

Solitario Exploration & Royalty Corp. (“Solitario”; NYSE MKT: XPL; TSX: SLR) is pleased to announce that its joint venture partner, Minera Milpo (“Milpo”), has elected to participate in the development and funding of a Preliminary Economic Assessment (“PEA”) on the Bongará high-grade zinc deposit in northern Peru. Completion of the PEA is expected by the end of the second quarter 2017. Currently, Solitario owns 39% of the Bongará project and Milpo owns 61%.

In January 2017, Solitario engaged SRK Consulting (U.S.), Inc. (“SRK”), an independent and internationally recognized mining engineering firm, to complete a PEA for the Bongará project. Chris Herald, President and CEO of Solitario, stated, “We are delighted that Milpo will collaborate on Bongará’s maiden PEA. We believe that Milpo’s support and operational experience in Peru will strengthen the technical aspects of the study. We are excited about Bongará’s economic potential and look forward to the completion of this report.”

A total of 486 core holes (117,280 meters) have been drilled on the project. Work to date has demonstrated that Bongará is a high-grade zinc deposit with an average resource grade in excess of 12% zinc equivalent. The project has a relatively large resource base with excellent expansion potential, and produces a clean high-grade zinc sulfide concentrate. SRK previously prepared a NI 43-101 Technical Report on Resources for the Bongará Project in 2014.

This release has been reviewed for accuracy by Walter Hunt, Chief Operating Officer of Solitario, a “qualified person” as that term is defined in NI 43-101.

Terms of the Bongará Joint Venture

Since inception of the Bongará joint venture in 2006, the Brazilian conglomerate Votorantim and its subsidiary, Milpo, have funded 100% of project expenditures. Milpo can earn a 70% interest in the project by continuing to fund all project expenditures (except this PEA, which is 50%/50% funded by Solitario and Milpo and does not alter any of the terms of the joint venture) and committing to place the project into production based upon a positive feasibility study. After earning 70%, and at the request of Solitario, Milpo has further agreed to finance Solitario’s 30% participating interest for construction. Solitario will repay the loan facility through 50% of its net cash flow distributions.

About Solitario

Solitario is an exploration and royalty company traded on the NYSE MKT (“XPL”) and on the Toronto Stock Exchange (“SLR”). Solitario has a joint venture with Milpo on its high-grade Bongará zinc project in Peru and a 9.97% equity interest in Vendetta Mining. Solitario’s Management and Directors hold approximately 7.6% (excluding options) of the Company’s 38.7 million shares outstanding. Solitario’s cash balance and marketable securities at December 31, 2016 was approximately US\$16 million. Additional information about Solitario is available online at www.solitarioxr.com

Cautionary Statement Regarding Forward Looking Information

This press release 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 Bongará; the potential for confirming, upgrading and expanding zinc, lead and silver mineralized material at Bongará; future operating and capital cost estimates may indicate that the stated resources may not be economic; estimates of zinc, lead and silver grades provided are not diluted mining grades and the predicted or actual mining grade could be substantially lower; estimates of recovery rates for the three types of mineralization, sulfide, oxide and mixed could be lower than estimated for establishing the cutoff grade; and other statements that are not historical facts; risks associated with our funding partner’s (Votorantim Metais and/or Milpo) ability to finance continued development and potential construction of the Bongará project. Important factors that could cause actual results to differ materially from those in the forward-looking statements include, among others, risks relating to fluctuations in the price of zinc; the inherently hazardous nature of mining-related activities; uncertainties concerning reserve and resource estimates; uncertainties relating to obtaining approvals and permits from governmental regulatory authorities and country risks of operations outside of the United States; 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.

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