



Solitario Intersects 12.4 Meters Grading 15.1% Zinc Equivalent at Florida Canyon, Peru

DENVER, CO – September 16, 2019 - **Solitario Zinc Corp.** (“Solitario”) (NYSE American: **XPL**; TSX: **SLR**) is pleased to provide an update on the continuing 2019 drilling program on its Florida Canyon zinc project in Peru. The highlight of this round of drilling was drill hole PEBGD-000015 that intersected 12.4 meters grading 15.1% zinc-equivalent (“Zn-Eq”). The Florida Canyon high-grade zinc project located in northern Peru is joint ventured with the world’s fourth largest zinc miner, Nexa Resources S.A. (NYSE: NEXA; TSX: NEXA) (“Nexa”).

Drill hole PEBGD-000015 was important in extending the San Jorge high-grade zone an additional 90 meters to the south. Within the 12.4-meter interval grading of 15.1% Zn-Eq, two higher-grade zones averaged approximately 20% Zn-Eq over 3.6 and 4.6 meters respectively. Results reported within this news release (see table below) are for drill holes PEBGD-000011 to 000023. Five of the thirteen holes reported in this release did not intersect significant mineralization. Three core rigs continue to drill on the project and are expected to complete the program by late-October.

Highlights of Florida Canyon Drilling Results

Drill Hole Number	From (m)	To (m)	Interval (m)	Zinc (%)	Lead (%)	Silver (g/t)	Zinc-Eq* (%)
PEBGD-000011	314.8	316.0	1.2	12.5	15.5	30.8	26.0
	352.6	353.2	0.6	29.6	0.0	39.8	30.5
PEBGD-000012	49.7	50.2	0.5	36.0	8.6	57.4	44.4
	163.3	163.9	0.6	36.4	10.3	179.0	48.8
PEBGD-000015	399.9	400.5	0.6	39.0	0.0	24.3	39.5
	435.3	447.7	12.4	14.9	0.0	8.9	15.1
including	437.0	440.6	3.6	20.2	0.0	6.8	20.3
including	443.1	447.7	4.6	19.3	0.0	16.6	19.7
PEBGD-000017	96.1	96.8	0.7	31.3	0.0	21.0	31.8
PEBGD-000019	302.1	305.0	3.0	9.6	1.6	21.1	11.4
PEBGD-000021	431.7	432.8	1.1	3.7	1.0	4.66	4.6
PEBGD-000022	285.3	287.2	1.9	25.0	0.7	8.9	25.8
PEBGD-000023	561.3	562.9	1.6	12.2	0.0	14.5	12.5

*Zn-Eq was calculated using the following price assumptions: Zn=\$1.10/lb., Pb=\$0.91lb., Ag=\$16.50/oz. Reported intervals are estimated to be at least 80% of the true thickness
Numbers in this table may not add exactly as numbers have been rounded to the nearest decimal

Chris Herald, President and Chief Executive Officer of Solitario, commented, “We remain encouraged that the majority of drill holes have intersected mineralization. The program continues to focus on near-vertical replacement bodies that can be high-grade and large-tonnage. We anticipate reporting assay results for another 15 drill holes over the next couple months.”

Drill hole information contained within this release is reported under Nexa’s quality control program reviewed by Mr. Walt Hunt, COO for Solitario Zinc Corp., who is a qualified person as defined by

National Instrument 43-101. Samples are derived from 50% splits of HQ and NQ (2.5 and 1.9 inch) diameter core. Samples are then shipped via secured third-party land transportation companies and analyzed by ALS Chemex Inc., in Lima, Peru.

Terms of the Florida Canyon Joint Venture

Solitario owns a 39% interest and Nexa owns a 61% indirect interest in the Florida Canyon project. Nexa can earn a 70% interest in the Florida Canyon project by continuing to fund all project expenditures and committing to place the project into production based upon a positive feasibility study. After earning 70%, and at the request of Solitario, Nexa has further agreed to finance Solitario's 30% participating interest for construction through a project loan. Solitario will repay the loan facility through 50% of its net cash flow distributions from production.

About Solitario

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 in the high-grade, open-pit table 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 also holds a 9.9% equity interest in Vendetta Mining. Solitario’s Management and Directors hold approximately 9.3% (excluding options) of the Company’s 58.1 million shares outstanding. Solitario’s cash balance and marketable securities stand at approximately US\$9.2 million. Additional information about Solitario is available online at www.solitariozinc.com

FOR MORE INFORMATION ABOUT SOLITARIO, CONTACT:

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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 Lik or Florida Canyon; the potential for confirming, upgrading and expanding zinc, lead and silver 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.