



Solitario Expands Its Exploration Activities to Include Precious Metals; Acquires Gold Coin Property in Arizona; and, Establishes ATM Equity Program

DENVER, CO – February 2, 2021 - Solitario Zinc Corp. (“Solitario”) (NYSE American: XPL; TSX: SLR) is pleased to announce that it has acquired an option-to-buy a 100% interest in the Gold Coin Property in southeastern Arizona. Gold Coin hosts significant surface gold values over an area in excess of 400 acres. The property has never been drilled to depths greater than 20 meters (60 feet). Work to date has identified five potential target areas for drilling. In addition, a second property, the Texas-Arizona, contains polymetallic mineralization (copper-lead-zinc-silver-gold) is included in the Gold Coin option agreement.

Geologically, Gold Coin is a low-sulfidation system hosted primarily in low-angle thrust faults that offset Paleozoic carbonate and Tertiary volcanic rocks. Gold occurs in oxidized rocks with associated quartz-hematite alteration and siliceous hydrothermal breccias which appear to be distal to the Courtland-Gleeson base metal system of the Turquoise District. Historical rock chip sampling (collected before NI 43-101 protocols) was conducted by several companies since the 1990’s in trenches, prospect pits and outcrops ([see this link](#)). Out of 197 chip samples, 53 contain greater than 350 ppb gold, with the overall average of these 53 samples containing 3.2 grams per tonne gold, with slightly higher grades of silver. Limited surface sampling conducted by Solitario has confirmed historical surface values in several areas. A geologic team is currently in the field continuing to confirm historical values and extending the footprint of gold mineralization, as well as conducting geologic mapping to further develop drill targets.

Chris Herald, President and CEO of Solitario commented, “We are excited to be re-entering the precious metals exploration space with the addition of the Gold Coin project. Gold Coin represents an untested gold system that displays widespread and strong gold values at surface. Arizona is an excellent mining jurisdiction that can be worked year-round. We look forward to reporting progress at Gold Coin as well as potential new gold acquisitions.

With the unprecedented, planned stimulus spending throughout the world due to Covid-19, we believe zinc is exceptionally well positioned for years of increased demand related to infrastructure spending. Accordingly, we anticipate our two zinc assets, being our interests in the large high-grade Florida Canyon and Lik projects, as managed by our partners, will remain our core assets. In addition, we want to take advantage of our in-house wealth of experience in the precious metal arena and believe we can add shareholder value by acquiring and advancing gold and silver assets, as we believe precious metals will benefit as a store of value as countries expand their currencies to fund the stimulus. Historically, our technical team has discovered in excess of five million ounces of gold in the United States and we previously have sold two gold assets for a total of approximately US\$250 million in two separate transactions in 2006 (Buckhorn Mountain gold deposit in Washington State) and 2015 (Mt. Hamilton gold deposit in Nevada).”

Terms of the Gold Coin option agreement include scheduled payments to the underlying owner of \$12,000 upon signing (paid), \$15,000 at the first anniversary date, with a total of \$242,000 over a five-year period. Solitario has agreed to escalating work commitments totaling \$1,025,000 during the first four years, with the first year totaling \$75,000. The underlying owner will retain a 2.0% Net Smelter Return Royalty. Solitario will have the option, but not obligation, to reduce the Net Smelter Return Royalty to 1.0% by paying the owner \$1.0 million.

Mr. Walt Hunt, COO for Solitario Zinc Corp., has reviewed and is responsible for the technical aspects of this press release concerning the Gold Coin property. He is a qualified person as defined by National Instrument 43-101.

Solitario Establishes ATM Equity Program

Solitario is also pleased to announce that it has entered into an at the market offering agreement (the “ATM Offering Agreement”) with H.C. Wainwright & Co., LLC (the “Agent”), establishing an at-the-market equity program (the “ATM Program”). Pursuant to ATM Program, Solitario may, from time-to-time issue and sell shares of Company common stock (“Common Shares”) to the public through the Agent on the NYSE American stock exchange. By definition, the offering price of shares sold in an ATM offering is based on a price in line with the current market price of the security. Solitario will determine, at its sole discretion, the timing and number of Common Shares to be sold. Solitario intends to use the net proceeds of any sales of Common Shares under the ATM Program primarily for operational expenditures, to maintain Solitario’s working capital balances and for general corporate purposes. Solitario is not obligated to make any sales of Common Shares under the ATM Offering Agreement.

In conjunction with the ATM Program, Solitario filed with the U.S. Securities and Exchange Commission (the “SEC”) a prospectus supplement, qualifying the offer and sale of Common Shares having an aggregate offering price of up to US\$9 million for the ATM Program (the “Prospectus Supplement”). Solitario previously filed a base shelf registration statement on Form S-3 (the “Registration Statement”) with the SEC dated October 8, 2020, qualifying the offer and sale of Common Shares having an aggregate offering price of up to US\$12 million.

Under the ATM Program, no Common Shares will be sold on the Toronto Stock Exchange (“TSX”) or other markets in Canada. Solitario relied on the exemption set forth in Section 602.1 of the TSX Company Manual, which provides that the TSX will not apply its standards to certain transactions involving eligible interlisted issuers on a recognized exchange, such as the NYSE American. The offering of Common Shares pursuant to the ATM Offering Agreement and the Prospectus Supplement will terminate upon the earlier of (a) the sale of all of the Common Shares subject to the ATM Offering Agreement and the Prospectus Supplement, (b) the termination of the ATM Offering Agreement by the Agent, or Solitario, as permitted therein, or (c) October 7, 2024, being the date the Registration Statement expires. Solitario will pay the Agent a commission rate of up to 3.0% of the aggregate gross proceeds from each sale of Common Shares and has agreed to provide the Agent with customary indemnification and contribution rights. Subject to certain limitations, Solitario will also reimburse the Agent for certain specified expenses in connection with entering into the ATM Offering Agreement.

A copy of the Registration Statement and the accompanying Prospectus Supplement are available on EDGAR at www.sec.gov or may be obtained upon request to Solitario’s Investor Relations Department using contact information set out below. You may get these documents for free by visiting EDGAR on the SEC web site at www.sec.gov or from the Agent: H.C. Wainwright & Co., LLC, 430 Park Avenue 3rd Floor, New York, NY 10022, telephone: (646) 975-6996, email: placements@hcwco.com.

This press release does not constitute an offer to sell or the solicitation of an offer to buy securities, nor will there be any sale of the securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of any such jurisdiction.

About Solitario

Besides its newly acquired Gold Coin property, Solitario is an emerging zinc exploration and development company traded on the NYSE American (“XPL”) and on the Toronto Stock Exchange (“SLR”). Solitario holds 50% joint venture interest (Teck Resources 50%) in the high-grade, open-pitable Lik zinc deposit in Alaska and a 39% joint venture interest (Nexa Resources holds the remaining 61% interest) on the high-grade Florida Canyon zinc project in Peru. Solitario’s Management and Directors hold approximately 9.6% (excluding options) of the Company’s 58.1 million shares outstanding. Solitario’s cash balance and marketable securities stand at approximately US\$7.9 million. Additional information about Solitario is available online at: www.solitariozinc.com.

For More Information Please Contact:

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Cautionary Statement Regarding Forward Looking Information

This press release also contains forward-looking statements within the meaning of the U.S. Securities Act of 1933 and the U.S. Securities Exchange Act of 1934, and as defined in the United States Private Securities Litigation Reform Act of 1995 (and the equivalent under Canadian securities laws), that are intended to be covered by the safe harbor created by such sections. Forward-looking statements are statements that are not historical fact. They are based on the beliefs, estimates and opinions of the Company's management on the date the statements are made and address activities, events or developments that Solitario expects or anticipates will or may occur in the future, and are based on current expectations and assumptions. Forward-looking statements involve a number of risks and uncertainties. Consequently, there can be no assurances that such statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements. Such forward-looking statements include, without limitation, statements regarding the Company's expectation of the projected timing and outcome of engineering studies; expectations regarding the receipt of all necessary permits and approvals to implement a mining plan, if any, at Gold Coin, Lik or Florida Canyon; the potential for confirming, upgrading and expanding zinc, lead, silver and gold mineralized material; future operating and capital cost estimates may indicate that the stated resources may not be economic; estimates of zinc, lead and silver grades of resources provided are predicted and actual mining grade could be substantially lower; estimates of recovery rates for could be lower than estimated for establishing the cutoff grade; and other statements that are not historical facts could vary significantly from assumptions made in the PEA. Although Solitario management believes that its expectations are based on reasonable assumptions, it can give no assurance that these expectations will prove correct. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, among others, risks relating to risks that Solitario's and its joint venture partners' exploration and property advancement efforts will not be

successful; risks relating to fluctuations in the price of zinc, lead and silver; the inherently hazardous nature of mining-related activities; uncertainties concerning reserve and resource estimates; availability of outside contractors, and other activities; uncertainties relating to obtaining approvals and permits from governmental regulatory authorities; the possibility that environmental laws and regulations will change over time and become even more restrictive; and availability and timing of capital for financing the Company's exploration and development activities, including uncertainty of being able to raise capital on favorable terms or at all; as well as those factors discussed in Solitario's filings with the U.S. Securities and Exchange Commission (the "SEC") including Solitario's latest Annual Report on Form 10-K and its other SEC filings (and Canadian filings) including, without limitation, its latest Quarterly Report on Form 10-Q. The Company does not intend to publicly update any forward-looking statements, whether as a result of new information, future events, or otherwise, except as may be required under applicable securities laws.