



## **GOLDEN MINERALS REPORTS POSITIVE PRELIMINARY ECONOMIC ASSESSMENT FOR EL QUEVAR SILVER PROJECT**

GOLDEN, CO., September 5, 2018 (GLOBE NEWSWIRE) – Golden Minerals Company (“Golden Minerals”, “Golden” or “the Company”) (NYSE American and TSX: AUMN) has announced positive results from the Preliminary Economic Assessment (“PEA”) for its 100%-controlled El Quevar silver project located in Salta Province, Argentina.

“We are very pleased with the results of this PEA, as the report confirms the potential for a profitable mining operation at El Quevar’s Yaxtché deposit, with annual production of around 5 million oz. silver. We also see substantial opportunity to expand the size of the known resource and therefore improve the overall mine life economics. While the PEA considers only the Yaxtché deposit as outlined in the February 2018 resource estimate, the Yaxtché deposit is still open for potential expansion on strike at both ends, and Golden Minerals has identified numerous prospective targets that lie outside the current resource area but within the larger 57,000-hectare property. We believe we have an excellent opportunity to further enhance the scale and economic significance of the El Quevar project through additional exploration,” notes Warren M. Rehn, President and Chief Executive Officer of Golden Minerals Company.

Amec Foster Wheeler E&C Services, Inc., a Wood company (“Wood”), an independent engineering company, has prepared the technical report for Golden Minerals Company on the results of the PEA compiled in accordance with Canadian National Instrument 43-101 “Standards of Disclosure for Mineral Projects” (“NI 43-101”). The economic model was assembled by Samuel Engineering, based on capital and operating cost estimates from John E. Thompson LLC and Samuel Engineering. The full technical report will be filed on SEDAR within 45 days of this press release.

### **PEA Highlights**

- After-tax net present value (“NPV”): (US)\$45 million at a 5% discount rate
- After-tax internal rate of return (“IRR”): 17.0%
- After-tax payback period: 3.4 years
- Total pre-production capital cost: \$97 million, including \$16 million contingency
- Pre-production development time: 2 years
- Life of mine (“LOM”) 6 years, based on the subset of the Mineral Resource estimate in the PEA mine plan
- LOM free cash flow \$80 million
- LOM payable silver production 29 million oz.



- LOM average silver grade 409 grams per tonne (“g/t”)
- Post start-up cash cost \$9.10 per payable ounce of silver <sup>1</sup>
- Post start-up all-in sustaining costs (“AISC”) \$9.45 per payable silver oz. <sup>1</sup>

<sup>1</sup> Cash cost and AISC are defined in “Non-GAAP Financial Measures” below.

Note: PEA parameters assume a silver price of \$16.66/oz and a discount rate of 5%. All figures throughout this release are expressed in US Dollars unless otherwise noted.

Key parameters of the PEA are shown in the following sections.

The PEA is preliminary in nature and includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves. Standalone economics have not been undertaken for the Indicated Resources and as such no reserves have been estimated for the Project. There is no certainty that the economic results described in the PEA will be realized. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.

### Financial Summary

El Quevar’s after-tax economic results have been summarized below.

<b>Table 1</b>	
<b>Financial Results Summary</b>	
<b>Financial Results</b>	<b>Post-Tax (\$M)</b>
Cumulative Cash Flows (LOM)	\$ 79.8
<b>Net Present Value (5%) (Base Case)</b>	<b>\$ 44.9</b>
Net Present Value (8%)	\$ 29.6
Net Present Value (10%)	\$ 21.2
Internal Rate of Return (IRR)	17.0%
Payback	3.4 years
Total Capital Costs	\$ 96.8

**Economic Model Inputs**

<b>Table 2</b>	
<b>Economic Model Inputs</b>	
<b>Description</b>	<b>Values</b>
Construction Period	2 years
Mine Life (after preproduction)	6 years
LOM Indicated Tonnage (Thousands)	2,186
LOM Indicated Grade (g/t Ag)	413
LOM Inferred Tonnage (Thousands)	261
LOM Inferred Grade (g/t Ag)	375
Avg. Annual Process Production Rate Silver (000 oz)	4,837
<b>Metal Pricing</b>	
Silver Price (US\$/oz)	\$16.66
<b>Cost Criteria</b>	
Estimate Basis	2rd Q 2018 USD
Inflation/Currency Fluctuation	None
Leverage	100% Equity
<b>Income Tax</b>	
Argentina Corporate	25% Profit
Salta Mining	3% Mine Mouth <sup>2</sup>
<b>Royalties / Payments</b>	
Castor Royalty	0.5% NSR royalty on Castor Concession
Cannon Payment	\$100,000 per year
<b>Transportation, Smelting, and Refining Charges</b>	
Shipping, Handling & Fees	\$255 wet tonne conc.
Insurance	0.2 % conc. value
Concentrate Treatment Charge	\$110 dry tonne conc.
Metal Refining Charge	\$1.10 / oz. payable silver
Arsenic, Antimony & Bismuth Penalty	\$237 dry tonne conc.

<sup>2</sup> Applied to value of mineral produced net of processing costs, administrative costs, and other costs of sales

## Mining Operations

The PEA contemplates a six-year underground mining operation using pre-existing and new underground development at a mine production rate of 1,200 tonnes per day using a post-pillar cut-and-fill mining method, and will deliver 2.45 million tonnes of diluted sulfide mineralized material at an average grade of 409 g/t silver. The mined material will be processed using a conventional single product flotation that contains 11.5 kg of silver per tonne of dry concentrate. The mined material will be processed using a conventional single product flotation that produces a concentrate grading 11.5 kg/tonne of silver.

Life of mine operating costs have been estimated as follows:

<b>Table 3</b>		
<b>Summary of Operating Costs</b>		
<b>Description</b>	<b>LOM Total \$M</b>	<b>LOM Ave \$/ tonne MSM<sup>3</sup></b>
Mining	\$106.50	\$43.52
Processing	\$33.20	\$13.59
G&A	\$19.50	\$7.96
<b>Total</b>	<b>\$159.20</b>	<b>\$65.07</b>
		\$ / oz. recovered
<b>Total per recovered ounce</b>		<b>\$5.77</b>

<sup>3</sup> Mineralized silver material



### Capital Costs Summary

The pre-production capital cost summary is shown below:

Table 4	
Capital Cost Summary	
Description	\$M
Mining	\$ 26.7
Process	\$ 29.1
General & Infrastructure	\$ 15.0
EPCM <sup>4</sup>	\$ 10.0
Contingency (25%)	\$ 16.0
<b>TOTAL</b>	<b>\$ 96.8</b>

<sup>4</sup> Engineering and Procurement and Construction Management

Sustaining capital includes items such as mining costs to add new equipment as the mine develops, new systems such as mine dewatering as the development grows, costs associated with future tailings development and closure costs. These costs are shown below (note: numbers do not sum to the total due to rounding):

Table 5								
Summary of Sustaining Capital Costs (\$M)								
Area	LOM	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Mining Equipment	2.6	-	1.3	-	1.3	-	-	-
Ancillary Equipment	5.0	0.5	2.3	-	2.3	-	-	-
Tailings Storage Facility	1.8	-	-	1.8	-	-	-	-
Infrastructure	0.1	0.1	-	-	-	-	-	-
Mine Reclamation & Closure	3.7	-	-	-	-	-	-	3.7
<b>Total</b>	<b>13.3</b>	<b>0.6</b>	<b>3.6</b>	<b>1.8</b>	<b>3.6</b>	<b>-</b>	<b>-</b>	<b>3.7</b>

## Sensitivity Tables

The following table displays the sensitivities of various project outcome metrics to changes in capital costs, the price of silver, annual operating costs and silver recoveries.

<b>Table 6</b>									
<b>Post-tax Sensitivity Analysis</b>									
<b>Capital Cost</b>									
	-40%	-30%	-20%	-10%	<b>Base</b>	10%	20%	30%	40%
Capital Cost (\$M)	\$58	\$68	\$77	\$87	<b>\$97</b>	\$107	\$116	\$126	\$136
IRR	35.1%	29.1%	24.4%	20.4%	<b>17.0%</b>	14.0%	11.4%	9.1%	7.0%
NPV @ 5% (\$M)	\$76.6	\$69.0	\$61.1	\$53.1	<b>\$44.9</b>	\$36.5	\$27.9	\$19.1	\$10.1
<b>Silver Price (\$/oz)</b>									
	-40%	-30%	-20%	-10%	<b>Base</b>	+10%	+20%	+30%	+40%
US\$/troy oz.	\$10.00	\$11.66	\$13.33	\$14.99	<b>\$16.66</b>	\$18.33	\$19.99	\$21.66	\$23.32
IRR	-19.1%	-6.6%	3.0%	10.2%	<b>17.0%</b>	23.3%	29.1%	34.7%	40.1%
NPV @ 5% (\$M)	(\$73.3)	(\$39.1)	(\$7.2)	\$19.0	<b>\$44.9</b>	\$70.6	\$96.2	\$121.7	\$147.3
<b>Total Annual Operating Cost (\$/t)</b>									
	-40%	-30%	-20%	-10%	<b>Base</b>	+10%	+20%	+30%	+40%
US\$/tonne	\$39.04	\$45.55	\$52.05	\$58.56	<b>\$65.07</b>	\$71.57	\$78.08	\$84.58	\$91.09
IRR	26.3%	24.1%	21.8%	19.4%	<b>17.0%</b>	14.6%	12.1%	9.6%	7.0%
NPV @ 5% (\$M)	\$81.9	\$72.7	\$63.4	\$54.2	<b>\$44.9</b>	\$35.6	\$26.2	\$16.9	\$7.5
<b>Ag Recovery</b>									
	-4%	-3%	-2%	-1%	<b>Base</b>	+1%	+2%	+3%	+4%
Recovery	86.2%	87.2%	88.2%	89.2%	<b>90.2%</b>	91.2%	92.2%	93.2%	94.2%
IRR	14.2%	14.9%	15.6%	16.3%	<b>17.0%</b>	17.7%	18.4%	19.0%	19.7%
NPV @ 5% (\$M)	\$34.2	\$36.9	\$39.5	\$42.2	<b>\$44.9</b>	\$47.6	\$50.2	\$52.9	\$55.6

### \* Mineral Resource Estimate Dated February 26, 2018

In conjunction with the PEA, the independent firm of Amec Foster Wheeler E&C Services, Inc., a Wood plc company ("Wood") prepared a Mineral Resource estimate in compliance with NI 43-101 at El Quevar. The estimate is based on the same drilling data as the 2012 technical report prepared by RPMGlobal (formerly Pincock Allen & Holt) but uses updated geologic controls and a modeling approach designed to delineate the higher-grade mineralization. The Indicated and Inferred Mineral Resource estimates are shown as follows:

<b>Table 7</b>				
<b>Mineral Resource Table</b>				
<b>Category</b>	<b>Cut-off Ag (g/t)</b>	<b>Tonnes (M)</b>	<b>Ag Grade (g/t)</b>	<b>Ag (M oz)</b>
<b>Indicated</b>				
Sulfide	250	2.63	487	41.1
Oxide	250	0.3	434	4.2
<b>Inferred</b>				
Sulfide	250	0.31	417	4.1

Notes to accompany Mineral Resource table:

- 1) The independent Qualified Person who prepared the Mineral Resource estimate is Gordon Seibel, a Registered Member of the Society for Mining, Metallurgy and Exploration (RM SME), who is a Principal Geologist with Wood.
- 2) The effective date of the estimate is February 26, 2018. Mineral Resources are estimated using the CIM Definition Standards for Mineral Resources and Reserves (2014). Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.
- 3) There are reasonable prospects for eventual economic extraction under assumptions of a silver price of \$16.62/oz, employment of underground, mechanized, room-and-pillar mining methods, and that silver concentrates will be produced and sold to a smelter. Mining costs are assumed to be \$55/t at a nominal production of rate 365,000 t/a. Concentrator and general and administrative (G&A) costs are assumed to be \$30/t and \$20/t respectively. Metallurgical recovery for silver is assumed to be 88.5%.
- 4) Reported Mineral Resources contain no allowances for hanging wall or footwall contact boundary loss and dilution. No mining recovery has been applied.
- 5) Rounding as required by reporting guidelines may result in apparent differences between tonnes, grade and contained metal content.

## PEA Information

The discounted cash flows in the PEA are provided post-tax and are prepared in compliance with National Instrument 43-101 of the Canadian Securities Administrators. The following Qualified Persons, from Wood, Samuels Engineering Inc., and Mr. John E. Thompson will co-author the technical report that will be filed on SEDAR within 45 days of this news release: Mr. Gordon Seibel, RM SME; Mr. John E. Thompson, QP MMSA, Mr. Al Kuestermeyer, RM SME., and Mr. Steven Pozder, P.E. Each of these Qualified Persons has reviewed and approved the information presented in this news release that was derived from the sections of the PEA study for which they were responsible. Each of the named Qualified Persons is independent of Golden Minerals.

The contents of this press release have been reviewed and approved by Warren M. Rehn, M.Sc., QP MMSA (#01449QP), a Qualified Person for the purposes of NI 43-101. Mr. Rehn has over 33 years of mineral



exploration experience and is President, Chief Executive Officer and a Director of Golden Minerals Company.

### **Data Verification**

Mr. Gordon Seibel, RM SME visited the El Quevar project site, including the Yaxtche deposit, from 20 to 23 March 2018. The site visits included presentations by Golden Minerals' staff, inspection of core and surface outcrops, viewing historic drill platforms, sample cutting and logging facilities, and discussions of geology and mineralization interpretations with Golden Minerals' staff. During his visit, Mr. Seibel checked drill hole collar locations, inspected drill core, and collected witness samples from the Yaxtché deposit. Mr. Seibel participated in or supervised the data verification that was undertaken, which included a review of drilling, logging, sampling, and laboratory analysis procedures, and inspection of selected core and core photos. Database collar survey, down-hole survey, assays, density, lithology and redox tables were reviewed, as were the quality assurance and quality control results obtained for standard reference materials, duplicates and blanks. These checks were accompanied by independent umpire checks on density, and witness sample checks to confirm the presence of mineralization at the Yaxtché deposit. As a result of these verification steps, the data are considered acceptable to support Mineral Resource estimates.

### **About Golden Minerals**

Golden Minerals is a Delaware corporation based in Golden, Colorado. The Company is primarily focused on advancing its El Quevar silver property in Argentina and in acquiring and advancing mining properties in Mexico with emphasis on areas near its Velardeña processing plants.

### **Cautionary Note to United States Investors Regarding Estimates of Indicated and Inferred Mineral Resources**

This press release uses the terms "mineral resources", "indicated mineral resources" and "inferred mineral resources" which are defined in, and required to be disclosed by NI 43-101. We advise U.S. investors that these terms are not recognized under the SEC Industry Guide 7. Accordingly, the disclosures regarding mineralization in this news release may not be comparable to similar information disclosed by Golden Minerals in the reports it files with the SEC. The estimation of measured resources and indicated resources involves greater uncertainty as to their existence and economic feasibility than the estimation of proven and probable reserves. The estimation of inferred resources involves far greater uncertainty as to their existence and economic viability than the estimation of other categories of resources. US investors are cautioned not to assume that any or all of Minerals Resources are economically or legally mineable or that these Mineral Resources will ever be converted into Mineral Reserves. In addition, the SEC normally only permits issuers to report mineralization that does not constitute SEC Industry Guide 7



compliant “reserves” as in-place tonnage and grade without reference to unit amounts. U.S. investors are urged to consider closely the disclosure in our Form 10-K and other SEC filings.

### **Non-GAAP Financial Measures**

Cash cost per payable silver ounce is a non-GAAP financial measure calculated by the Company as set forth below and may not be comparable to similar measures reported by other companies. Cash cost includes all direct and indirect costs associated with the physical activities that would generate concentrate products for sale to customers, including mining to gain access to mineralized materials, mining of mineralized materials and waste, milling, third-party related treatment, refining and transportation costs, on-site administrative costs and royalties. Cash cost does not include depreciation, depletion, amortization, exploration expenditures, reclamation and remediation costs, financing costs, income taxes, or corporate general and administrative costs not directly or indirectly related to El Quevar. Cash cost is divided by the number of payable silver ounces generated by the plant for the period to arrive at cash cost per payable ounce of silver.

All-in sustaining costs (“AISC”) includes cash cost plus on-site exploration, reclamation and sustaining capital costs. AISC is divided by the number of payable silver ounces generated by the plant for the period to arrive at AISC per payable ounce of silver.

Cost of sales is the most comparable financial measure, calculated in accordance with GAAP, to cash cost. As compared to cash cost, cost of sales includes adjustments for changes in inventory and excludes third-party related treatment, refining and transportation costs, which are reported as part of revenue in accordance with GAAP.

### **Forward-Looking Statements**

This press release contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended and Section 21E of the Securities Exchange Act of 1934, as amended, and applicable Canadian securities legislation, including statements regarding the El Quevar PEA results (including cost estimates, assumption of silver prices, development timing, expected cash flows and life of mine and production expectations); future activities at El Quevar, the likelihood of future expansion of the deposit, and the possibility of future development; and estimates of mineral resources for the El Quevar project. These statements are subject to risks and uncertainties, including: the reasonability of the economic assumptions at the basis of the results of the El Quevar PEA and technical report; changes in interpretations of geological, geostatistical, metallurgical, mining or processing information and interpretations of the information resulting from future exploration, analysis or mining and processing experience; declines in general economic conditions and continued excessive inflation in Argentina; fluctuations in exchange rates and changes in political conditions, in tax, royalty, environmental and other



laws in Argentina; new information from drilling programs or other exploration or analysis; unexpected variations in mineral grades, types and metallurgy; fluctuations in silver prices; failure of mined material or veins mined to meet expectations;. Golden Minerals assumes no obligation to update this information. Additional risks relating to Golden Minerals may be found in the periodic and current reports filed with the SEC by Golden Minerals, including the Company's Annual Report on Form 10-K for the year ended December 31, 2017.

For additional information please visit <http://www.goldenminerals.com/> or contact:

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