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**NYSE American and Toronto Stock Exchanges** 

# **NEWS**

# Vista Gold Announces Updated Preliminary Feasibility Study for the Mt Todd Gold Project with Increased After-Tax NPV<sub>5%</sub> of \$823 Million and IRR of 23.4%

**Denver, Colorado, September 10, 2019 -** Vista Gold Corp. ("Vista" or the "Company") (NYSE American and TSX: VGZ) today announced the positive results of an updated preliminary feasibility study (the "PFS") for its Mt Todd gold project ("Mt Todd" or the "Project") in Northern Territory, Australia. The PFS is based on the results of metallurgical optimization test work, a redesign of the fine grinding circuit, construction and ramp-up schedule changes and a comprehensive review of all aspects of the Project, including an independent benchmarking study of key PFS parameters. The process improvements have resulted in improved projected gold recovery and increased estimated gold production at Mt Todd. All dollar amounts stated herein are in United States currency and are expressed as \$ unless specified otherwise. References to A\$ are to Australian dollars.

Highlights of the PFS for a 50,000 tonne per day ("tpd") project include:

- After-tax NPV<sub>5%</sub> of \$823 million and IRR of 23.4% at a \$1,350 per ounce gold price and a \$0.70=A\$1.00 exchange rate (the "Base Case");
- After-tax NPV<sub>5%</sub> of \$1.15 billion and IRR of 30.3% at current prices and exchange rates (\$1,500 per ounce gold and \$0.685=A\$1.00 exchange rate);
- Unchanged proven and probable mineral reserves estimated to be 5.85 million ounces of gold (221.0 million tonnes at 0.82 grams of gold per tonne ("g Au/t")) at a cut-off grade of 0.40 g Au/t<sup>(1)</sup>;
- Improved estimated annual production of 413,400 ounces of gold per year over the life of the Project, including estimated average annual production of 495,100 ounces of gold per year during the first five years of commercial operations;
- Life of mine projected average cash costs of \$645 per ounce, including projected average cash costs of \$575 per ounce during the first five years of commercial operations (life of mine average all-in sustaining cost ("AISC") of \$746 per ounce, including average AISC of \$688 per ounce during the first five years of commercial operations);
- A projected 13-year mine life; and
- Estimated initial capital requirements of \$826 million.
  - (1) See "Cautionary Note to United States Investors" below.

Vista's President and CEO, Frederick H. Earnest, commented, "We believe the PFS has substantially de-risked Mt Todd. The metallurgical programs and process area design changes completed by Vista over the past months have confirmed our belief that Mt Todd can achieve excellent anticipated gold recoveries within an attractive operating cost profile. This work, combined with an independent review of capital and operating costs and development schedules, underpin our confidence that Mt Todd will become a major Australian gold producing project and provide a solid foundation to further advance the Project."

Mr. Earnest continued, "Vista's management believes the PFS reflects significant value creation through Vista's optimization and development work. We believe project economics are strong at assumed long-term gold prices and

quite compelling at today's market conditions. However, we do not believe Vista should develop Mt Todd on its own. The PFS gives us a solid basis for conversations with prospective development partners who we believe will recognize the value of Mt Todd and provide appropriate reward for Vista shareholders. To preserve the value of Mt Todd, we are prepared to hold the project until a time when the value of the Project appropriately rewards shareholders."

The PFS was authored by Tetra Tech Inc. ("Tetra Tech") with Mine Development Associates, Resource Development Inc., Proteus EPCM Engineers (a Tetra Tech Company, "Tetra Tech Proteus"), JDS Energy & Mining, Inc., and POWER Engineers, Inc.

Vista's senior management team is attending the Precious Metals Summit from September 10 to 13, 2019 in Beaver Creek, CO and the Denver Gold Forum from September 16 to 18, 2019 in Denver, CO, and will be available to discuss these results at both conferences. A conference call and webcast to discuss highlights of the PFS will be held Thursday, September 19, 2019 at 2:00 p.m. MDT. Call-in details are located at the end of this release.

Rex Bryan, Ph.D., Amy Hudson, Ph.D., April Hussey, P.E., Chris Johns, P.Eng., Guy Roemer, P.E., Vicki Scharnhorst, P.E., Erik Spiller and Keith Thompson on behalf of Tetra Tech, Thomas Dyer on behalf of Mine Development Associates, Dr. Deepak Malhotra on behalf of Resource Development Inc., Zvon Ponos on behalf of Tetra Tech Proteus, Jessica Monasterio, P.E. on behalf of JDS Energy & Mining, Inc., each an independent Qualified Person as defined by Canadian National Instrument 43-101 – *Standards of Disclosure of Mineral Projects* ("NI 43-101"), prepared or supervised the preparation of the information that forms the basis for the scientific and technical information disclosed herein and have reviewed this press release and consented to its release. Dr. Deepak Malhotra has verified the metallurgical testing program and data in respect of the process improvements. For additional information on data verification, quality assurance and control, key assumptions and other matters relating to the Project, see Vista's Annual Report Form 10-K as filed on SEDAR at www.sedar.com and on EDGAR at www.sec.gov/edgar.shtml on February 25, 2019.

#### Overview

An overview of the PFS is presented in the table below.

50,000 tpd Base Case	Years 1	1-5	Life of Mine (13 years)		
	Annual Average	Total	Annual Average	Total	
Average Plant Feed Grade (g Au/t)	0.96		0.82	2	
Payable Gold (000's ozs)	495	2,476	413	5,305	
Gold Recovery	92.3%	ó	91.9%		
Cash Costs (\$/oz)	\$575		\$64:	5	
AISC (\$/oz)	\$688	}	\$746		
Strip Ratio (waste:ore)	2.65		2.52		
Initial Capital (millions)	\$826				
After-tax Payback (production years)	2.9				
After-tax NPV <sub>5%</sub> (millions)	\$823				
IRR (after-tax)			23.4%		

Note: Economics presented using \$1,350/oz gold and a flat \$0.70 : A\$1.00 exchange rate and assumes deferral of certain territory tax obligations as well as realization of equipment salvage values at the end of the mine life.

# **Sensitivity Analysis**

The following table provides additional details of the Project's after-tax economics at variable gold prices and exchange rate assumptions.

Foreign	Gold Price											
Exchange	\$1,2	\$1,200		\$1,300		\$1,350		\$1,400		\$1,500		
(\$/ <b>A</b> \$)	IRR	NPV5%	IRR	NPV5%	IRR	NPV5%	IRR	NPV5%	IRR	NPV5%		
0.60	21.7%	\$686	26.4%	\$895	28.6%	\$994	30.8%	\$1,093	35.0%	\$1,297		
0.65	19.2%	\$603	23.7%	\$807	25.9%	\$911	28.0%	\$1,011	32.2%	\$1,209		
0.70	16.8%	\$521	21.2%	\$718	23.4%	\$823	25.5%	\$927	29.6%	\$1,126		
0.75	14.6%	\$436	18.9%	\$634	20.9%	\$733	23.1%	\$839	27.1%	\$1,043		
0.80	12.5%	\$351	16.7%	\$553	18.7%	\$650	20.7%	\$749	24.7%	\$954		

Note: Changes in foreign exchange rates are only applied to operating costs and not applied to either initial or sustaining capital costs.

# **Capital Costs**

Key capital expenditures for initial and sustaining capital requirements are identified in the following table.

Capital Expenditures (000s) 50,000 tpd Base Case	Initial Capital	Sustaining Capital		
Mining	\$121,239	\$406,347		
Process Plant	\$366,693	\$17,027		
Project Services	\$109,204	\$72,448		
Project Infrastructure	\$26,220	\$0		
Site Establishment & Early Works	\$17,537	\$0		
Management, Engineering, EPCM Services	\$82,058	\$0		
Preproduction Costs	\$16,121	\$0		
Contingency	\$86,641	\$40,354		
Sub-Total Sub-Total	\$825,712	\$536,176		
Asset Sale and Salvage	\$0	(\$139,631)		
Total Capital	\$825,712	\$396,545(1)		
Total Capital Per Payable ounce gold	\$156	\$75(1)		

Notes: may not add due to rounding.

# **Operating Costs**

Operating Cost 50,000 tpd Base Case	First 5	Years	Life of Mine Cost		
-	Per tonne processed	Per ounce	Per tonne processed	Per ounce	
Mining	\$6.51	\$233.60	\$6.02	\$250.90	
Processing	\$7.82	\$280.78	\$7.88	\$328.48	
Site General and Administrative	\$1.07	\$38.57	\$1.11	\$46.43	
Jawoyn Royalty	\$0.38	\$13.50	\$0.32	\$13.50	
Water Treatment	\$0.07	\$2.35	\$0.08	\$3.53	
Tailings Management	\$0.08	\$2.71	\$0.07	\$3.07	
Refining Costs	\$0.09	\$3.20	\$0.08	\$3.22	
Power Credit	\$0.00	\$0.00	\$-0.10	\$-3.99	
Total Cash Costs	\$16.01	\$574.71	\$15.48	\$645.14	

Note: Jawoyn Royalty and refinery costs calculated at \$1,350 per ounce gold. May not add due to rounding.

<sup>(1)</sup> Net of asset sales.

#### **Mining and Production**

The mine plan contemplates that 221.0 million tonnes of ore containing an estimated 5.85 million ounces of gold at an average grade of 0.82 g Au/t to be processed over the 13-year operating life of the Project. Total recovered gold is expected to be 5.3 million ounces. Average annual gold production over the life of the Project is expected to be 413,400 ounces, averaging 495,100 ounces during the first five years of commercial operations, with 608,600 ounces produced in the first year of commercial operation. Commercial production is anticipated to begin after two years of construction and six months of commissioning and ramp-up.

The table below highlights the PFS production schedule.

Years	Ore Mined	Waste Mined	Strip	Milled Ore	Milled	Contained	Mill
	(kt)	(kt)	Ratio	(kt)	Grade	Ounces	Production
			(W:O)		(g/t)	(kozs)	(kozs)
-1	2,859	8,802	3.08	=	-	-	-
1	16,138	10,498	0.65	12,461	1.17	469	430
2	15,613	47,536	3.04	17,750	0.85	482	438
3	24,495	32,880	1.34	17,799	1.04	593	541
4	15,586	76,531	4.91	17,750	0.70	399	360
5	29,852	58,085	1.95	17,750	1.10	629	574
6	8,984	87,011	9.69	17,750	0.78	446	404
7	7,178	68,218	9.50	17,799	0.52	298	264
8	13,482	56,598	4.20	17,750	0.61	297	266
9	18,750	42,935	2.29	17,750	0.70	397	358
10	28,653	29,747	1.04	17,750	0.93	528	481
11	25,970	4,148	0.16	17,799	1.18	674	618
12	127	0	0	17,750	0.65	371	334
13	-	-	-	15,805	0.52	265	237
Total	207,687	522,990	2.52	221,041	0.82	5,848	5,305

Note: May not add due to rounding. Total milled ore includes material from the heap leach pad that is planned to be processed at the end of the mine life.

#### **Project Mineral Resources and Reserves**

The table below presents the estimated mineral resources and reserves for the Project. The effective date of the Batman and Quigleys deposits mineral resource estimates is January 24, 2018. The effective date of the heap leach mineral resource estimate is July 9, 2014.

Mt. Todd Gold Project Mineral Reserves – 50,000 tpd, 0.40 g Au/t cut-off and \$1,250 per ounce gold												
	Batman Deposit			Heap Leach Pad			Quigleys Deposit			Total		
			Contained			Contained			Contained			Contained
	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces	Tonnes	Grade	Ounces
	(000s)	(g/t)	(000s)	(000s)	(g/t)	(000s)	(000s)	(g/t)	(000s)	(000s)	(g/t)	(000s)
Proven	72,672	0.88	2,057	-	-	-	-	-	-	72,672	0.88	2,057
Probable	135,015	0.82	3,559	13,354	0.54	232	-	-	-	148,369	0.79	3,791
Proven & Probable	207,687	0.84	5,616	13,354	0.54	232	-	-	-	221,041	0.82	5,848

#### Mt. Todd Gold Project Mineral Resources

	В	Batman Deposit			Heap Leach Pad			Quigleys Deposit			Total		
	Tonnes (000s)	Grade (g/t)	Contained Ounces (000s)	Tonnes (000s)	Grade (g/t)	Contained Ounces (000s)	Tonnes (000s)	Grade (g/t)	Contained Ounces (000s)	Tonnes (000s)	Grade (g/t)	Contained Ounces (000s)	
Measured	77,725	0.88	2,191	-	-	-	457	1.27	19	78,182	0.88	2,210	
Indicated	200,112	0.80	5,169	13,354	0.54	232	5,743	1.12	207	219,209	0.80	5,608	
Measured & Indicated	277,837	0.82	7,360	13,354	0.54	232	6,200	1.13	225	297,391	0.82	7,818	
Inferred	61,323	0.72	1,421	-	-	_	1,600	0.84	43	62,923	0.72	1,464	

Note: Measured & indicated mineral resources include proven and probable mineral reserves. Batman and Quigleys mineral resources are quoted at a 0.40g Au/t cut-off grade. Heap Leach mineral resources are the average grade of the heap, no cut-off grade applied. Economic analysis conducted only on proven and probable mineral reserves. Rex Bryan of Tetra Tech is the Qualified Person responsible for the geologic mineral resource estimates. Thomas Dyer of Mine Development Associates is the Qualified Person responsible for developing mineral reserves for the Batman deposit. Dr. Deepak Malhotra of Resource Development Inc. is the Qualified Person responsible for the metallurgical data and program, and for developing mineral reserves for the heap leach. See "Cautionary Note to United States Investors" below.

#### **Project Description**

Gold mineralization in the Batman Deposit at the Project occurs in sheeted veins within silicified greywackes/shales/siltstones. The Batman deposit strikes north-northeast and dips steeply to the east. Higher grade zones of the deposit plunge to the south. The core zone is approximately 200-250 meters wide and 1.5 kilometers long, with several hanging wall structures providing additional width to the deposit. Mineralization is open at depth as well as along strike, although the intensity of mineralization weakens to the north and south along strike.

The Project is designed to be a conventional, owner-operated, open-pit mining operation that will utilize large-scale mining equipment in a drill/blast/load/haul operation. Ore is planned to be processed in a comminution circuit consisting of a gyratory crusher, two cone crushers, two high pressure grinding roll crushers, and primary grinding by two ball mills and secondary grinding by 10 FLSmidth VXP mills. Vista plans to recover gold in a conventional carbon-in-pulp recovery circuit.

# Metallurgy, Processing and Infrastructure

Vista has completed extensive metallurgic test work that was announced in press releases dated August 2, 2018, January 9, 2019, April 8, 2019, May 29, 2019, and August 13, 2019.

Vista's recent metallurgic test programs confirmed: (1) the efficiency of ore sorting across a broad range of head grades and the natural concentration of gold in the screen undersize material prior to sorting; (2) the efficiency of fine grinding and improved gold leach recoveries at an 80% passing grind size of 40 microns; and (3) the selection of FLSmidth VXP mill as the preferred fine-grinding mill.

# Benchmarking

Vista retained GR Engineering Services of Perth, Australia to undertake a benchmarking study to assess the appropriateness of capital and operating cost estimates, construction and ramp-up schedules, owner's costs and key components of the Project, such as power supply. Vista has given thorough consideration to this study, resulting in important changes to the costs and schedule of the Project.

#### **Opportunities for Adding Value**

In addition to the mineral reserves at the Batman Deposit, we estimate measured and indicated resources of 1.7 million ounces gold (70.2 million tonnes at 0.77 g Au/t) and inferred resources of 1.4 million ounces gold (61.3 million tonnes at 0.72 g Au/t). A portion of the inferred resources are contained within the existing pit design and are currently included in the mine plan as waste material. Additional resources are predominantly at depth and lateral along strike. Potential to convert part of the mineral resources to reserves represents an opportunity to improve existing LOM economics and extend mine life.

The Company also has known mineral resources at the Quigleys Deposit, which is close to the planned processing plant. The estimated grade of the Quigleys Deposit is higher than the estimated average grade of the Batman Deposit and could provide a source of higher-grade feed in the mid years of the Project when higher stripping is encountered and the average grade of feed to the plant is expected to decrease. Additional drilling and metallurgical testing are required to develop mine plans and ultimately convert part of the Quigleys resource to proven or probable reserves.

Growth through exploration represents additional opportunity to add value at Mt Todd. Both the Batman Deposit and Quigleys Deposit remain open. In addition, Vista controls over 1,100 sq. km of contiguous exploration licenses at the southeast end of the Pine Creek Mining District. Various gold targets have been identified through early-stage, grass roots exploration programs along the Cullen-Australis and Batman-Driffield structural corridors, the latter of which is the host to the Batman Deposit. To-date, Vista's exploration efforts have primarily focused on the Batman Deposit.

The PFS uses a natural gas price derived from east coast gas pricing. The Company believes that there would be a significant opportunity to achieve a lower gas price upon commitment to a long-term gas delivery contract. This belief is in part based on local expectations of significantly increased gas reserves in the Beetaloo Basin south of the Mt Todd project. The Company is also considering additional optimization of the power plant.

## **Conference Call Details**

A conference call and webcast to discuss highlights of the PFS will be held Thursday, September 19, 2019 at 2:00 p.m. MDT.

Toll-free in North America: 844-898-8648

International: 647-689-4225 Confirmation Code: 2416449

This call will also be web-cast and can be accessed at the following web location:

http://event.on24.com/r.htm?e=2087023&s=1&k=D1D1D87054C6B0E6EBDA948F2FB3BC32

This call will be archived and available at <a href="www.vistagold.com">www.vistagold.com</a> after September 19, 2019. Audio replay will be available for 14 days by calling toll-free in North America: 855-859-2056.

# **Detailed Report**

An NI 43-101 compliant technical report will be filed on SEDAR and EDGAR within 45 days of the date hereof and will be available on our website at that time. As part of the sensitivity analysis of the Project, Vista intends to complete and present the results of an alternate 33,000 tpd project as part of the technical report.

#### About Vista Gold Corp.

The Company is a well-funded gold project developer. Our principal asset is our flagship Mt Todd gold project in Northern Territory, Australia. Mt Todd is the largest known undeveloped gold project in Australia.

For further information, please contact Pamela Solly, Vice President of Investor Relations, at (720) 981-1185.

For more information about our projects, including technical studies and mineral resource estimates, please visit our website at www.vistagold.com.

#### **Forward Looking Statements**

This press release contains forward-looking statements within the meaning of the U.S. Securities Act of 1933, as amended, and U.S. Securities Exchange Act of 1934, as amended, and forward-looking information within the meaning of Canadian securities laws. All statements, other than statements of historical facts, included in this press release that address activities, events or developments that Vista expects or anticipates will or may occur in the future, including such things as, the Company's continued work on the Mt Todd gold project; that process improvements will result in lower operating costs, reduced power consumption, increased gold recovery and higher gold production; estimates of mineral reserves and resources; projected project economics, including anticipated production, average cash costs, before and after-tax NPV, IRR, capital requirements and expenditures, gold recovery after-tax payback, operating costs, average tonne per day milling, mining methods procedures, estimated gold recovery, project design, and life of mine; that the Project is an advanced stage development project; average annual production overtime; commencement of commercial production; timing for construction and commissioning; exploration of new deposits at Mt Todd and the surrounding exploration areas; size of final product through the high pressure grinding roll crusher; potential costs or savings related to gas price; ability to convert Quigleys estimated mineral resources to proven or probable mineral reserves; grade of minerals at the Quigleys deposit; ability to add higher grade feed from the Quigleys deposit to the Project in its mid years; timing for and completion of the NI 43-101 technical report for the PFS; and other such matters are forward-looking statements and forward-looking information. The material factors and assumptions used to develop the forward-looking statements and forward-looking information contained in this press release include the following: the accuracy of the results of the PFS, mineral resource and reserve estimates, and exploration and assay results; the terms and conditions of our agreements with contractors and our approved business plan; the anticipated timing and completion of a feasibility study on the Project; the anticipated receipt of required permits; no change in laws that materially impact mining development or operations of a mining business; the potential occurrence and timing of a production decision; the anticipated gold production at the Project; the life of any mine at the Project; all economic projections relating to the Project, including estimated cash cost, NPV, IRR, and initial capital requirements; and Vista's goal of becoming a gold producer. When used in this press release, the words "optimistic," "potential," "indicate," "expect," "intend," "plans," "hopes," "believe," "may," "will," "if," "anticipate," and similar expressions are intended to identify forward-looking statements and forward-looking information. These statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of Vista to be materially different from any future results, performance or achievements expressed or implied by such statements. Such factors include, among others, uncertainty of mineral resource estimates, estimates of results based on such mineral resource estimates; risks relating to cost increases for capital and operating costs; risks related to the timing and the ability to obtain the necessary permits, risks of shortages and fluctuating costs of equipment or supplies; risks relating to fluctuations in the price of gold; the inherently hazardous nature of mining-related activities; potential effects on Vista's operations of environmental regulations in the countries in which it operates; risks due to legal proceedings; risks relating to political and economic instability in certain countries in which it operates; as well as those factors discussed under the headings "Note Regarding Forward-Looking Statements" and "Risk Factors" in Vista's Annual Report Form 10-K as filed in February 2019 and other documents filed with the U.S. Securities and Exchange Commission and Canadian securities regulatory authorities. Although Vista has attempted to identify important factors that could cause actual results to differ materially from those described in forward-looking statements and forward-looking information, there may be other factors that cause results not to be as anticipated, estimated or intended. Except as required by law, Vista assumes no obligation to publicly update any forward-looking statements or forward-looking information; whether as a result of new information, future events or otherwise.

# **Cautionary Note to United States Investors**

The United States Securities and Exchange Commission ("SEC") limits disclosure for U.S. reporting purposes to mineral deposits that a company can economically and legally extract or produce. This press release uses the terms "Proven reserves" and "Probable reserves". Reserve estimates contained in this press release are made pursuant to NI 43-101 standards in Canada and do not represent reserves under the standards of the SEC's Industry Guide 7 and may not constitute reserves under the SEC's newly adopted disclosure rules to modernize mineral property disclosure requirements, which became effective February 25, 2019 and will be applicable to the Company in its annual report for the fiscal year ending December 31, 2021. Under the currently applicable SEC Industry Guide 7 standards, a "final" or "bankable" feasibility study is required to report reserves, the three-year historical average price is used in any reserve or cash flow analysis to designate reserves and all necessary permits and government approvals must be filed with the appropriate governmental authority. Additionally, this press release uses the terms "Measured resources", "Indicated resources", and "Measured & Indicated resources". We advise U.S. investors that while these terms are Canadian mining terms as defined in accordance with NI 43-101, such terms are not recognized under SEC Industry Guide 7 and normally are not permitted to be used in reports and registration statements filed with the SEC. Mineral resources described in this press release have a great amount of uncertainty as to their economic and legal feasibility. 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 measures. The term "contained gold ounces" used in this press release is not permitted under the rules of the SEC. "Inferred 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 any or all part of an Inferred resource will ever be upgraded to a higher category. U.S. Investors are cautioned not to assume that any part or all of mineral deposits in these categories will ever be converted into SEC Industry Guide 7 reserves.