

# Steppe Gold Announces Updated LOM Plan for ATO Gold Mine to 2036 - Higher Revenues and Profits

Ulaanbaatar, Mongolia--(Newsfile Corp. - February 21, 2023) - **Steppe Gold Ltd (TSX: STGO) (OTCQX: STPGF) (FSE: 2J9) ("Steppe Gold" or the "Company")** is pleased to announce an updated life of mine ("LOM") for the 100% owned ATO Gold Project in Mongolia, comprising a further 1.5 years at the fresh rock expansion ("Phase 2 Expansion"), for a 12 year aggregate mine life.

The results reinforce the Company's current Phase 2 Expansion plans with construction already underway, and existing permitting and infrastructure in place. The Phase 2 Expansion is scheduled to start with first concentrates in Q1 2025. The LOM plan includes the ongoing oxide operations which has a further three years to run, for a total of 14 years of mine life, from January 1, 2023.

*This news release contains forward-looking information regarding Steppe Gold's business and operations, see the Cautionary Note Regarding Forward-Looking Information on page 8 of this news release. All amounts are in US dollars unless otherwise indicated.*

## HIGHLIGHTS

- Increase in proven and probable gold mineral reserves from the 2021 mineral reserve and resources summary by 2.7 million tonnes, from 26.4 million to 29.1 million tonnes.
- The ATO Project deposit contains mineral reserves totaling 29.1 million tonnes at 1.13 g/t gold and 12.43 g/t silver, containing 1.1 million ounces of gold and 11.7 million ounces of silver.
- This derives a total of 1,320,000 oz Au Eq recovered, over oxide and fresh rock phases and a 14 year mine life.
- Fresh rock mine life is extended by 1.5 years to 12 years, extending open pit mining and milling operations to December 2036.
- The new pit model shows the fresh rock phase generating 1,237,000 oz Au Eq recovered over 12 years, at average Au Eq oz of 103,000 oz per annum, before payability adjustments.
- The update of reserves and resources have also reinterpreted the transition zone with the transitional layer now thinner than previously modelled.
- Total gross revenue over the next 14 years, including the balance of the oxide phase, of \$2.2 billion and operating cash flows after stream obligations, of \$781 million, with first concentrate production from Phase 2 anticipated in Q1 2025.
- It assumes gross revenue in the remaining oxide phase of \$158M (\$1,900/oz gold price) from approximately 83,000 of recovered Au oz, expected to conclude in 2025.
- Average site AISC of \$915/gold equivalent ounce, with solid plans to optimize, notably with grid power and potential renewable power options.
- Initial capital expenditure and operating cost assumptions are largely unchanged. Initial capex for the Phase 2 Expansion, prior to optimizations, is expected to be \$128.5 million with a \$12 million contingency. Recent price inflation has largely been offset by positive currency effects.
- ATO Gold Project's after-tax net present value ("NPV") is estimated at \$242 million at a 5% discount rate using a long term gold price of \$1,700 per ounce gold (\$1900 per ounce in the oxide phase), \$20 per ounce of silver, zinc price of \$2,500/t and lead price of \$1,970/t.

Mr. Bataa Tumur-Ochir, President and CEO, commented, "We are delighted to share the updated life of mine plan for the ATO Mine Fresh Rock phase, which showcases its potential to recover 1.24 million ounces of gold equivalent over a 12-year mine life, at 103,000 oz Au Eq per annum, through the Phase 2 expansion. Our ongoing success in oxide production solidifies our belief in the ATO Mine's expansion potential and strong economics, even under conservative metal prices.

To further enhance the Phase 2 Expansion, we are working on connecting to grid power, reducing construction and engineering costs, and continuing exploration to support future resources. We are confident that the ATO Mine will provide significant value to all stakeholders, with an estimated total gross revenue of \$2.2 billion over the next 14 years, including the remaining oxide phase, and operating cash flows after stream obligations of \$768 million.

The Company is making steady progress towards producing the first concentrates from the Phase 2 Expansion in the first quarter of 2025."

Mr. Matthew Wood, Executive Chairman, commented, "This very exciting update supports our expectation that the ATO Project will show expansion potential with solid revenues and competitive costs. We believe we can improve on gold recovery overall and anticipate more positive results following the exciting high grade base metal showings at ATO and further work at the Mungu deposit."

## ATO Mine Mineral Reserves and Resources

As at August 27, 2022, the ATO gold deposit contains combined proven and probable mineral reserves totaling 29.1 million tonnes ("Mt") at 1.13 g/t gold and 12.43 g/t silver, containing 1.1 million ounces of gold and 11.7 million ounces of silver. The reserves have been classified as approximately 59% proven and 41% probable on a tonnage basis. The mineral reserve within the 2022 reserve pit shell was based on a AuEq cut-off grade of 0.43 g/t AuEq for Fresh material and 0.40 g/t AuEq for Oxide material and revenue of \$1,700 per ounce gold, \$20 per ounce of silver, zinc price of \$2,500/t and lead price of \$1,970/t. as the price assumptions.

**Table 1.1 Mineral Reserve Statement - Effective Date August 27, 2022**

		Ore	Grade					Attributable Metal		
		kt	AuEq (g/t)	Au (g/t)	Ag (g/t)	Pb (%)	Zn (%)	AuEq (k oz)	Au (k oz)	Ag (k oz)
<b>Proven</b>										
	Oxide	1,159	1.14	0.70	9.50	0.44	0.36	43	26	355
	Transition	361	1.57	0.72	10.32	0.41	0.70	18	8	120
	Fresh	15,728	1.99	1.27	12.92	0.43	0.77	1,007	643	6,554
	<b>Total</b>	<b>17,247</b>	<b>1.92</b>	<b>1.22</b>	<b>12.64</b>	<b>0.43</b>	<b>0.74</b>	<b>1,068</b>	<b>677</b>	<b>7,029</b>
<b>Probable</b>										
	Oxide	905	0.92	0.56	6.71	0.43	0.34	27	16	196
	Transition	372	1.47	0.70	11.35	0.27	0.48	18	8	136
	Fresh	10,606	1.65	1.06	12.62	0.35	0.65	563	361	4,316
	<b>Total</b>	<b>11,883</b>	<b>1.59</b>	<b>1.01</b>	<b>12.13</b>	<b>0.36</b>	<b>0.62</b>	<b>608</b>	<b>385</b>	<b>4,648</b>
<b>Proven &amp; Probable</b>										
	Oxide	2,063	1.04	0.64	8.28	0.44	0.35	69	42	551
	Transition	733	1.52	0.71	10.84	0.34	0.59	36	17	256
	Fresh	26,334	1.85	1.18	12.80	0.40	0.72	1,571	1,004	10,870
	<b>Total</b>	<b>29,130</b>	<b>1.78</b>	<b>1.13</b>	<b>12.43</b>	<b>0.40</b>	<b>0.69</b>	<b>1,676</b>	<b>1,063</b>	<b>11,677</b>

### Notes:

1. Mineral Reserves estimate was based on Measured and Indicated Resource Estimate by R. Rankin, QP and effective August 27 2022.
2. ATO and Mungu Mineral Reserves are effective as of August 27, 2022.
3. Mineral Reserves are included in Mineral Resources.
4. Mineral Reserves are reported in accordance with JORC and CIM and NI 43-101 guidelines.
5. Ore dilution is estimated at 3% and ore loss is 2%.
6. Contained metal estimates have not been adjusted for metallurgical recoveries.
7. The open pit mineral reserves are estimated using a cut-off grade of 0.40 g/t AuEq for oxide material and 0.43 g/t AuEq for transition and fresh material.
8. Mineral Reserves are contained within an optimised pit shell based on a gold price of \$1,700 per ounce.

9. A conversion factor of 31.103477 grams per troy ounce and a conversion factor of 453.59237 grams per pound are used in the resource and reserves estimates.
10. AuEq has been calculated using the following metal prices: \$1,700/oz gold, \$20/oz silver, \$1,970/t lead, \$2,500/t zinc.
11. Totals may not match due to rounding.
12. The Mineral Reserves are stated as dry tonnes processed at the crusher.

As at August 27, 2022, the ATO gold deposit contains a combined measured and indicated mineral resource (inclusive of mineral reserves) of 38 Mt at 1.03 g/t gold and 15.58 g/t silver (1.3 million ounces of gold and 19.0 million ounces of silver) and an inferred mineral resource of 5.4 Mt at 0.62 g/t gold and 15.39 g/t silver.

**Table 1.2 Mineral Resource Statement - Effective Date August 27, 2022 (inclusive of Mineral Reserves)**

	Cut-off	Tonnes	Grades					Metal		
	AuEq		Au	Ag	Pb	Zn	AuEq	Au	Ag	AuEq
	(g/t)	(Mt)	(g/t)	(g/t)	(%)	(%)	(g/t)	(k oz)	(k oz)	(k oz)
<b>Measured</b>	0.38	21.6	1.17	16.38	0.40	0.71	1.85	811	11,370	1,287
<b>Indicated</b>	0.38	16.4	0.84	14.52	0.34	0.63	1.45	444	7,672	765
<b>Meas+Ind</b>	<b>0.38</b>	<b>38.0</b>	<b>1.03</b>	<b>15.58</b>	<b>0.37</b>	<b>0.68</b>	<b>1.68</b>	<b>1,255</b>	<b>19,042</b>	<b>2,052</b>
<b>Inferred</b>	<b>0.40</b>	<b>5.4</b>	<b>0.62</b>	<b>15.39</b>	<b>0.25</b>	<b>0.52</b>	<b>1.16</b>	<b>108</b>	<b>2,655</b>	<b>200</b>

In addition to depletion, the updated Resources are based on a revised interpolation of the base of transitional material. Down-hole depths of the base of predominant partial oxidation were reinterpreted in all drill holes by geologists on-site (in early 2022). This new interpretation formed the basis for a new base of transition grid surface. That surface was ~15 m higher than the previous surface, with the transitional layer now only ~4.5 m thick. In practice the previously modelled transitional surface was shown by geological observation in the pits to be too deep, and the transitional layer to be thinner than previously modelled.

New Resources were reported using the new transition surface, with the volumes in the ~15 m difference between the old and new surfaces now reporting with the fresh material.

### Phase 1 - ATO 1, 2 & 4 Oxide Reconciliation

The table below summarizes the Phase 1 production to date and the remaining Reserve.

**Table 1.3 Phase 1 Oxide Reconciliation (ATO1, 2 & 4)**

			Comments
2017 Mine Plan	kcoz	147	
2022 Mine Plan increase in Reserve	kcoz	14.9	
Total	kcoz	161.9	
Production to December 31, 2022	kcoz	78	
<b>Total</b>	<b>kcoz</b>	<b>83.9</b>	
Depleted Reserve December 31, 2022	kcoz	30.9	August 27, 2022 Oxide Reserve depleted to December 31, 2022
Gold remaining in the leach pad	kcoz	44.0	
Gold remaining ROM Stock Pile	kcoz	9.0	
<b>Total Gold Remaining</b>	<b>kcoz</b>	<b>83.9</b>	Phase 1 Oxide Ore remaining as December 31, 2022

### 2022 Reserves as of August 27, 2022

**All figures shown are after applying a 70% recovery**

## ATO Project LOM

The conversion of the Mineral Resource estimate to a Mineral Reserve estimate followed a conventional approach commencing with determination of the economic pit limits using the Deswik Pseudo Flow optimization software.

The approach used to identify the final economic pit limits for ATO was:

- apply A ROM marginal break-even cut-off grade calculation based on the latest revenue assumptions, cost estimation and metallurgical recoveries determined the economic marginal cut-off of to be 0.40 g/t AuEq for Fresh material and 0.43 g/t AuEq for Oxide material;
- identify any physical constraints to mining, for example, tenement boundaries, infrastructure, protected zones (flora, rivers, roads and road easements);
- define mining and processing costs as well as selling prices and costs;
- define the mining loss and dilution;
- define processing recoveries for Oxide and Fresh ore (includes beneficiation recoveries as well as leach recoveries);
- define the pit slope design parameters for each mining area and material type;
- import all above parameters, including geological model into the pit optimisation software;
- run pit optimization software to produce a series of nested pit shells at increasing product selling prices; and
- analyse results and select a preferred pit shell for each mining area for guidance in the pit designing process.

The selected ultimate pit outlines (shells) were used to create practical and detailed open pit designs accounting for the siting of in-pit ramps, berms, pumps, and haul roads. These pit designs then provided the bench-by-bench ore and waste mining inventories for the detailed production schedule that demonstrates viable open pit mining and provides the physical basis for cash flow modelling.

### Operating Cost Summary

LOM operating costs were calculated based on actual site costs. The summary of average LOM operating costs is listed in Table 1.4. These costs are shown in \$/tonne processed.

Phase 1 includes the existing heap leach operation that will produce gold bars during the remainder of 2023, 2024 and 2025. Phase 2 which includes the new processing plant that is expected to produce lead, zinc and pyrite concentrates from 2025 to 2036. Processing operating costs for Phase 2 are based on the 2021 feasibility study and updated for inflation as necessary.

**Table 1.4: Average Operating Costs (Phase 1 and 2 Combined)**

	Av. Annual Cost (USD M)	Cost / t ore processed (USD/t)	Total Cost LOM (M USD)
Mining	17.7	7.87	249
Processing	30.2	13.44	425
General Admin	12.2	5.50	174
<b>Total</b>	<b>60.1</b>	<b>26.81</b>	<b>848</b>

### Capital Cost Summary

The LOM capital cost estimate for is based on a 14 Year LOM Plan. ATO Phase 1 has been operating since 2020 and all Phase 1 infrastructure is in place.

The total estimated capital cost of the Phase 2 Expansion is \$128.5 million, which primarily consists of capital for the Phase 2 Process Plant and tailings dam. The capital estimate is based on the plant

design presented in the NI 43-101 Technical Report dated with an effective date of October 27, 2021.

**Table 1.5: ATO Capital Cost Summary**

	Total Capital (USD M)
Mining	1.8
Process Plant	75.2
Tailings/ reclaim water and water treatment	13.5
Power	1.7
Indirect	23.3
Owner's Cost	1.5
Contingency	11.5
<b>Total</b>	<b>128.5</b>

The \$1.8 million capital estimate for mining relates to the development of a new haul road from the pit to the Phase 2 Process Plant.

Indirect costs include design, procurement and construction management activities, vendor representatives, spare parts and first fills, and contractor's indirect costs.

#### Sustaining Capital

The sustaining capital requirements for the process plant includes the purchase of spare parts for equipment, and for replacement of equipment when required. An allowance of \$18 million has been included.

#### Mine Closure Provision

At the end of the Project life, it is required that all disturbed areas are rehabilitated, and equipment and buildings are disposed of. The closure and rehabilitation costs of \$5 million include the dismantling and removal of all facilities and services and re-vegetation of the area plus an allowance for contingency.

### NI 43-101 Technical Report

The technical report related to the LOM will be filed on SEDAR within 45 days, in accordance with National Instrument 43-101 ("NI 43-101"). The updated LOM has been prepared with input from the 2021 Feasibility Study.

The study has been prepared with input from the following independent consultants sources:

Update Mineral Resources	GeoRes
Update Mining, Mineral Reserves, Processing Plant and Infrastructure review, Economic Evaluation / Financial Modelling	Xenith Consulting
Geochemistry, Processing Plant and Infrastructure design	2021 Feasibility Study - DRA
Environmental and Social	2021 Feasibility Study- Ulzii Environmental LLC
Tailings Facilities, Hydrology and Tailings Facility Geotechnical	2021 Feasibility Study- Knight Piésold Pty Ltd

## **Qualified Persons & QA/QC**

The technical information contained in this news release relating to mineral reserve estimates of the ATO Gold Project is based on, and fairly represents, information compiled by Grant Walker, MAusIMM (CP). Mr. Walker is independent within the meaning of Canadian Securities Administrator's NI-43-101, as a full-time employee of Xenith Consulting. Mr. Walker has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which he is undertaking to qualify as a "Qualified Person" under NI 43-101 Standards of Disclosure for Mineral Projects. Mr. Walker has consented to the inclusion in this news release of the mineral reserve estimates based on his compiled information in the form and context in which it appears in this news release.

The Qualified Persons were not aware of any other factors, including environmental, title, economic, market or political, which could generally influence the Resources and Reserve reported here for the ATO Project. Factors that could alter the Resources & Reserve (but in all cases relatively insignificantly in the QP's view) were changes in grade cut-off; bulk density; gold equivalent (through variations in world metals prices); geological model; JORC classification; and mining method with depth (possibly a factor at the deeper Mungu where underground mining would be considered and which would have a higher-grade cut-off).

The technical information contained in this news release relating to the ATO Gold Project mineral resource estimates is based on, and fairly represents, information compiled by Robin Rankin MAusIMM (CP). Mr. Rankin is independent within the meaning of NI 43-101, as a full-time employee of Geores. Mr. Rankin has sufficient experience which is relevant to the style of mineralization and type of deposit under consideration and to the activity which he is undertaking to qualify as a "Qualified Person" under NI 43-101 Standards of Disclosure for Mineral Projects. Mr. Rankin has consented to the inclusion in this news release of the mineral resource estimates based on his compiled information in the form and context in which it appears in this news release.

All mineral reserve and resources have been estimated in accordance with the standards of the Canadian Institute of Mining, Metallurgy and Petroleum and NI 43-101.

The technical and geoscientific content of this news release has been compiled, reviewed and approved by Enkhtuvshin Khishigsuren, Vice President of Exploration of the Company and a Qualified Person as defined in NI 43-101.

## **NON-IFRS PERFORMANCE MEASUREMENT**

Non-IFRS Performance Measurement: All-in Sustaining Cost ("AISC") is a non-IFRS performance measurement. AISC is included because these statistics are widely accepted as the standard of reporting cash costs of production in North America. This performance measurement does not have a meaning within IFRS and, therefore, amounts presented may not be comparable to similar data presented by other mining companies. This performance measurement should not be considered in isolation as a substitute for measures of performance in accordance with IFRS.

## **About Steppe Gold**

Steppe Gold is Mongolia's premier precious metals company.

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Cautionary Note Regarding Forward-Looking Information

This news release contains "forward-looking information" within the meaning of applicable Canadian securities laws, which may include, but is not limited to, statements with respect to the future financial or operating performance of the Company and its projects. Often, but not always, forward-looking statements can be identified by the use of words such as "plans", "expects", "is expected", "estimates", "forecasts", "schedule", "believes", "anticipated" or variations (including negative variations) of such words and phrases, or state that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved, and includes information regarding the Company's estimates, expectations, forecasts, capital costs and other costs associated with the Company's projects and other information contained in this news release. Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to be materially different from any future results, performance or achievements expressed or implied by the forward-looking statements. Factors that could cause such differences include, but are not limited to, changes in business plans and strategies, market and capital finance conditions, changes in world commodity markets, currency fluctuations, costs and supply of materials relevant to the mining industry, change in government and changes to regulations affecting the mining industry. Forward-looking statements contained herein are made as of the date of this press release and the Company disclaims any obligation to update any forward-looking statements, whether as a result of new information, future events or results or otherwise. There can be no assurance that forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. The Company undertakes no obligation to update forward-looking statements if circumstances, management's estimates or opinions should change, except as required by securities legislation. Accordingly, the reader is cautioned not to place undue reliance on forward-looking statements.

*The Toronto Stock Exchange has not reviewed and does not accept responsibility for the adequacy or accuracy of the content of this news release.*



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