

## NEWS RELEASE

### Golden Star Announces Mineral Reserve and Mineral Resource Update as of December 31, 2019 Further Significant Resource Growth at Wassa Underground

Toronto, ON – March 27, 2020 - Golden Star Resources Ltd. (NYSE American: GSS; TSX: GSC; GSE: GSR) (“Golden Star” or the “Company”) announces its Mineral Reserves and Mineral Resources estimate as of December 31, 2019.

#### HIGHLIGHTS

- Measured and Indicated Mineral Resources increased by 5% to contain 4.5 million ounces (“Moz”) of gold
- Inferred Mineral Resources increased by 13% to 8.0Moz, driven by Wassa underground
- Proven and Probable Mineral Reserves decreased by 4% or 77 thousand ounces (“koz”) to 1.7Moz, due to 2019 mining depletion of 221koz exceeding the Reserve additions of 147koz
- Wassa underground delivered significant Mineral Resource growth comprising of:
  - Measured and Indicated Mineral Resources increased 18%, or 306koz to 2.03Moz
  - Inferred Mineral Resources increased 19%, or 1.15Moz to 7.1Moz
- The Proven Mineral Reserve at Wassa increased 87% to 228koz due to increased definition and infill drilling, resulting in more than 12 months of Mineral Reserves that are available in the highest confidence Reserve category supporting production in 2020 and 2021.

#### Andrew Wray, Chief Executive Officer of Golden Star, commented:

“It is extremely encouraging to see another significant increase in the overall Resource base at Wassa, which continues to gain real scale and production growth. Through 2019 we focused on improving our geological understanding and confidence in the areas to be mined in 2020 and 2021 with increased definition drilling, which has resulted in an 87% increase in the Proven Mineral Reserve.

We remain excited by the longer term potential at Wassa, and we are focussed on continuing to deliver this potential. Our exploration strategy for the mine in 2020 is transitioning away from further growth of the overall Resource to infill drilling to assist us in better understanding the likely mine plans for the southern extension of the underground operation. We understand that developing suitable drilling platforms from underground form a critical path item to realizing this objective.

At Prestea, the focus of our drilling in 2019 and into 2020 has been to better understand the geology of the ore body in order to execute the revised mine plan with a modified Alimak method on 24 level and the introduction of the Long Hole Open Stopping (“LHOS”) method on 17 level. As a result, we have seen some depletion of the Reserve and no overall additions to the Resource base, but this remains a high grade asset and our focus is on the disciplined mining of the identified Reserve.”

## MINERAL RESERVES AND MINERAL RESOURCES SUMMARY

The following table provides a summary of Golden Star's estimated Proven and Probable Mineral Reserves, Measured and Indicated Mineral Resources and Inferred Mineral Resources as of December 31, 2019:

	Tonnes ('000)	Grade (g/t Au)	Gold Content ('000 oz)
<b>Proven and Probable Mineral Reserves<sup>1,3</sup></b>	19,261	2.76	1,712
<b>Measured and Indicated Mineral Resources<sup>1,2,3</sup></b>	53,936	2.62	4,539
<b>Inferred Mineral Resources<sup>1,3</sup></b>	64,085	3.90	8,042

### Notes to Table:

1. Includes free-milling material only (ie: excludes refractory material).
2. Mineral Resources are inclusive of Mineral Reserves.
3. Mineral Reserves were estimated using a gold price of \$1,300 per ounce. Mineral Resources were estimated using a gold price of \$1,500/oz.

### MINERAL RESERVE ESTIMATE: BREAKDOWN BY ASSET

During 2019, Golden Star's Proven and Probable Mineral Reserves decreased by 77koz, primarily as a result of the mining depletion of 221koz exceeding the Reserve additions of 147koz.

At Wassa, mining depletion was 166koz with additions from material mined out of Reserve during 2019 (18koz) and material defined by definition drilling informed stope designs (87koz). The material mined outside of the Reserves consisted of stope extensions defined by drilling completed during 2019 and marginal material taken as ore from development headings totalling 271kt at 2.1g/t.

At Prestea, mining depletion was 55koz with additions from open pit mining out of Reserve during 2019 (28koz) and additional ore now included in the mine plan due to mine design changes with the introduction of the new stoping method.

The following table provides a breakdown of Golden Star's estimated Proven and Probable Mineral Reserves as of the dates set forth therein:

Mineral Reserves	December 31, 2019 Proven Mineral Reserve			December 31, 2019 Probable Mineral Reserve			December 31, 2019 Proven and Probable Mineral Reserve			December 31, 2018 Proven and Probable Mineral Reserve		
	Tonnes (000)	Grade g/t Au	Oz (000)	Tonnes (000)	Grade g/t Au	Oz (000)	Tonnes (000)	Grade g/t Au	Oz (000)	Tonnes (000)	Grade g/t Au	Oz (000)
Wassa Open Pit	-	-	-	9,920	1.57	500	9,920	1.57	500	9,920	1.57	500
Wassa Underground	1,723	4.11	228	5,701	3.61	661	7,424	3.72	889	7,481	3.95	949
Stockpiles	1,062	0.62	21	-	-	-	1,062	0.62	21	1,205	0.63	24
<b>Subtotal Wassa</b>	<b>2,785</b>	<b>2.78</b>	<b>249</b>	<b>15,621</b>	<b>2.31</b>	<b>1,160</b>	<b>18,405</b>	<b>2.38</b>	<b>1,410</b>	<b>18,606</b>	<b>2.46</b>	<b>1,473</b>
Prestea Open Pit	-	-	-	-	-	-	-	-	-	-	-	-
Prestea Underground	-	-	-	856	11.00	302	856	11.00	302	826	11.91	316
Stockpiles	-	-	-	-	-	-	-	-	-	-	-	-
<b>Subtotal Prestea</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>856</b>	<b>11.00</b>	<b>302</b>	<b>856</b>	<b>11.00</b>	<b>302</b>	<b>826</b>	<b>11.91</b>	<b>316</b>
<b>GSR Total</b>	<b>2,785</b>	<b>2.78</b>	<b>249</b>	<b>16,476</b>	<b>2.76</b>	<b>1,463</b>	<b>19,261</b>	<b>2.76</b>	<b>1,712</b>	<b>19,432</b>	<b>2.86</b>	<b>1,789</b>

#### Notes to the Mineral Reserve Estimate:

- The stated Mineral Reserves comply with the requirements of National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“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.
- 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.
- The Mineral Reserves at December 31, 2019 were prepared under the supervision of Matt Varvari, VP Technical Services for the Company. Mr. Varvari is a QP as defined by NI 43-101.
- The Mineral Reserves at December 31, 2019 were estimated using a gold price assumption of \$1,300 per ounce.
- 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.
- Cut-off grades have been estimated based on operating cost projections, mining dilution and recovery, royalty and stream payment requirements and applicable metallurgical recovery.
- Marginal cut-off grade estimate for the Wassa open pit is 0.7 grams per tonne (“g/t”) of gold (“Au”).
- Break-even cut-off grade estimates for the underground mines are as follows: Wassa Underground 2.4 g/t Au; and the Prestea Underground Gold Mine (“Prestea Underground”) 7.5 g/t Au.
- Prestea Underground Proven Mineral Reserve includes underground broken stocks.
- Numbers may not add due to rounding.
- Only non-refractory material is included in Mineral Reserves.

## RECONCILIATION OF MINERAL RESERVES

The following illustrations provide a reconciliation of the Company's Proven and Probable Mineral Reserves at Wassa (Figure 1) and Prestea (Figure 2) from December 31, 2018 to December 31, 2019.

Figure 1: Wassa Mineral Reserve reconciliation

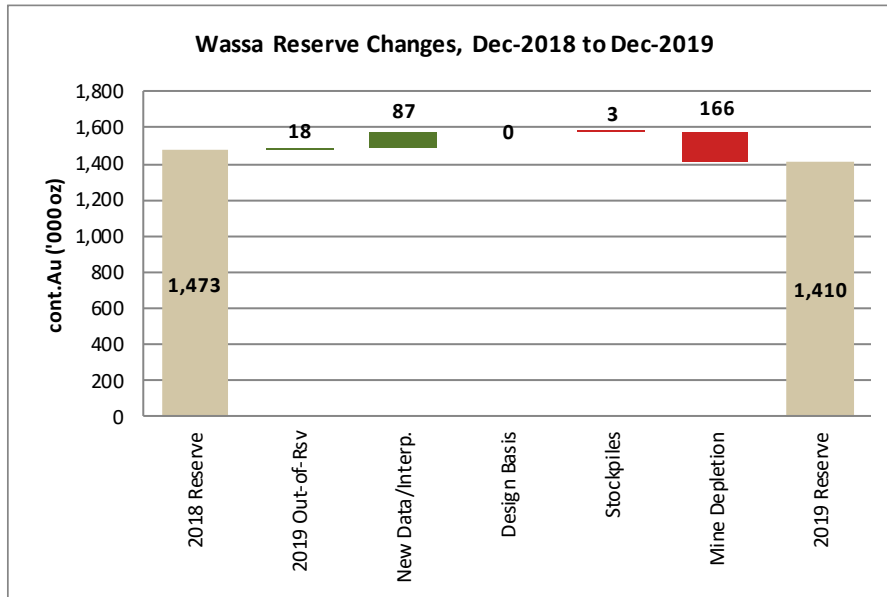
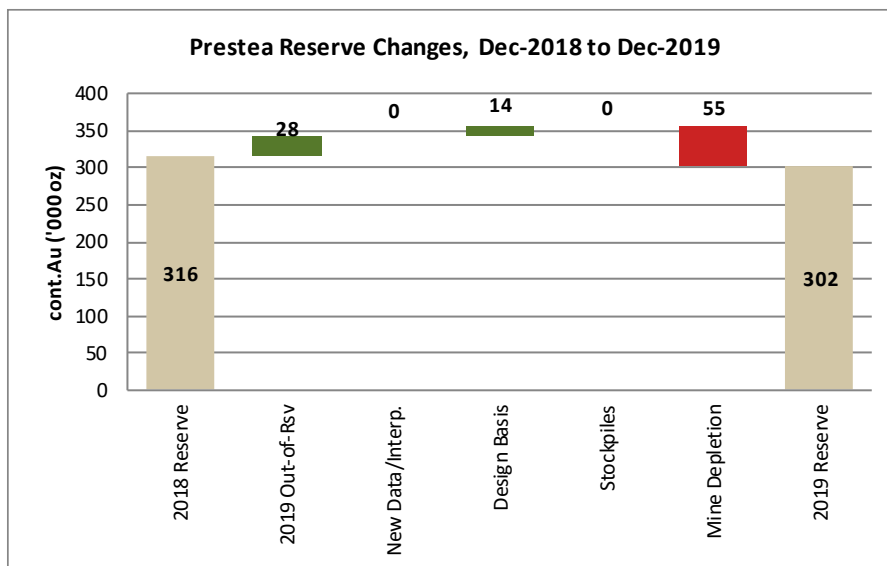


Figure 2: Prestea Mineral Reserve reconciliation



## WASSA MINERAL RESERVE

65% of the 2019 mining depletion of the Wassa Mineral Reserve was offset by additions, limiting the decrease of the Mineral Reserve to only 4%. Definition drilling increased the component of the Mineral Reserve in the Proven category from 88 koz last year, to 228 koz at a grade of 4.1g/t. This is the result of ongoing investment into increased drill density with the target of having 12 months of production defined to the highest confidence classification.

In 2019, 1.4Mt of ore was mined at a grade of 3.57g/t. This is below the 2018 Reserve grade of 3.95g/t due to the inclusion of 271kt at an average grade of 2.12g/t of material from outside of the 2018 Reserves, comprising of both stope extensions and material from development headings. When adjusting for the ore mined from outside of Reserves, the ore mined from within the 2018 Reserve totalled 1.15Mt at a grade of 3.91g/t, in line with the Reserve grade estimate.

The 2019 underground Reserve grade at Wassa is 3.72g/t Au, which is 6% lower than the 2018 Reserve estimate. The 2019 drilling programme improved our understanding of the ore body to better inform stope designs by identifying lower grade material around the planned stopes, which is closer to, but still above the cut-off grade.

There has been no change to the open pit reserve, but this will be reviewed during 2020 to re-assess this material, in the context of the underground mine extending south of the current Reserve, to extract the large Inferred Mineral Resource.

## PRESTEA MINERAL RESERVE

At Prestea, the open pit Mineral Reserve was depleted in 2018 and therefore all of the 28koz of open pit production during 2019 came from outside the Reserve.

The Prestea underground Mineral Reserve has reduced by 14 koz, with 55 koz of mining depletion offset by 14 koz additions. The additions result from an 18koz decrease due to higher cost resulting in an increased cut-off grade to 7.5g/t Au (was 7.0g/t Au) and addition of 32koz of contained gold due to mine design changes (new method and new blocks between 24 and 29L).

The 2019 Performance at Prestea was below the 2017 Technical Report forecast. The reviews completed during 2019 have resulted in a new life-of-mine plan, which shows improved productivity and reduced unit costs that can be achieved through revised geotechnical design parameters for Alimak stopes, introduction of Long Hole Open Stopping (LHOS) mining method and achieving improved operational efficiencies through the initiatives being implemented as part of Project Okode, the optimisation project at Prestea.

These changes to the mine plan directly result from the operational review undertaken by Golden Star and consultant CSA Global during 2019. The current changes include LHOS introduction on 17 level and optimisation of the existing Alimak mining methodology on 24 level and are the basis for the 2019 Mineral Reserve assumptions.

## MEASURED AND INDICATED MINERAL RESOURCES: BREAKDOWN BY ASSET

Golden Star's Measured and Indicated Mineral Resources at its two assets, Wassa and Prestea, increased by 5% in 2019. This increase was predominantly due to increases at Wassa underground where the Company added ounces through the approximately 100,000 metre surface and underground drilling campaigns completed in 2019. The drilling at Wassa underground was successful in converting 2.8Mt of material into the Measured Mineral Resource category, which results in an improved level of confidence in the Company's ability to deliver on the 2020 budget and short-term mine plan.

The following table provides a breakdown of Golden Star's estimated Measured and Indicated Mineral Resources as of the dates set forth therein:

	December 31, 2019			December 31, 2019			December 31, 2019			December 31, 2018		
	Measured Mineral Resources			Indicated Mineral Resources			Measured & Indicated Mineral Resources			Measured & Indicated Mineral Resources		
	Tonnes (000)	Grade g/t Au	Oz (000)	Tonnes (000)	Grade g/t Au	Oz (000)	Tonnes (000)	Grade g/t Au	Oz (000)	Tonnes (000)	Grade g/t Au	Oz (000)
Wassa Open Pit	-	-	-	29,179	1.29	1,206	29,179	1.29	1,206	28,042	1.39	1,254
Wassa Underground	2,831	4.99	454	13,371	3.66	1,573	16,202	3.89	2,027	12,507	4.28	1,721
Father Brown Adoikrom UG	-	-	-	913	8.67	254	913	8.67	254	981	7.54	238
Wassa Other	-	-	-	2,512	2.32	187	2,512	2.32	187	2,308	2.36	175
<b>Subtotal Wassa</b>	<b>2,831</b>	<b>4.99</b>	<b>454</b>	<b>45,975</b>	<b>2.18</b>	<b>3,221</b>	<b>48,806</b>	<b>2.34</b>	<b>3,675</b>	<b>43,839</b>	<b>2.40</b>	<b>3,388</b>
Bogoso / Prestea (refractory)	-	-	-	19,812	2.76	1,760	19,812	2.76	1,760	17,677	2.85	1,619
Mampon	-	-	-	106	1.61	5	106	1.61	5	83	1.71	5
Prestea South	-	-	-	1,707	2.08	114	1,707	2.08	114	1,521	2.15	105
Prestea Underground	-	-	-	1,136	17.15	626	1,136	17.15	626	1,308	16.82	707
Bogoso / Prestea Other	-	-	-	2,181	1.68	118	2,181	1.68	118	2,387	1.66	128
<b>Subtotal Bogoso / Prestea</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>24,942</b>	<b>3.27</b>	<b>2,624</b>	<b>24,942</b>	<b>3.27</b>	<b>2,624</b>	<b>22,975</b>	<b>3.47</b>	<b>2,564</b>
<b>TOTAL</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>70,917</b>	<b>2.56</b>	<b>5,845</b>	<b>73,749</b>	<b>2.66</b>	<b>6,299</b>	<b>66,814</b>	<b>2.77</b>	<b>5,952</b>
<b>TOTAL (excluding refractory)</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>51,105</b>	<b>2.49</b>	<b>4,084</b>	<b>53,936</b>	<b>2.62</b>	<b>4,539</b>	<b>49,137</b>	<b>2.74</b>	<b>4,333</b>

## INFERRED MINERAL RESOURCES: BREAKDOWN BY ASSET

Golden Star's Inferred Mineral Resources increased by 13% to 8.0Moz during 2019, even after the conversion of some of 2018 Inferred Mineral Resources into the Indicated category. The increase was delivered primarily at Wassa through step out and infill drilling.

The Inferred Mineral Resource increase at Wassa was predominantly in the southern section of the deposit where the 2019 deep directional drilling focused on stepping out 200 metres and infill definition of the 2018 Inferred Mineral Resources. The 2019 drilling was successful in extending the mineralization 200 metres to the south where the deposit remains open to the south and down dip. The infill drilling also confirmed the continuity of higher grades and helped with the structural understating of the gold mineralization which in turn was applied to the updated resource model estimation on which the Inferred Mineral Resource is based.

The following table provides a breakdown of Golden Star's estimated Inferred Mineral Resources as of the dates set forth below:

	December 31, 2019			December 31, 2018		
	Inferred Mineral Resources			Inferred Mineral Resources		
	Tonnes (000)	Grade g/t Au	Oz (000)	Tonnes (000)	Grade g/t Au	Oz (000)
Wassa Open Pit	616	1.31	26	23	0.74	1
Wassa Underground	58,820	3.75	7,097	50,661	3.65	5,945
Father Brown Adoikrom UG	1,879	6.07	367	2,313	6.38	475
Wassa Other	421	2.11	29	382	2.10	26
<b>Subtotal Wassa</b>	<b>61,737</b>	<b>3.79</b>	<b>7,518</b>	<b>53,379</b>	<b>3.76</b>	<b>6,446</b>
Mampon	17	1.66	1	14	1.68	1
Prestea South	73	1.87	4	68	8.42	4
Prestea Underground	1,585	9.54	486	2,488	1.50	674
Bogoso / Prestea Other	673	1.47	32	468	7.18	23
<b>Subtotal Bogoso / Prestea</b>	<b>2,348</b>	<b>6.93</b>	<b>523</b>	<b>3,038</b>	<b>7.18</b>	<b>701</b>
Bogoso / Prestea (refractory)	826	2.69	71	916	2.61	77
<b>TOTAL (including refractory)</b>	<b>64,910</b>	<b>3.89</b>	<b>8,113</b>	<b>57,333</b>	<b>3.92</b>	<b>7,224</b>
<b>TOTAL NON REFRACTORY</b>	<b>64,085</b>	<b>3.90</b>	<b>8,042</b>	<b>56,417</b>	<b>3.94</b>	<b>7,147</b>

### Notes to Mineral Resource Estimates

1. The Mineral Resources for "Bogoso/Prestea Others" include Chujah, Dumasi, Bogoso North, Buesichem, Opon and Ablifa.
2. The Wassa Underground Mineral Resource has been estimated below the \$1,500 per ounce of gold pit shell using an economic gold grade cut-off of 1.89 g/t Au, which the Company believes would be the lower cut-off grade for underground mining and constrained to a 0.4 g/t Au mineralized grade shell.
3. The 2019 Mineral Resources were prepared under the supervision of Mitchel Wasel, VP Exploration for the Company. Mr. Wasel is a QP as defined by NI 43-101.
4. The Father Brown Underground Mineral Resource has been estimated below the deepest mined topography using an economic gold grade cut-off of 3.1 g/t Au, which the Company believes would be the lower cut-off grade for underground mining.
5. Prestea Underground Mineral Resource has been estimated below the \$1,500 per ounce pit shell of Prestea South down to 3,800 m elevation using a gold cut-off grade at 6.84 g/t Au.
6. Mineral Resources were estimated using optimized pit shells at a gold price of \$1,500 per ounce. Other than gold price, the same optimized pit shell and underground parameters and modifying factors used to determine the Mineral Reserves were used to determine the Mineral Resources.
7. Mineral Resources are inclusive of Mineral Reserves.
8. Numbers may not add due to rounding.
9. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability

## **FATHER BROWN**

The 2019 Resource update has resulted in the Measured and Indicated Mineral Resource grade increasing by 15% to 8.67g/t of gold and the contained ounces increasing by 7% to 254koz. Despite the improved grade (as stated in the Q3 2019 results) the review of the asset showed that the project, as it currently stands, does not deliver sufficient returns to move into a feasibility study. Further development steps on Father Brown will be considered alongside other exploration targets and development projects in the Wassa land package.

### **For further information, please visit [www.gsr.com](http://www.gsr.com) or contact:**

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### **Company Profile:**

Golden Star is an established gold mining company that owns and operates the Wassa and Prestea underground mines in Ghana, West Africa. Listed on the NYSE American, the Toronto Stock Exchange and the Ghanaian Stock Exchange, Golden Star is focused on delivering strong margins and free cash flow from its two underground mines. Gold production guidance for 2020 is 195,000-210,000 ounces at a cash operating cost per ounce<sup>1</sup> of \$790-\$850. Since winning the PDAC 2018 Environmental and Social Responsibility Award, Golden Star has remained committed to leaving a positive and sustainable legacy in its areas of operation.

#### Note

- 1 See Non-GAAP Financial Measures disclaimer.
- 2 All monetary amounts refer to United States dollars unless otherwise indicated.



## Statements Regarding Forward-Looking Information

Some statements contained in this news release are “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995 and “forward looking information” within the meaning of Canadian securities laws and include but are not limited to, statements and information regarding: likely mine plans for the southern extension of the Wassa underground operation; mining of the identified Mineral Reserve at Prestea Underground; having 12 months of production defined to the highest confidence classification at Wassa; obtaining all necessary permits; the continued implementation of new mining methods in connection with Project Okode; improved productivity and reduced unit costs that can be achieved at Prestea; consideration of further development steps on Father Brown and other exploration targets and development projects in the Wassa land package; and gold production of 195-210koz and a cash operating cost of \$790-\$850 per ounce in 2020. Generally, forward-looking information and statements can be identified by the use of forward-looking terminology such as “plans”, “expects”, “is expected”, “budget”, “scheduled”, “estimates”, “forecasts”, “intends”, “anticipates”, “believes” or variations of such words and phrases (including negative or grammatical variations) or statements that certain actions, events or results “may”, “could”, “would”, “might” or “will be taken”, “occur” or “be achieved” or the negative connotation thereof. Investors are cautioned that forward-looking statements and information are inherently uncertain and involve risks, assumptions and uncertainties that could cause actual facts to differ materially. 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, including but not limited to: risks related to international operations, including economic and political instability in foreign jurisdictions in which Golden Star operates; risks related to current global financial conditions, including financial and other risks resulting from the impact of the COVID-19 global pandemic; volatility of the Golden Star’s stock price; foreign exchange rate fluctuations; risks related to streaming agreements and joint venture operations; future production; project development; actual results of current exploration activities; environmental risks; future prices of gold; possible variations in Mineral Reserves or Mineral Resources, grade or recovery rates; mine development and operating risks; accidents, labor disputes and other risks of the mining industry; delays in obtaining permitting, governmental approvals or financing or in the completion of development or construction activities and risks related to indebtedness and the service of such indebtedness. Although Golden Star has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking information and statements, there may be other factors that cause results not to be as anticipated, estimated or intended. There can be no assurance that future developments affecting the Company will be those anticipated by management. Please refer to the discussion of these and other factors in Management’s Discussion and Analysis of financial conditions and results of operations for the year ended December 31, 2019 and in our annual information form for the year ended December 31, 2019 as filed on SEDAR at [www.sedar.com](http://www.sedar.com). The forecasts contained in this press release constitute management’s current estimates, as of the date of this press release, with respect to the matters covered thereby. We expect that these estimates will change as new information is received. While we may elect to update these estimates at any time, we do not undertake any estimate at any particular time or in response to any particular event.

## Non-GAAP Financial Measures

In this news release, we use the terms “cash operating cost”, “cash operating cost per ounce”.

“Cash operating cost” for a period is equal to “cost of sales excluding depreciation and amortization” for the period less royalties, the cash component of metals inventory net realizable value adjustments, materials and supplies write-off and severance charges and “cash operating cost per ounce” is that amount

divided by the number of ounces of gold sold (excluding pre-commercial production ounces sold) during the period.

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

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

For additional information regarding the Non-GAAP financial measures used by the Company, please refer to the heading *“Non-GAAP Financial Measures”* in the Company's Management Discussion and Analysis of Financial Condition and Results of Operations for the year ended December 31, 2019, which are available at [www.sedar.com](http://www.sedar.com)

## **Technical Information**

The Mineral Reserve and Mineral Resource estimates have been compiled by the Company's technical personnel in accordance with definitions and guidelines set out in the Definition Standards for Mineral Resources and Mineral Reserves adopted by the Canadian Institute of Mining, Metallurgy, and Petroleum and as required by Canada's National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”). 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.

The Mineral Resource technical contents of this press release have been reviewed and approved by S. Mitchel Wasel, BSc Geology, a “Qualified Person” pursuant to NI 43-101. Mr. Wasel is Vice President Exploration for Golden Star and an active member of the Australasian Institute of Mining and Metallurgy. The 2019 and 2018 estimates of Mineral Resources were prepared under the supervision of Mr. Wasel. The Mineral Reserve technical contents of this press release, have been reviewed and approved by and were prepared under the supervision of Matt Varvari, Vice President, Technical Services for the Company. Mr. Varvari is a “Qualified Person” as defined by NI 43-101. The 2018 estimates of Mineral Reserves, were prepared under the supervision of Dr. Martin Raffield, a former employee of the Company.

Additional scientific and technical information relating to the mineral properties referenced in this news release are contained in the following current technical reports for those properties available at [www.sedar.com](http://www.sedar.com): (i) Wassa - “NI 43-101 Technical Report on Resources and Reserves, Golden Star Resources, Wassa Gold Mine, Ghana” effective December 31, 2018; (ii) Bogoso Prestea - “NI 43-101 Technical Report on Resources and Reserves, Golden Star Resources, Bogoso/Prestea Gold Mine, Ghana” effective date December 31, 2017.

## **Cautionary Note to US Investors Concerning Estimates of Measured and Indicated Mineral Resources**

This press release uses the terms “Measured Mineral Resources” and “Indicated Mineral Resources”. The Company advises US investors that while these terms are recognized and required by NI 43-101, the US Securities and Exchange Commission (“SEC”) does not recognize them. Also, disclosure of contained ounces is permitted under Canadian regulations; however the SEC generally requires Mineral Resource information to be reported as in-place tonnage and grade. US Investors are cautioned not to assume that any part or all of the mineral deposits in these categories will ever be converted into Mineral Reserves.

## **Cautionary Note to US Investors Concerning Estimates of Inferred Mineral Resources**

This press release uses the term “Inferred Mineral Resources”. The Company advises US investors that while this term is recognized and required by NI 43-101, the SEC does not recognize it. “Inferred Mineral Resources” have a great amount of uncertainty as to their existence, and great uncertainty as to their economic and legal feasibility. It cannot be assumed that all or any part of Inferred Mineral Resources will ever be upgraded to a higher category. In accordance with Canadian rules, estimates of Inferred Mineral Resources cannot form the basis of feasibility or other economic studies. US investors are cautioned not to assume that any part or all of the Inferred Mineral Resource exists, or is economically or legally mineable.

Source: Golden Star Resources Ltd.