these risks

and manage these challenges. These factors or any combination of these factors may adversely affect the Company's revenue or its overall financial performance.

The Company is subject to changes in the regulatory environment where it operates which may increase its costs of compliance

The Company's mining operations and exploration activities are subject to extensive regulation governing various matters, including:

- licensing;
- production;
- taxes;
- disposal of process water or waste rock;
- toxic substances;
- development and permitting;
- exports and imports;
- labor standards;
- mine and occupational health and safety;
- environmental protection and corporate responsibility, and
- mine rehabilitation and closure plans.

Compliance with these regulations increases the costs of the following:

- planning;
- designing;
- drilling;
- operating;
- developing;
- constructing; and
- closure, reclamation and post closure.

Golden Star believes that it is in substantial compliance with current laws and regulations in Ghana and elsewhere. However, these laws and regulations are subject to frequent change and reinterpretation. Amendments to current laws and regulations governing operations and activities of mining companies or more stringent implementation or interpretation of these laws and regulations could have a material adverse impact on Golden Star. These factors could cause a reduction in levels of production and delay or prevent the development or expansion of the Company's properties in Ghana.

The implementation of changes in regulations that limit the amount of proceeds from gold sales that could be withdrawn from Ghana could also have a material adverse impact on the Company, as Wassa and Bogoso/Pretea are currently the its only sources of internally generated operating cash flows.

Environmental bonding requirements are under review in Ghana and bonding requirements may be increased

As part of its periodic assessment of mine reclamation and closure costs, the Ghana Environmental Protection Agency ("EPA") reviews the adequacy of reclamation bonds and guarantees. In certain cases, it has requested higher levels of bonding based on its findings. If the EPA were to require additional bonding at the Company's properties, it may be difficult, if not impossible, to provide sufficient bonding. If the Company is unable to meet any such increased bonding requirements or negotiate an acceptable solution with the Government of Ghana, its operations and exploration and development activities in Ghana may be materially adversely affected.

The Government of Ghana has the right to increase its interest in certain subsidiaries.

The Government of Ghana has a 10% carried interest in the mineral operations of Ghanaian mining companies. The carried interest comes into existence at the time the government issues a mining license. As such, the Government of Ghana currently has a 10% carried interest in the Company's subsidiaries that own Bogoso/Prestea, Prestea Underground, Wassa, Wassa Underground and Mampon.

The Government of Ghana has the right to acquire a special share or "golden share" in such subsidiaries at any time for no consideration or such consideration as the Government of Ghana and such subsidiaries might agree, and a pre-emptive right to purchase all gold and other minerals produced by such subsidiaries. A "golden share" carries no voting rights and does not participate in dividends, profits or assets. While the Government of Ghana has not sought to exercise any of these rights at the Company's properties, any such attempts to do so in the future could adversely affect the Company's business, results of operations or financial condition.

The Company is subject to risks relating to exploration, development and operations in foreign countries

The Company's business assets and operations are affected by various political and economic uncertainties in the countries where it operates, including:

- war, civil unrest, terrorism, coups or other violent or unexpected changes in government;
- political instability and violence;
- expropriation and nationalization;
- renegotiation or nullification of existing concessions, licenses, permits, and contracts;
- illegal mining;
- increase in fees, levies or other indirect taxes;
- changes in taxation policies;
- unilaterally imposed increases in royalty rates, such as the increase in royalty rates imposed by the Government of Ghana, effective March 2011, which changed the method of calculating the royalties from not less than 3% and not more than 6% of a mine's total mineral revenues to a flat rate of 5% of mineral revenues;
- restrictions on foreign exchange and repatriation; and
- changing political conditions, currency controls, and governmental regulations that favor or require the awarding of contracts to local contractors or require foreign contractors to employ citizens of, or purchase supplies from, a particular jurisdiction.

Illegal mining has occurred on the Company's properties, which is difficult to control, can disrupt its business and can expose the Company to liability

The Company continues to experience illegal mining activity on its mining and exploration properties. While Golden Star is proactively working with local, regional and national governmental authorities to obtain protection of the Company's property rights, any action on the part of such authorities may not occur, may not fully address the Company's problems or may be delayed.

In addition to the impact on the Company's mineral reserves and mineral resources, the presence of illegal miners can lead to project delays and disputes and delays regarding the development or operation of commercial gold deposits. Illegal miners could cause environmental damage or other damage to the Company's properties, or personal injury or death, for which the Company could potentially be held responsible. Illegal miners may work on other of the Company's properties from time to time, and they may in the future increase their presence and have increased negative impacts such as those described above on such other properties.

The Company's activities are subject to complex laws, regulations and accounting standards that can adversely affect operating and development costs, the timing of operations, the ability to operate its mines and the Company's financial results

The Company's business, mining operations and exploration and development activities are subject to extensive Canadian, United States, Ghanaian and other foreign, federal, state, provincial, territorial and local laws and regulations governing exploration, development, production, exports, taxes, labor standards, waste disposal, protection of the environment, reclamation, historic and cultural resource preservation, mine safety and occupational health, toxic substances, reporting and other matters, as well as accounting standards. Compliance with these laws, regulations and standards or the imposition of new requirements could adversely affect exploration, operating and development costs, the timing of operations and the ability to operate, as well as the Company's financial results.

Failure to maintain effective internal controls could have a material adverse effect on the Company's business and share price

Annually, Golden Star is required to test its internal controls over financial reporting to satisfy the requirements of applicable securities laws, which requires annual management assessments of the effectiveness of the Company's internal controls over financial reporting. Failure to maintain effective internal controls could have a material adverse effect on the business and share price of Golden Star.

MARKET RISKS

The market price of the Company's common shares has experienced volatility and could continue to do so in the future.

The Company's common shares are listed on the NYSE MKT, the TSX and the GSE. Companies with market capitalizations similar to Golden Star have experienced substantial volatility in the past, often based on factors unrelated to the financial performance or prospects of the companies involved. These factors include macroeconomic developments in North America and globally and market perceptions of the attractiveness of particular industries. The Company's share price is also likely to be significantly affected by short-term changes in gold prices or in its financial condition or results of operations as reflected in its quarterly earnings reports. Other factors unrelated to the Company's performance that could have an effect on the price of its common shares include the following:

- the extent of analytical coverage available to investors concerning the Company's business could be limited if investment banks with research capabilities do not continue to follow the Company's securities;
- the trading volume and general market interest in the Company's securities could affect an investor's ability to trade significant numbers of the Company's common shares;
- the size of the public float in the Company's common shares may limit the ability of some institutions to invest in the Company's securities; and
- a substantial decline in the Company's share price that persists for a significant period of time could cause the Company's securities to be delisted from NYSE MKT, the TSX and/or the GSE, further reducing market liquidity.

As a result of any of these or other additional factors, the market price of the Company's common shares at any given point in time might not accurately reflect its long-term value. Stock markets in general have recently experienced higher levels of volatility. Additionally, any negative change in the public's perception of the Company's prospects could cause the price of the Company's common shares to decrease dramatically. Furthermore, any negative change in the public's perception of the prospects of mining companies in general could depress the price of the Company's securities common shares regardless of the Company's results.

Investors could have difficulty or be unable to enforce certain civil liabilities on the Company

A majority of the Company's assets are located outside of Canada and the United States. Accordingly, it may not be possible for investors to collect judgments obtained in Canadian courts predicated on the civil liability provisions of Canadian securities legislation or other laws, or to realize upon the Company's assets in connection with such judgments. Similarly, it may not be possible for investors to collect judgments obtained in U.S. courts predicated on the civil liability provisions of U.S. securities legislation or to realize upon the Company's assets in connection with such judgments.

The Company has subsidiaries located in Ghana and the Cayman Islands, among other places, and carries on the majority of its operations in Ghana. It may be difficult for an investor to assert Canadian securities law or other law claims in original actions instituted in Ghana or the Cayman Islands. Courts in these jurisdictions may refuse to hear a claim based on a violation of Canadian securities law or other laws on the grounds that such jurisdiction is not the most appropriate forum to bring such a claim. Even if a foreign court agrees to hear a claim, it may determine that the local law, and not Canadian law, is applicable to the claim. If Canadian law is found to be applicable, the content of applicable Canadian law must be proven as a fact, which can be a time-consuming and costly process. Certain matters of procedure will also be governed by foreign law.

Canadian investors should be aware that Messrs. Tony Jensen, Craig J. Nelsen, Daniel Owiredo, William Yeates, and Gil Clausen, each a director of the Company, are located outside of Canada and, as a result, it may not be possible for Canadian investors to effect service of process within Canada upon these persons. All or a substantial portion of the assets of these persons are likely to be located outside of Canada and, as a result, it may not be possible to satisfy a judgment against such persons in Canada or to enforce a judgment obtained in Canadian courts against such persons outside of Canada.

There are certain U.S. federal income tax risks associated with ownership of Golden Star common shares.

To ensure compliance with requirements imposed by the Internal Revenue Service, any U.S. federal tax advice contained in this communication (including any attachments) is not intended or written to be used, and cannot be used, for the purpose of avoiding penalties under the Internal Revenue Code. This communication is used to promote the marketing of the securities described herein, and each potential investor should seek advice based on the investor's particular circumstances from an independent tax advisor.

Holders of the Company's common shares who are U.S. taxpayers should consider that Golden Star may or could become a "passive foreign investment company" ("PFIC") for U.S. federal income tax purposes. The tests for determining PFIC status depend upon a number of factors, some of which are beyond the Company's control, and can be subject to uncertainties, and the Company cannot assure you that it will not be a PFIC for the year ending December 31, 2016, or any future year. The Company undertakes no obligation to advise holders of its common shares as to its PFIC status for the year ending December 31, 2016, or any future year.

If the Company is a PFIC for any year, any person who holds the Company's common shares who is a U.S. person for U.S. income tax purposes (a "U.S. Holder") and whose holding period for those common shares includes any portion of a year in which the Company is a PFIC generally would be subject to a special adverse tax regime in respect of "excess distributions." Excess distributions include certain distributions received with respect to PFIC shares in a taxable year. Gain recognized by a U.S. Holder on a sale or other transfer of the Company's common shares (including certain transfers that would otherwise be tax free) also would be treated as excess distributions. Such excess distributions and gains would be allocated ratably to the U.S. Holder's holding period. For these purposes, the holding period of shares acquired either through an exercise of options or the conversion of convertible debentures includes the holder's holding period in the option or convertible debt.

The portion of any excess distribution (including gains treated as excess distributions) allocated to the current year or to a year prior to the first year in which the Company was a PFIC would be includible as ordinary income in the current year. The portion of any excess distribution allocated to the first year in the U.S. Holder's holding period in which the Company was a PFIC and any subsequent year or years (excluding the current year) would be taxed at the highest marginal rate applicable to ordinary income for each such year (regardless of the taxpayer's actual marginal rate for that year and without reduction by any losses or loss carryforwards) and would be subject to interest charges to reflect the value of the U.S. income tax deferral.

Elections may be available to mitigate the adverse tax rules that apply to PFICs (the so-called “QEF” and “mark-to-market” elections), but these elections may cause the recognition of taxable income or gain. The QEF and mark-to-market elections are not available to U.S. Holders with respect to options or convertible securities. The Company has not decided whether it would provide to U.S. holders of its common shares the annual information that would be necessary to make the QEF election.

Additional special adverse rules also apply to U.S. Holders who own the Company’s common shares if the Company is a PFIC and have a non-U.S. subsidiary that is also a PFIC. Special adverse rules that impact certain estate planning goals could apply to the Company’s common shares if the Company is a PFIC.

The conversion feature of the Company’s 5% Convertible Debentures and 7% Convertible Debentures could limit increases in the trading price of the Company’s common shares

The conversion price of the Company’s outstanding 5% Convertible Debentures is \$1.65 per share, and the conversion price of the 7% Convertible Debentures is \$0.90 per share. During periods when the Company’s share price is greater than these respective conversion prices, such conversion prices may limit the increase in the price of the common shares, since any increase in the price of the common shares above the respective conversion prices will make it more likely that the 5% Convertible Debentures or the 7% Convertible Debentures, as applicable, will be converted, thereby exerting a downward pressure on the market price of the common shares.

The existence of outstanding rights to purchase or acquire common shares could impair the Company’s ability to raise capital

As of March 24, 2017, there were options outstanding to purchase up to 16,482,212 common shares at exercise prices ranging from Cdn.\$0.30 to Cdn.\$4.60 per share. In addition, 10,377,586 common shares are available for future issuance under the Company’s equity based compensation plans. Furthermore, approximately 8,249,091 common shares are currently issuable upon the full conversion of the Company’s outstanding 5% Convertible Debentures and 57,220,000 common shares are currently issuable upon the full conversion of the Company’s outstanding 7% Convertible Debentures (additional shares may be issuable to debenture holders in certain circumstances). Finally, as part of the consideration for the Term Loan, the Company issued 5,000,000 warrants to Royal Gold exercisable to purchase 5,000,000 common shares at an exercise price of \$0.27 per common share, all of which are currently outstanding. During the life of the options, 5% Convertible Debentures, 7% Convertible Debentures, warrants and other rights, the holders are given an opportunity to profit from a rise in the market price of the Company’s common shares, with a resulting dilution in the interest of the other shareholders. The Company’s ability to obtain additional financing during the period such rights are outstanding could be adversely affected, and the existence of such rights could have an adverse effect on the price of the Company’s common shares. The holders of the options, 5% Convertible Debentures, 7% Convertible Debentures, warrants and other rights can be expected to exercise or convert them at a time when the Company would, in all likelihood, be able to obtain any needed capital by a new offering of securities on terms more favorable than those provided by the outstanding rights.

Current global financial conditions may affect the Company’s ability to obtain financing and may negatively affect its asset values and results of operations

Global financial conditions during recent years have been characterized by heightened volatility and uncertainty. As a result, access to financing has been negatively impacted, which may affect the Company’s ability to obtain equity or debt financing in the future on favorable terms or at all. Additionally, these factors, as well as other related factors, may cause decreases in asset values that are deemed to be other than temporary, which may result in impairment losses. If such increased levels of volatility and market turmoil continue or worsen, the Company’s operations could be adversely impacted and the trading price of the common shares may be adversely affected.

Shareholders are subject to potential dilution from future financings

Future sales or issuances of debt or equity securities could decrease the value of any existing common shares, dilute investors’ voting power, reduce the Company’s earnings per share and make future sales of the Company’s equity securities more difficult. With any additional sale or issuance of equity securities, investors will suffer dilution of their voting power and may experience

dilution in the Company's earnings per share. Sales of common shares by shareholders might also make it more difficult for the Company to sell equity securities at a time and price that it deems appropriate.

Golden Star may sell or issue additional debt or equity securities in offerings to finance its operations, exploration, development, acquisitions or other projects. Golden Star cannot predict the size of future sales and issuances of debt or equity securities or the effect, if any, that future sales and issuances of debt or equity securities will have on the market price of the common shares.

Sales or issuances of a substantial number of equity securities, or the perception that such sales could occur, may adversely affect prevailing market prices for the common shares.

The Common Share price has experienced volatility and may be subject to fluctuation in the future based on market conditions

The market prices for the securities of mining companies, including securities of the Company, have historically been highly volatile. The market has from time to time experienced significant price and volume fluctuations that are unrelated to the operating performance of any particular company. In addition, because of the nature of the Company's business, certain factors such as its announcements and the public's reaction, its operating performance and the performance of competitors and other similar companies, fluctuations in the market prices of the Company's resources, government regulations, changes in earnings estimates or recommendations by research analysts who track the Company's securities or securities of other companies in the resource sector, general market conditions, announcements relating to litigation, the arrival or departure of key personnel and the factors listed under the heading "Cautionary Statement Regarding Forward-Looking Statements" can have an adverse impact on the market price of the common shares.

Any negative change in the public's perception of Golden Star's prospects could cause the price of the Company's securities, including the price of the common shares, to decrease dramatically. Furthermore, any negative change in the public's perception of the prospects of mining companies in general could depress the price of the Company's securities, including the price of the common shares, regardless of the Company's results. Following declines in the market price of a company's securities, securities class-action litigation could be instituted. Litigation of this type, if instituted, could result in substantial costs and a diversion of the Company's management's attention and resources.

The Company does not intend to pay dividends in the foreseeable future

Golden Star has never declared or paid any dividends on the common shares. The Company intends, for the foreseeable future, to retain its future earnings, if any, to finance its development and exploration activities. The payment of future dividends, if any, will be reviewed periodically by the Board and will depend upon, among other things, conditions then existing including earnings, financial condition, cash on hand, financial requirements to fund the Company's exploration activities, development and growth, and other factors that the Board may consider appropriate in the circumstances.

The Company's ability to generate the cash needed to pay interest and other amounts due on the 5% Convertible Debentures and the 7% Convertible Debentures and service any other debt depends on many factors, some of which are beyond the Company's control.

In order to fund the Company's debt service obligations and to pay amounts due on the 5% Convertible Debentures and the 7% Convertible Debentures, it will require significant amounts of cash. Golden Star's ability to generate cash from its operations to meet scheduled payments, to satisfy other amounts due on the 5% Convertible Debentures and the 7% Convertible Debentures or to refinance its debt will depend on the Company's financial and operating performance, which, in turn, is subject to the risk factors described in this Annual Information Form. Some of these risks are beyond the Company's control. If the Company's cash flow and capital resources are insufficient to fund its debt obligations, the Company may be forced to reduce or delay expenditures, sell assets, seek to obtain additional equity capital or restructure its debt.

The ability of the Company's subsidiaries to pay dividends to it could be restricted

Substantially all of Golden Star's assets consist of equity in its subsidiaries. Future borrowings by the Company's subsidiaries could contain restrictions or prohibitions on the payment of dividends to the Company. In addition, under applicable law, the Company's subsidiaries could be limited in the amounts that they are permitted to pay the Company as dividends on their capital stock. As a result, Golden Star may not be able to receive funds from its subsidiaries to service the Company's debt.

Provisions in the indenture for the 7% Convertible Debentures could discourage an acquisition of the Company by a third party, even if the acquisition would be favorable to shareholders

If a "fundamental change" (as defined in the indenture for the 7% Convertible Debentures) occurs, the Company will be required to offer to purchase all of the outstanding 7% Convertible Debentures. In the event of a "make-whole fundamental change," the Company may also be required to increase the conversion rate applicable to the 7% Convertible Debentures surrendered for conversion in connection with such make-whole fundamental change. In addition, the indenture for the 7% Convertible Debentures prohibits Golden Star from engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes the Company's obligations under the 7% Convertible Debentures. These provisions could prevent or deter a third party from acquiring Golden Star even where the acquisition could be beneficial to shareholders.

DIVIDEND POLICY AND PAYMENT

We have not declared or paid cash dividends on the Company's common shares since its inception and the Company expects for the foreseeable future to retain all of its earnings from operations for use in expanding and developing its business. Future dividend decisions will consider then current business results, cash requirements and the Company's financial condition.

LEGAL PROCEEDINGS AND REGULATORY ACTIONS

There are currently no material pending legal proceedings or regulatory actions to which the Company or any of its subsidiaries is a party or to which any of its properties or those of any of its subsidiaries is subject. The Company and its subsidiaries are, however, engaged in routine litigation incidental to their business. No material legal proceedings or regulatory actions involving the Company are pending, or, to the knowledge of the Company, contemplated, by any governmental authority. The Company is not aware of any material events of non-compliance with environmental laws and regulations. The exact nature of environmental control problems, if any, which the Company may encounter in the future cannot be predicted, primarily because of the changing character of environmental requirements that may be enacted within foreign jurisdictions.

CAPITAL STRUCTURE

The Company is authorized to issue an unlimited number of common shares. As at December 31, 2016, there were 335,356,450 common shares issued and outstanding. As of March 24, 2017, 376,165,952 common shares were issued and outstanding.

The Company is also authorized to issue an unlimited number of first preferred shares. As at December 31, 2016, there were no first preferred shares issued and outstanding. As of March 24, 2017, there were no first preferred shares issued and outstanding.

Description of common shares

All common shares are of the same class and, once issued, rank equally as to dividends, voting powers, and participation in assets.

Dividend Rights

Holders of common shares are entitled to receive such dividends as may be declared from time to time by the Board of Golden Star, in its discretion, subject to the preferential dividend rights of any other classes or series of shares of the Company. In no event may a dividend be declared or paid on the common shares if payment of the dividend would cause the realizable value of Golden

Star's assets to be less than the aggregate of its liabilities and the amount required to redeem all of the shares having redemption or retraction rights, which are then outstanding.

Voting Rights

Holders of common shares are entitled to one vote for each share held of record on all matters to be acted upon by the shareholders.

Liquidation

In the event of any liquidation, dissolution or winding up of Golden Star, holders of common shares have the right to a ratable portion of the assets remaining after payment of liabilities and liquidation preferences of any preferred shares or other securities that may then be outstanding.

Redemption

No shares have been issued subject to call or assessment. There are no pre-emptive or conversion rights and no provisions for redemption or purchase for cancellation, surrender, or sinking or purchase funds.

Other Provisions

All outstanding common shares are fully paid and non-assessable.

This section is a summary and may not describe every aspect of the Company's common shares or preferred shares that may be important to you. We urge you to read the *Canada Business Corporations Act* and the Company's articles of arrangement, because they, and not this description, define the rights of a holder of Golden Star's common shares or preferred shares.

Description of Preferred Shares

We are authorized to issue an unlimited number of preferred shares. Preferred shares are issuable in such classes or series as are determined by the Board, who have the authority to determine the relative rights and preferences of each such class or series. The Board has not designated any class or series of preferred shares.

Description of 5% Convertible Debentures

The 5% Convertible Debentures were issued on May 31, 2012, in the amount of \$77.5 million, in exchange for \$74.5 million of the Company's 4.00% convertible senior unsecured debentures due November 30, 2012 ("Original Debentures") in privately negotiated transactions with certain holders of the Original Debentures exempt from the registration requirements of the U.S. Securities Act of 1933, as amended.

The 5% Convertible Debentures are governed by the terms of an indenture dated May 31, 2012, by and between the Company and The Bank of New York Mellon, as Indenture Trustee.

Interest on the 5% Convertible Debentures is payable semi-annually in arrears on May 31 and November 30 of each year until maturity on June 1, 2017. The 5% Convertible Debentures are, subject to certain limitations, convertible into common shares at a conversion rate of 606.0606 common shares per \$1,000 principal amount of the 5% Convertible Debentures (equal to an initial conversion price of \$1.65 per share). The 5% Convertible Debentures are not redeemable at the Company's option, except in the event of certain change in control transactions where 90% or more of the outstanding 5% Convertible Debentures have accepted a mandatory offer from the Company to purchase them.

On maturity, the Company may, at its option, satisfy the repayment obligation by paying the principal amount of the 5% Convertible Debentures in cash or, subject to certain limitations, by issuing that number of the Company's common shares obtained by dividing the principal amount of the 5% Convertible Debentures outstanding by 95% of the weighted average trading price of the Company's common shares on the NYSE MKT for the 20 consecutive trading days ending five trading days preceding the maturity date (the "Current Market Price"). If the Company elects to repay the principal amount of the 5% Convertible Debentures at maturity by

issuing common shares, and the Company is limited under the terms of the indenture from issuing a number of common shares sufficient to fully repay the 5% Convertible Debentures outstanding at maturity, the Company is required to pay the balance owing in cash, based on the difference between the principal amount of the 5% Convertible Debentures outstanding and the value of the common shares (based on the Current Market Price) delivered in repayment of the 5% Convertible Debentures.

The 5% Convertible Debentures are direct senior unsecured indebtedness of the Company, ranking equally and ratably with all other senior unsecured indebtedness, and senior to all subordinated indebtedness of the Company. None of the Company's subsidiaries has guaranteed the 5% Convertible Debentures, and the 5% Convertible Debentures do not limit the amount of debt that the Company or its subsidiaries may incur.

Description of 7% Convertible Debentures

The 7% Convertible Debentures were issued on August 3, 2016, in the aggregate principal amount of \$65.0 million. The 7% Convertible Debentures were issued in denominations of integral multiples of \$1,000 principal amount. As part of the private placement offering, the Company exchanged \$42.0 million principal amount of its 5% Convertible Debentures due June 1, 2017 in privately negotiated transactions with certain holders of the 5% Convertible Debentures.

The 7% Convertible Debentures are governed by the terms of an indenture dated August 3, 2016, by and between the Company and The Bank of New York Mellon, as Indenture Trustee.

Interest on the 7% Convertible Debentures is payable semi-annually in arrears on February 1 and August 1 of each year until maturity on August 15, 2021. The 7% Convertible Debentures are, subject to certain limitations, convertible into common shares at a conversion rate of 1,111.1111 common shares per \$1,000 principal amount of the 7% Convertible Debentures (equal to an initial conversion price of \$0.90 per share).

If the 7% Convertible Debentures are converted by the holder before August 1, 2019, Golden Star will, in addition to the other consideration payable or deliverable in connection with such conversion, make a conversion make-whole payment in cash, common shares or a combination thereof, at the Company's election, to the converting holder equal to the sum of the present value of the scheduled payments of interest that would have been made on the 7% Convertible Debentures from the conversion date to August 1, 2019, subject to certain limitations.

All or a portion of the 7% Convertible Debentures are redeemable at the Company's option, on or after August 15, 2019, if the daily volume weighted average price of the common shares for 20 or more trading days in a period of 30 consecutive trading days (ending on the trading day prior to the date the Company exercises its option to redeem) exceeds 130% of the initial conversion price. The redemption price includes a redemption make-whole payment in cash, common shares or a combination thereof, at the Company's election, to the converting holder equal to the sum of the present value of the scheduled payments of interest that would have been made on the 7% Convertible Debentures from the conversion date to August 15, 2021, subject to certain limitations.

If a "fundamental change" (as defined in the indenture for the 7% Convertible Debentures) occurs, the Company will be required to offer to purchase all of the outstanding 7% Convertible Debentures for cash for 100% of the principal amount. In the event of a "make-whole fundamental change," the Company may also be required to increase the conversion rate applicable to the 7% Convertible Debentures surrendered for conversion in connection with such make-whole fundamental change. In addition, the indenture for the 7% Convertible Debentures prohibits Golden Star from engaging in certain mergers or acquisitions unless, among other things, the surviving entity assumes the Company's obligations under the 7% Convertible Debentures.

Description of Warrants

On July 29, 2015, the Company, as part of the consideration for the Term Loan, issued to Royal Gold 5,000,000 warrants exercisable to purchase 5,000,000 common shares of Golden Star at \$0.27 per share for a period of four years from the date of the issuance of the warrants.

MARKET FOR GOLDEN STAR SECURITIES

The Company's common shares trade on the TSX under the trading symbol GSC, on the NYSE MKT under the symbol GSS and on the Ghana Stock Exchange under the symbol GSR. As of March 24, 2017, 376,165,952 common shares were outstanding. On March 24, 2017, the closing price per share for the Company's common shares as reported by the TSX was Cdn\$1.13 and as reported by the NYSE MKT exchange was \$0.84.

The following table sets forth the high, low and market closing prices per common share on a monthly basis as reported by the TSX and the NYSE MKT during the year ending December 31, 2016.

TSX: GSC	Cdn\$ High	Cdn\$ Low	Cdn\$ Close	Volume
January	0.275	0.215	0.27	1,142,419
February	0.66	0.27	0.66	3,065,730
March	0.70	0.56	0.59	4,454,800
April	0.99	0.58	0.87	5,116,655
May	0.89	0.67	0.69	4,788,760
June	0.84	0.70	0.83	3,022,471
July	1.42	0.88	1.03	10,980,429
August	1.03	0.91	0.91	10,804,531
September	1.10	0.93	1.10	7,229,374
October	1.22	0.97	1.22	3,951,374
November	1.25	0.93	1.13	5,976,517
December	1.12	0.90	0.99	12,821,155

NYSE MKT: GSS	US\$ High	US\$ Low	US\$ Close	Volume
January	0.195	0.150	0.18	13,183,813
February	0.485	0.186	0.49	57,962,856
March	0.525	0.418	0.46	60,888,376
April	0.775	0.45	0.69	66,771,357
May	0.707	0.51	0.52	49,118,748
June	0.649	0.53	0.65	38,846,638
July	1.08	0.695	0.78	121,065,068
August	0.780	0.700	0.70	71,879,678
September	0.843	0.71	0.84	39,716,869
October	0.906	0.733	0.91	38,595,151
November	0.942	0.696	0.89	61,001,916
December	0.860	0.663	0.75	107,989,469

DIRECTORS AND OFFICERS

As of March 24, 2017, executive officers and directors of the Company beneficially owned, or controlled or directed, directly or indirectly, 11,498,604 common shares of the Company, representing approximately 3.06% of the issued and outstanding common shares of the Company.

DIRECTORS

The Company's board of directors and senior management team have considerable experience conducting business in Ghana and elsewhere in Africa and certain members of the Company's senior management team reside in Ghana.

Set forth below is information regarding the directors of Golden Star as of the date of this annual information form.

Name and place of residence	Director since
TIM BAKER, Ontario, Canada ^{2,3}	January 1, 2013
SAMUEL T. COETZER, Ontario, Canada	December 13, 2012
GILMOUR CLAUSEN, Colorado, USA ^{2,4}	July 18, 2016
ANU DHIR, Ontario, Canada ^{1,3,4}	February 21, 2014
ROBERT E. DOYLE, Ontario, Canada ^{1,2,3}	February 2, 2012
TONY JENSEN, Colorado, USA	June 13, 2012
DANIEL OWIREDU, Greater Accra Region, Ghana	November 4, 2014
CRAIG J. NELSEN, Colorado, USA ^{1,4}	May 11, 2011
WILLIAM L. YEATES, Colorado, USA	October 4, 2011

Notes:

1. Member of the Compensation Committee
2. Member of the Audit Committee
3. Member of the Nominating and Corporate Governance Committee
4. Member of the Corporate Responsibility Committee

The terms of office of each director of the Company will expire at the next annual meeting of shareholders of the Company or when their successors are duly elected or appointed.

Below is a biography of each of the directors of Golden Star:

Tim Baker

Mr. Baker was appointed Executive Chairman of the Company effective January 1, 2013. Mr. Baker's title was amended to non-Executive Chairman on November 1, 2013. Mr. Baker has recently served as the Chief Operating Officer and Executive Vice President of Kinross Gold Corporation from June 2006 to November 2010. Mr. Baker, who earned his BSc in Geology from Edinburgh University in 1974, has substantial experience in operating mines and projects, including projects in Chile, the United States, Africa and the Dominican Republic. Prior to working with Kinross Gold Corporation, Mr. Baker served as an Executive General Manager of Placer Dome Chile, where he was responsible for the Placer Dome operations, including at the Zaldivar mine and Kinross-Placer joint venture at La Coipa as well as the Pueblo Viejo project in the Dominican Republic. Mr. Baker was an independent director of Eldorado Gold Corporation between May 2011 and December 2012, of Pacific Rim Mining Corp. from March 2012 until November 27, 2013, of Augusta Resources Corporation from September 2008 to September 2014, of Underworld Resources Inc. from May 2010 to January 2011, and of Aurelian Resources Inc. from September 2007 to October 2010. Mr. Baker has also been a Director of Antofagasta plc since March 2011, Sherritt International since May 2014, and Rye Patch Gold Corp. since December 14, 2016. Mr. Baker's extensive and ongoing experience as a director of a wide spectrum of companies, and as an executive of various mining companies, makes him a vital part of the Board of Directors.

Samuel T. Coetzer

Mr. Coetzer was appointed President and Chief Executive Officer of the Company, effective January 1, 2013 and a director of the Company in December 2012. Prior to this appointment, he served the Company as Executive Vice President and Chief Operating Officer from March 2011 to December 2012. Mr. Coetzer has over 25 years of international mining experience, having held increasing levels of responsibility in various mining companies including Kinross Gold Corporation, Xstrata Nickel, Xstrata Coal South Africa, and Placer Dome Inc. Mr. Coetzer consulted to Kinross from February 2009 and was appointed in May 2009 as Senior Vice President, South American Operations for Kinross, serving in this role until September 2010. In this role, Mr. Coetzer was responsible for overseeing the Kinross assets in Brazil, Chile and Ecuador. From June 2007 to October 2008, Mr. Coetzer was the Chief Operating Officer of Xstrata Nickel, and from March 2006 to June 2007, he was the Chief Operating Officer of Xstrata Coal South Africa. Mr. Coetzer also has significant experience in Africa, having been with Placer Dome Inc.'s South African and Tanzanian operations, where he was Managing Director - South Africa and the Executive General Manager – Tanzania, from 2003 to February 2006. Mr. Coetzer's experience and expertise in managing mining operations of various mining companies

positions him well to serve as the Chief Executive Officer and member of the Board. As Chief Executive Officer and formerly Chief Operating Officer of the Company, Mr. Coetzer has demonstrated strong leadership skills and extensive knowledge of operational issues facing the Company.

Gilmour Clausen

Mr. Clausen is President, CEO and Director of Brio Gold Inc. (“**Brio Gold**”) and has been with Brio Gold since its inception in December 2014. Mr. Clausen is a mining executive with more than 30 years’ experience in the areas of management, finance, development and operations in the precious and base metals industry. Mr. Clausen has led major mining operations and managed large engineering and construction projects. Mr. Clausen was the President, Chief Executive Officer, and a director of Augusta Resource Corporation from March 28, 2005 until it was acquired by HudBay Minerals Inc. in July, 2014. Mr. Clausen was the Executive Vice President, Mining, at Washington Group International, Inc. from 2001 to 2005, and served as the Vice President of Operations at Stillwater Mining Company from 1995 to 1999. Mr. Clausen is a Professional Engineer with a Bachelor degree and Master’s degree in Mining Engineering from Queen’s University. Mr. Clausen is also a graduate of Queen’s University’s executive business program. Mr. Clausen is currently a director of Plata Latina Minerals Corporation.

Mr. Clausen brings to the Board management, finance and operations experience in the metals industry, board governance, corporate and project finance, strategic planning, and experience in investor and public relations.

Anu Dhir

Anu Dhir is a Co-Founder and Executive of ZinQ Mining (“ZinQ”), a private base metals and precious metals royalty company that focuses on the Latin America region. The capabilities of ZinQ include technical, project development teams and additional major financing access through debt and equity markets. Ms. Dhir is also the Managing Director of Miniqs Limited (“Miniqs”), a private group primarily interested in developing resource projects. Prior to ZinQ and Miniqs, Ms. Dhir was Vice President, Corporate Development and Company Secretary at Katanga Mining Limited, a publicly listed African focused mining company. Her portfolio of responsibilities at Katanga covered corporate development, legal advisory, investor relations, governance, and communications.

Ms. Dhir has a unique combination of business, operations and legal experience in the mining, oil and gas and technology sectors on several continents and a history of successfully developing and negotiating business development deals including joint ventures, mergers and acquisitions, and key partnerships. Ms. Dhir has also helped finance and lead private companies to the public markets and has helped companies heighten their profile and increase overall shareholder value.

Ms. Dhir was the Lead Non-Executive Director of Frontier Rare Earths from July 2008 until January 2016 and served as its Chair of the Audit Committee. She was a Non-Executive Director of Energulf Resources from August 2013 until September 2015. Ms. Dhir was the Lead Non-Executive Director of Atlatsa Resources Corporation from July 2008 until December 2014 and served as the Chair of the Remuneration Committee, Chair of the Investment Committee, Member Audit & Risk Committee, and Member of the Health, Safety and Sustainability Committee. She was a Non-Executive Director of Great Basin Gold Limited until 2013, and served as its Chair of the Corporate Governance Committee and Member of its Remuneration Committee and Audit & Risk Committee. Ms. Dhir also served as a Non-Executive Director of Kazakh Compass Asset Fund Ltd. until December 2012.

Ms. Dhir is currently a Non-Executive Director of Trillium Health Partners.

Ms. Dhir holds a BA from the University of Toronto and a law degree (Juris Doctor) from Quinnipiac University, Connecticut, United States.

Robert E. Doyle

Mr. Doyle was Chief Executive Officer of Medoro Resources Ltd. from January 2008 to October 2009 (pursuant to a merger in June 2011, Medoro is now known as Gran Colombia Gold Corp.), a Canadian gold exploration and development company with activities in Africa and South America. Mr. Doyle was with Pacific Stratus Energy as Executive Vice President from 2005 through

2006, Chief Financial Officer from October 2006 to May 2007 and Vice President from March 2006 to May 2007. He also was Chief Financial Officer of Coalcorp Mining Inc. from November 2005 to May 2007 and Chief Financial Officer of Bolivar Gold Corp. from January 2003 to February 2006. Mr. Doyle served as a director of Gran Columbia Gold Corp. from April 2008 to July 2013. Mr. Doyle is also a member of the board of directors and chairman of the audit committees of Mandalay Resources Corp., a director and member of the audit, governance and technical committees of Detour Gold Corporation. Mr. Doyle, a chartered accountant and a chartered director, has over 30 years' experience in all facets of international resource exploration, development and production. Mr. Doyle brings a broad skill set to the Board, including a thorough understanding of operations, accounting and financial strategy of international mining companies.

Tony Jensen

Mr. Jensen has served as President and Chief Executive Officer of Royal Gold Inc., a mining royalty and streaming company, since 2006. Previously, Mr. Jensen had served as the President and Chief Operating Officer of Royal Gold Inc. from 2003 to 2006. Mr. Jensen was elected to the board of directors of Royal Gold Inc. in 2004. Prior to joining Royal Gold Inc., Mr. Jensen held various positions with Placer Dome Inc., including engineering and management positions at the Golden Sunlight Mine in Montana, Assistant Mine General Manager of Operations at the La Coipa mine in Chile, Director, Finance and Strategic Growth for Placer Dome Latin America, and Mine General Manager of the Cortez Joint Venture. Mr. Jensen is a mining engineering graduate of the South Dakota School of Mines and Technology and holds a Certificate of Finance from Golden Gate University in San Francisco. In addition, Mr. Jensen is a member of the National Mining Association Board and Finance Committee, a member of the World Gold Council Board and Chairman of the Remuneration Committee, and a member of the University Advisory Board of the South Dakota School of Mines and Technology. Mr. Jensen brings to the Board extensive operating and financial knowledge and ongoing experience as an executive of companies involved in the global mining and mineral processing industries.

Craig J. Nelsen

Mr. Nelsen was a founder, and has served as President, Chief Executive Officer and a member of the Board of Directors, of Avanti Mining Inc. ("Avanti") from May 2007 until October 1, 2013. Mr. Nelsen served as Executive Chairman of Avanti Mining Inc. until his retirement in May 2015. From 1999 until June 2007, Mr. Nelsen served as the Executive Vice-President, Exploration, for Gold Fields Limited, one of the world's largest gold mining companies. Mr. Nelsen was the founder, and served as Chairman of the board of directors, of Metallica Resources Inc. from 1994 to 2008, and was Metallica's Chief Executive Officer from 1994 to 1999. In June 2008, a three company merger between Metallica, Peak Gold, and New Gold Inc. was finalized, forming the new, larger gold producer known as New Gold Inc., which is listed on both the Toronto Stock Exchange and NYSE MKT. From June 2008 until May 2012, Mr. Nelsen served as a member of the board of directors of New Gold Inc. Mr. Nelsen holds a M.S. degree in geology from the University of New Mexico and a B.A. degree in geology from the University of Montana. Mr. Nelsen's experience includes, among other things: his knowledge in mineral property evaluation, including resource and reserve assessment; international mining; mergers and acquisitions; exploration and mine operations; health, safety, environment and community relations; company formation and strategic planning.

Daniel Owiredu

Mr. Owiredu was appointed Executive Vice President, Operations of the Company effective January 1, 2013. He was subsequently appointed to the Board in November 2014. Mr. Owiredu has more than 30 years' experience in the mining sector in Ghana and West Africa. Mr. Owiredu previously served the Company as Senior Vice President, Ghana Operations, since May 10, 2012. Prior to that, he served as Vice President, Ghana Operations since September 2006. Prior to joining Golden Star, Mr. Owiredu served as Deputy Chief Operating Officer, Africa for AngloGold Ashanti Ltd. following the amalgamation of AngloGold Ltd. and Ashanti Goldfields Co. Ltd. Mr. Owiredu's prior experience includes successfully managing the construction and operation of the Bibiani mine as well as the operation of the Siguiri, Obuasi and Freda Rebecca mines. Mr. Owiredu has made a significant contribution to mining in Ghana as the country's former President of the Chamber of Mines and more recently in his appointment as Chairman of the board of directors of the Ghana Commercial Bank.

William L. Yeates

Mr. Yeates was one of the founding partners of Hein & Associates LLP (“Hein”). He previously served on Hein’s Executive Committee and was their National Director of Auditing and Accounting for many years. He retired from Hein in 2013. He has over 40 years of auditing experience working with public companies specializing in extractive industries. From 2005 to 2009, Mr. Yeates served on the Financial Accounting Standards Advisory Council (FASAC). He also has served on: the Professional Practice Executive Committee of the Center for Audit Quality; the Executive Committee of the Center for Public Company Audit Firms of the American Institute of CPAs (“AICPA”); the SEC Practice Section Executive Committee and the SEC Regulations Committee of the AICPA. In addition to being a Certified Public Accountant, Mr. Yeates holds an MBA in accounting and a B.S. in finance and marketing from the University of Colorado. Mr. Yeates’ extensive experience as an auditor for public companies in extractive industries and involvement in numerous senior accounting committees enables him to provide the Board with valuable insight in the areas of financial reporting and strategic planning.

OFFICERS

The following table sets forth the names of each of the executive officers of Golden Star and all offices held by each of them as of the date of this annual information form.

Name	Office Held
SAMUEL T. COETZER, Ontario, Canada	President and Chief Executive Officer
ANDRÉ VAN NIEKERK, Ontario, Canada	Executive Vice President and Chief Financial Officer
DANIEL OWIREDU, Greater Accra Region, Ghana	Executive Vice President and Chief Operating Officer
MARTIN RAFFIELD, Colorado, USA	Senior Vice President, Project Development and Technical Services
S. MITCHEL WASEL Western Region, Ghana	Vice President, Exploration
BRUCE HIGSON-SMITH, Colorado, USA	Senior Vice President, Corporate Strategy
KAREN WALSH, Wisconsin, USA	Vice President, People and Organizational Development

The following sets forth biographical information for each of the above executive officers of Golden Star who is not also a director of Golden Star:

André van Niekerk

André van Niekerk joined Golden Star in 2006. André spent close to five years in Ghana as the head of finance and business operations, after which he was transferred to the corporate office to take the role of Vice-President, Controller. In April, 2014, André was appointed to the role of Executive Vice President & Chief Financial Officer. Whilst based in Ghana, André was Vice Chairman of the Ghanaian Chamber of Mines Energy Committee and a member of the Chamber of Mines Finance Committee. Prior to joining Golden Star, André spent six years with KPMG serving clients in the mining and oil and gas industries.

Dr. Martin Raffield

Dr. Martin Raffield was appointed Senior Vice President, Project Development and Technical Services in August 2011. Prior to this, he worked from June 2007 as Principal Consultant and Practice Leader for SRK Consulting (US) Ltd. in Denver. Dr. Raffield started his career in 1992 in South Africa working in geotechnical engineering at a number of deep level gold mines for Johannesburg Consolidated Investments. In 2000, he relocated to Canada with Placer Dome and held the positions of Chief Engineer and Mine Superintendent at their Campbell Mine. Dr. Raffield moved to Breakwater Resources in 2006 and held the position of Manager of Mining until moving to SRK in 2007. Dr. Raffield has a Ph.D. in geotechnical engineering from the University of Wales and is a Professional Engineer registered in Ontario, Canada.

S. Mitchel Wasel

Mr. Wasel has served as Vice President Exploration since September 2007, prior to which he served the Company as Regional Exploration Manager for West Africa from March 2004. Mr. Wasel served as the Company’s Exploration Manager - Ghana from

2000 to March 2004. Mr. Wasel has acted in various other roles with the Company since 1993 when he commenced his service with the Company as an exploration geologist, where he worked in the Company's regional exploration program in Suriname and later with the Gross Rosebel project, ultimately as Project Manager. Prior to joining the Company, he worked with several companies in northern Canada in both exploration and mine geology.

Bruce Higson-Smith

Mr. Higson-Smith has served as Senior Vice President, Corporate Strategy since January 2013. Prior to that, he served the Company as Senior Vice President Finance and Corporate Development from January 2012 to January 2013 and Vice President, Corporate Development from September 2003 to January 2012. Mr. Higson-Smith is a qualified mining engineer with over 25 years of experience in the mining business. Following several years in underground mining operations in Africa and after earning an MBA in finance, Mr. Higson-Smith spent 10 years reviewing projects, conducting due diligence, negotiating and structuring mining transactions around the world, initially with the Castle Group, a mining investment management company, and then with Resource Capital Funds. Since joining the Company in 2003, he has been responsible for evaluating and executing M&A opportunities for the Company and also spent a year in Ghana as General Manager of Bogoso.

Karen Walsh

Ms. Walsh has served as Vice President People and Organizational Development since July 2012. Prior to joining the Company, Ms. Walsh did consulting work for six years in the mining industry from September 2007 to July 2012. Prior to that, Ms. Walsh was Vice President, Human Resources for Placer Dome Inc. from 2005 to August 2006. Ms. Walsh has over 25 years of experience in the mining industry with a broad range of human resources expertise including recruiting, succession planning, cultural change initiatives, HR process optimization, project development feasibility studies, global leadership development and performance management.

CEASE TRADE ORDERS, BANKRUPTCIES, PENALTIES OR SANCTIONS

Except as described below, to the best of Golden Star's knowledge, no director or executive officer of Golden Star or a shareholder holding a sufficient number of securities to affect materially the control of Golden Star is, or within the ten years prior to the date hereof has been, a director or executive officer of any company (including Golden Star) that, while that person was acting in that capacity: (i) was the subject of a cease trade or similar order or an order that denied the relevant company access to any exemption under securities legislation, for a period of more than 30 consecutive days; (ii) was subject to an event that resulted, after the director or executive officer ceased to be a director or executive officer, in the company being the subject of a cease trade or similar order or an order that denied the relevant company access to any exemption under securities legislation for a period of more than 30 consecutive days; or (iii) within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets.

Ms. Dhir, a director of the Company, served as a director of Great Basin Gold Ltd. ("Great Basin") in 2011, a public listed mining company. Prior to Ms. Dhir becoming a director of Great Basin, Great Basin had issued certain loans and debentures which ultimately caused its insolvency in 2012 (disclosed under Great Basin's profile at www.sedar.com). Ms. Dhir resigned in mid-2013 after Great Basin and certain affiliates had sought creditor protection in connection with these loans and debentures.

Mr. Clausen, a director of the Company, served as a director of Jaguar Mining Inc. ("Jaguar") from September 2005 to June 2013, a publicly listed mining company. On December 23, 2013, approximately 9 months after Mr. Clausen notified the board of directors of Jaguar that he would not stand for re-election at its annual shareholders' meeting in June 2013, Jaguar commenced proceedings under the *Companies' Creditors Arrangement Act* (Canada) in respect of a restructuring of its debt (the "CCAA Proceedings"). In December 2014, the Ontario Superior Court of Justice ordered that the CCAA Proceedings be terminated.

CONFLICT OF INTEREST

To the best of Golden Star's knowledge, and other than as disclosed in this Annual Information Form, in the notes to Golden Star's financial statements and in management's discussion and analysis of financial condition and results of operations ("MD&A"), there are no known existing or potential conflicts of interest between Golden Star and any director or officer of Golden Star. Certain of the directors and officers of Golden Star serve as directors and officers of other public companies and therefore it is possible that a conflict may arise between their duties as a director or officer of Golden Star and their duties as a director or officer of such other companies.

The directors and officers of Golden Star are aware of the existence of laws governing accountability of directors and officers for corporate opportunity and requiring disclosure by directors of conflicts of interest and Golden Star will rely upon such laws in respect of any directors' and officers' conflicts of interest or in respect of any breaches of duty by any of its directors or officers. All such conflicts will be disclosed by such directors or officers in accordance with the *Canada Business Corporations Act* and they will govern themselves in respect thereof to the best of their ability in accordance with the obligations imposed upon them by law.

INTERNAL CONTROLS

As a reporting issuer in the United States, the Company must comply with the controls and reporting provisions set out in the *Sarbanes-Oxley Act of 2002*. As such, the Company has established a control matrix for each mining site (and controls at each corporate level). The Company's internal controls include 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 and that are intended to 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.

AUDIT COMMITTEE

AUDIT COMMITTEE CHARTER

The written charter of the Audit Committee is disclosed as Schedule "A" to this Annual Information Form.

COMPOSITION OF THE AUDIT COMMITTEE

The Audit Committee currently has three members: Robert E. Doyle, Gilmour Clausen and Tim Baker, all of whom are independent. All members of the Audit Committee are financially literate for the purposes of National Instrument 52-110 - *Audit Committee* ("NI-52-110").

RELEVANT EDUCATION AND EXPERIENCE

See "Directors and Officers - Directors" for the biography of each Audit Committee member, including the education and experience of each Audit Committee member that is relevant to the performance of responsibilities as an Audit Committee member. Each committee member maintains an understanding of the detailed responsibilities of committee membership and the Company's business, operations and risks.

RELIANCE ON CERTAIN EXEMPTIONS

At no time since the commencement of the Company's most recently completed financial year has the Company relied on an exemption in Section 2.4 of NI 52-110 (De Minimis Non-audit Services), Section 3.2 of NI 52-110 (Initial Public Offerings), Section 3.3(2) of NI 52-110 (Controlled Companies), Section 3.4 of NI 52-110 (Events Outside Control of Member), Section 3.5

of NI 52-110 (Death, Disability or Resignation of Audit Committee Member) or Section 3.6 of NI 52-110 (Temporary Exemption for Limited and Exceptional Circumstances), or an exemption from NI 52-110, in whole or in part, granted under Part 8 of NI 52-110 (Exemptions) or on Section 3.8 of NI 52-110 (Acquisition of Financial Literacy).

AUDIT COMMITTEE OVERSIGHT

At no time since the commencement of the Company's most recently completed financial year was a recommendation of the Audit Committee to nominate or compensate an external auditor not adopted by the Board.

PRE-APPROVAL POLICIES AND PROCEDURES

The Audit Committee has established a policy requiring pre-approval of all permissible non-audit services performed by the independent auditors. Such services may be approved at a meeting or by unanimous written consent of the Audit Committee, or the Audit Committee may delegate to one or more of its members the pre-approval of audit services and permissible non-audit services provided that any pre-approval by such member or members shall be presented to the Audit Committee at each of its scheduled meetings.

EXTERNAL AUDITOR SERVICE FEES

The aggregate fees billed by the Company's external auditor in the last two fiscal years ended December 31, 2016 and 2015 are as follows:

Financial Year Ended	Audit Fees ⁽¹⁾	Audit-Related Fees ⁽²⁾	Tax-Related Fees ⁽³⁾	All Other Fees ⁽⁴⁾	Total
December 31, 2016	CAD\$988,407	CAD\$72,867	-	CAD\$21,471	CAD\$1,082,745
December 31, 2015	CAD\$910,538	CAD\$67,136	-	CAD\$10,508	CAD\$988,182

Notes:

- (1) The aggregate audit fees billed for the audit of the financial statements for the financial year indicated, including with respect to the Company's internal control over financial reporting, quarterly review of financial statements and fees related to review of prospectus and other registration statements.
- (2) Includes fees related to the services provided by the Company's external auditor that are reasonably related to the performance of the audit or review of financial statements, including services rendered with respect to the audit of the Company's subsidiaries pursuant to statutory financial statement requirements in Ghana.
- (3) Includes fees related to assistance in filing annual tax returns and tax planning and any other fees billed for professional services rendered by external auditor for tax compliance, tax advice, and tax planning.
- (4) Includes other fees, any other products and services provided by external auditor, other than services reported above. The fees for 2016 and 2015 related to services rendered with respect to enterprise risk management.

INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS

Except as described below, there are no material interests, direct or indirect, of any director, executive officer, or any shareholder who beneficially owns, directly or indirectly, more than 10% of the outstanding common shares or any known associate or affiliate of such persons, in any transaction during the three most recently completed financial years or during the current financial year which has materially affected or would materially affect the Company or a subsidiary of the Company.

In May 2015, the Company's wholly-owned subsidiary, Caystar Finance, entered into the Stream Transaction and Term Loan with RGLD, a subsidiary of Royal Gold, and Royal Gold, respectively. One of the Company's directors, Tony Jensen, serves as President and Chief Executive Officer of Royal Gold and Chairman of RGLD. Mr. Jensen did not participate in the meetings to approve, and abstained from voting on, the Stream Transaction and Term Loan during the Company's meeting of the directors to approve the transaction. See "General Development of the Business - Three Year History".

TRANSFER AGENT AND REGISTRAR

The transfer agent and registrar for Golden Star's common shares is CST Trust Company at its principal offices at 1066 West Hastings Street, Suite 1600, Vancouver, British Columbia, Canada V6E 3X1 and 320 Bay Street, Toronto, Ontario, Canada M5H 4A6, telephone 1-800-387-0825.

MATERIAL CONTRACTS

The only material contracts entered into by the Company within the financial year ended December 31, 2016 or before such time that are still in effect, other than in the ordinary course of business, are as follows:

- The 5% Convertible Debentures. See "Risk Factors - General Risks".
- The 7% Convertible Debentures. See "Risk Factors - General Risks".
- The Stream Transaction. See "General Development of the Business - Three Year History".
- The Term Loan. See "General Development of the Business - Three Year History".

INTEREST OF EXPERTS

The Company's independent auditors for fiscal 2016, PricewaterhouseCoopers LLP, Chartered Professional Accountants ("PwC"), have audited the consolidated financial statements of Golden Star for the year ended December 31, 2016. In connection with their audit, PwC has confirmed that they are independent within the meaning of the Rules of Professional Conduct of the Chartered Professional Accountants of Ontario and had complied with the SEC's rules on auditor independence.

Dr. Martin Raffield and Mr. Mitch Wasel are the QPs who supervised the preparation of the property descriptions contained herein and the Company's mineral reserve and mineral resource estimates as at December 31, 2016. Dr. Raffield and Mr. Wasel are officers of the Company and beneficially owned, directly or indirectly, less than 1% of any class of shares of the Company's outstanding shares at the time of the preparation of the mineral reserve and resource estimates and the Technical Reports.

The Company's Wassa Underground Feasibility Study and Prestea Underground Feasibility Study were prepared by the independent consulting firm, SRK under the supervision of Mike Beare, Neil Marshall, Chris Bray, Dr. John Willis, Yao Hua (Benny) Zhang, Ken Reipas, Dr. Tony Rex, Jane Joughin and Kris Czajewski (the "SRK QP's") and S. Mitchel Wasel and Dr. Martin P. Raffield, officers of the Company, each of whom is a "qualified person" for the purposes of NI 43-101. The SRK QP's, Dr. Martin P. Raffield and S. Mitchell Wasel beneficially owned, directly or indirectly, less than 1% of any class of shares of the Company's outstanding shares at the time of the preparation of Wassa Underground Feasibility Study.

ADDITIONAL INFORMATION

Additional information relating to the Company can be found on SEDAR at www.sedar.com. Additional information, including directors' and officers' remuneration and indebtedness, principal holders of the Company's securities and securities authorized for issuance under equity compensation plans is contained in the management information circular of the Company filed for its most recent annual meeting of shareholders. Additional financial information is provided in the Company's audited consolidated financial statements and the MD&A for the financial year ended December 31, 2016.

SCHEDULE “A”
AUDIT COMMITTEE CHARTER
GOLDEN STAR RESOURCES LTD.
Audit Committee Charter

There shall be a committee of the Board of Directors (the “Board”) of Golden Star Resources Ltd., a Canadian corporation (“Golden Star”), to be known as the Audit Committee (the “Committee”) whose membership, authority and responsibilities shall be as set out in this Charter.

PRIMARY FUNCTION

The primary function of the Committee is to assist the Board in fulfilling its oversight responsibilities, primarily through (a) overseeing the integrity of Golden Star’s financial statements and financial reporting process and Golden Star’s systems of internal accounting and financial controls; (b) overseeing the performance of the internal auditors; (c) recommending the selection of, retaining and monitoring the independence and performance of Golden Star’s outside auditors, including overseeing the audits of Golden Star’s financial statements, and approving any non-audit services; and (d) facilitating communication among the outside auditors, management, internal auditors and the Board.

MEMBERSHIP

Following each annual meeting of the shareholders of Golden Star, the Board shall elect no fewer than three directors (the “Members”) to the Committee and shall appoint one of the Members to chair the Committee. Each Member shall meet the independence requirements imposed by applicable law and stock exchange requirements (the “Listing Rules”).

The Committee may form and delegate authority to subcommittees when and where appropriate.

Any Member may be removed from office or replaced at any time by the Board and shall cease to be a Member upon ceasing to be a director. Each Member shall hold office until the close of the next annual meeting of shareholders of Golden Star or until the Member ceases to be a director, resigns or is removed or replaced, whichever first occurs.

A Member shall be considered independent if (a) he or she is not currently and has not been during the past three years, an employee or executive officer of Golden Star or its subsidiaries, other than as allowed by law and the Listing Rules; (b) he or she has not accepted, directly or indirectly, any consulting, advisory or other compensatory fee from Golden Star or its subsidiaries other than in connection with serving on the Committee, any other Board committee or as a Board member; (c) he or she is not an “affiliated person” of Golden Star or any Company subsidiary as defined by rules of the Securities and Exchange Commission (“SEC”), including Rule 10A-3 under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), and the Listing Rules; (d) he or she does not have a “material relationship” with Golden Star as defined by National Instrument 52-110 - *Audit Committees* (“NI 52-110”); and (e) he or she meets all other requirements for independence imposed by law and the Listing Rules from time to time and any requirements imposed by any applicable body having jurisdiction over Golden Star.

No Member shall have participated in the preparation of the financial statements of Golden Star or its subsidiaries at any time during the past three years.

All Members shall from and after the time of their respective appointments to the Committee have a practical knowledge of finance and accounting and be able to read and understand financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity that can reasonably be expected to be raised by Golden Star’s financial statements. In addition, Members may be required to participate in continuing education if required by applicable law or the Listing Rules.

At least one of the Members shall be a “financial expert” as defined in the applicable SEC and NYSE MKT rules and regulations, and at least one of the Members shall meet the financial sophistication standards under the Listing Rules.

MEETINGS

The Committee shall meet as frequently as is necessary to carry out its responsibilities, but at least quarterly, at such times and location determined by the Committee chairman. The Committee is governed by the rules regarding meetings (including meetings by conference telephone or similar communications equipment), action without meetings, notice, waiver of notice, and quorum and voting requirements as are applicable to the Board.

The Committee is authorized and empowered to adopt its own rules of procedure not inconsistent with (a) any provision of this Charter, (b) any provision of the constating documents or bylaws of Golden Star, or (c) applicable law and Listing Rules.

In the absence of the Committee chairman for any meeting, the Members shall elect a chairman from those in attendance to act as chairman of that meeting.

REPORTING

Following meetings of the Committee, the Committee chairman shall report to the Board issues before the Committee and actions taken by the Committee.

RESPONSIBILITIES, DUTIES AND POWERS

1. The Committee's principal responsibility is one of oversight. Golden Star's management is responsible for preparing Golden Star's financial statements, and Golden Star's outside auditors are responsible for auditing and reviewing those financial statements. In carrying out these oversight responsibilities, the Committee is not providing any expert or special assurance as to Golden Star's financial statements or any professional certification as to the outside auditors' work.
2. The designation or identification of a Member as a "financial expert" or "financially literate" does not impose on such person any duties, obligations, or liability that are greater than the duties, obligations, and liability imposed on such person as a Member of the Committee and Board in the absence of such designation or identification; and the designation or identification of a Member as a "financial expert" or "financially literate" does not affect the duties, obligations, or liability of any other Member or Board member.
3. The Committee's specific responsibilities and powers are as set forth below.

General Duties And Responsibilities

- Periodically review with management and the outside auditors the applicable law and the Listing Rules relating to the qualifications, activities, responsibilities and duties of audit committees and compliance therewith, and also take, or recommend that the Board take, appropriate action to comply with such law and rules.
- Review, at least annually, the Committee's duties, responsibilities and performance and determine if any changes in practices of the Committee or amendments to this Charter are necessary.
- Meet separately at least annually with each of Golden Star's senior management, including its Chief Financial Officer, Director of Internal Audit, Controller and outside auditors in separate executive sessions to discuss any matters that the Committee or each of these persons believes should be discussed privately.
- Establish procedures for: (a) the receipt, retention and treatment of complaints received by Golden Star regarding accounting, internal accounting controls or auditing matters; and (b) the confidential, anonymous submission by employees of Golden Star of concerns regarding questionable business conduct, accounting or auditing matters.
- Retain, at Golden Star's expense, independent counsel, accountants or other advisors for such purposes as the Committee, in its sole discretion, determines to be appropriate to carry out its responsibilities.
- Determine the necessary funding for the payment of: (a) compensation to outside auditors engaged for the purpose of preparing or issuing an audit report or performing other audit, review or attest services for Golden Star; (b) compensation to any advisors employed by the Committee and (c) ordinary administrative expenses of the Committee that are necessary or appropriate in carrying out its duties.
- Review and approve Golden Star's hiring policies regarding partners, employees, former partners and former employees of the present and former external auditor of Golden Star.

- Prepare or approve annual reports of the Committee for inclusion in the management information circular for Golden Star's annual meetings.
- Investigate any matter brought to its attention related to reports of improper business conduct, financial, accounting and audit matters and have full access to all books, records, facilities and personnel of Golden Star.
- Undertake such additional responsibilities as from time to time may be delegated to it by the Board, required by Golden Star's articles or bylaws or required by law or Listing Rules.

Auditor Independence

- Be directly responsible for the recommendation of, appointment of, compensation, retention, termination and oversight, subject to the requirements of applicable law, of the work of any outside auditor engaged by Golden Star for the purpose of preparing or issuing an audit report or performing other audit, review or attest services. The outside auditors shall report directly to the Committee.
- Receive from the outside auditors, review and discuss not less frequently than annually, a formal written statement delineating all relationships between the outside auditors and Golden Star which may impact the objectivity and independence of the outside auditors, and other applicable standards. The statement shall include a description of all services provided by the outside auditors and the related fees. The Committee shall actively discuss any disclosed relationships or services that may impact the objectivity and independence of the outside auditors and take appropriate action to satisfy itself of the independence of the auditors.
- Pre-approve all engagement letters and fees for all auditing services (including providing comfort letters in connection with securities offerings) and permitted non-audit services performed by the outside auditors, subject to any *de minimis* exception under Section 10A(i)(1)(B) of the Exchange Act and Section 2.4 under NI 52-110 and any rules promulgated thereunder. Pre-approval authority may be delegated to one or more independent Members, and any such Member shall report any decisions to the full Committee at its next scheduled meeting. The Committee shall not approve an engagement of outside auditors to render non-audit services that are prohibited by law or the Listing Rules.
- Obtain annual assurance from the outside auditors that they (a) have complied with Section 10A (Audit Requirements), of the Exchange Act and the rules promulgated thereunder, and (b) they know of no violation of Rule 13b2-2 (Representations and Conduct in Connection with the Preparation of Required Reports and Documents) of the Exchange Act having occurred.
- Review with the outside auditors, at least annually, the auditors' internal quality control procedures and any material issues raised by the most recent internal quality peer review of the outside auditors.

Internal Control and Compliance with Corporate Business Conduct Or Ethics Policies

- Review annually the adequacy and quality of Golden Star's financial and accounting staff, the need for and scope of internal audit reviews, and the plan, budget and the designations of responsibilities for any internal audit.
- Review the performance and material findings of internal audit reviews.
- Review annually, evaluate and discuss with the outside auditors, management and internal audit, management's report on internal controls over financial reporting and the related auditor's report, when and as required by Section 404 of the Sarbanes-Oxley Act and National Instrument 52-109 - *Certification of Disclosure in Issuers' Annual and Interim Filings*. Discuss any significant deficiencies in the design or operation of the Golden Star's internal controls, material weaknesses in internal controls, any fraud (regardless of materiality), as well as any significant changes in internal controls implemented by management during the most recent reporting period. Determine whether any internal control recommendations made by outside auditors have been implemented by management.
- Review major financial risk exposures and the guidelines, policies and insurance that management has put in place to govern the process of assessing, controlling, managing and reporting such exposures. Receive reports from officers responsible for oversight of any particular financial risks within Golden Star upon change of any relevant policy, practice or circumstance within their department.

- Review and evaluate at least annually Golden Star’s policies and procedures for maintaining and investing cash funds and for hedging (metals, foreign currency, etc.) as detailed in the corporate treasury policy. Approve any variations from the corporate treasury policy that may be required from time to time.
- Evaluate whether management is setting the appropriate tone at the top by communicating the importance of: internal controls; ethics and conduct codes; and ensuring that all supervisory and accounting employees understand their roles and responsibilities with respect to internal controls.
- Review with outside auditors and legal counsel, as the Committee deems appropriate, actions taken to ensure compliance with the code of ethics or conduct for Golden Star established by the Board.

Annual And Interim Financial Statements

- Review, evaluate and discuss with Golden Star’s management and outside auditors (a) the nature and extent of any significant changes in Canadian accounting principles including under international financial reporting standards (“IFRS”), (b) the application of accounting principles and significant accounting and reporting principles, (c) practices and procedures applied in preparing the financial statements, (d) all critical accounting policies and practices to be used, (e) any major changes to Golden Star’s accounting or reporting principles, practices or procedures, including those required or proposed by professional or regulatory pronouncements and actions, as brought to its attention by management or the outside auditors, (f) information related to significant unusual transactions, including the business rationale for such transactions, and (g) any material written communications between the outside auditors and management, such as any management letter or schedule of unadjusted differences.
- Review and discuss with outside auditors alternative treatments of financial information under generally accepted accounting principles including IFRS, including pro forma financial information, the ramifications of each treatment and the method preferred by the outside auditors.
- Review the scope, plan and procedures to be used on the annual audit and receive confirmation from the outside auditors that no limitations have been placed on the scope or nature of their audit scope, plan or procedures.
- Review the results of any difficulties, differences or disputes with management encountered by the outside auditors during the course of the audit or reviews and be responsible for overseeing the resolution of such difficulties, differences and disputes.
- Review, evaluate and discuss with the outside auditors and management Golden Star’s audited annual financial statements and other information that is to be included in Golden Star’s annual information form, annual financial statements and the Form 40-F (or such other annual report as may be required by the rules and regulations of the SEC), including the disclosures in respect of Golden Star’s “management’s discussion and analysis of financial condition and results of operations”, and the results of the outside auditors’ audit of Golden Star’s annual financial statements, including the accompanying notes, and the outside auditors’ report, and determine whether to recommend to the Board that the financial statements are satisfactory in form and substance for filing on SEDAR and with the SEC. Review and discuss with the outside auditors and management Golden Star’s quarterly financial statements and other information to be included in Golden Star’s quarterly management discussion and analysis of financial condition and results of operations, prior to filing such reports on SEDAR and with the SEC.

Related Party Transactions

- Review and oversee any transaction exceeding US\$120,000 or otherwise material to Golden Star involving Golden Star and a related party, and review any other related party transactions.

Earnings Press Releases

- Review and discuss with management and the outside auditors prior to release all earnings press releases of Golden Star, as well as any financial information and/or earnings guidance, if any, to be provided by Golden Star to analysts and rating agencies.