



## News Release

### **Alexco and Silver Wheaton Amend Silver Purchase Agreement and Alexco Announces Positive Preliminary Economic Assessment for Expanded Silver Production at Keno Hill**

**March 29, 2017 – Alexco Resource Corp. (NYSE-MKT:AXU, TSX:AXR)** (“Alexco” or the “Corporation”) is pleased to announce the amendment of the silver purchase agreement (the “Amended SPA”) with Silver Wheaton Corp. (“Silver Wheaton”). In addition, Alexco announces the release of an independent technical report dated March 29, 2017 with an effective date of January 3, 2017 entitled "Preliminary Economic Assessment of the Keno Hill Silver District Project, Yukon, Canada" (the “PEA”). Note that all dollar amounts referenced herein are in Canadian (“Cdn”) dollars unless indicated otherwise.

#### **Highlights of the Amended SPA:**

- The per ounce production payment on streamed silver changes from US\$3.90 per ounce (“/oz”) of silver delivered to Silver Wheaton to a percentage of the spot silver price that increases with lower mill silver head grades and lower silver prices, and decreases with higher mill silver head grades and higher silver prices.
- The increased production payments in lower silver price and/or lower silver grade environments increases the flexibility of Alexco to process lower grade ore and sustain mining operations during periods of lower silver prices and does so without limiting the upside opportunity of either Alexco or Silver Wheaton in higher price and grade environments.
- The variable production payment will increase overall mining efficiency of the typically high grade silver deposits in the Keno Hill Silver District (“KHSD”) while also accommodating lower grade deposits or discoveries which might otherwise be uneconomic.
- As consideration, Alexco has agreed, subject to TSX and NYSE-MKT approval, to issue Silver Wheaton three million (“M”) common shares of Alexco.

Alexco President and CEO, Clynton Nauman, commented, “The Amended SPA is an exceptional outcome for Alexco. Most importantly, it places the Keno Hill Silver District clearly on a path toward redevelopment and ultimately a production decision. Furthermore, we appreciate the endorsement of Silver Wheaton through its strategic shareholding in Alexco, an endorsement which we believe reflects confidence in a future of sustained silver production at Keno Hill as well as recognition of the proven exploration upside and highly prospective nature of the district.”

“We have long felt that Keno Hill is one of the most prospective silver districts in the world, and the success Alexco has had with Flame & Moth and, more recently, Bermingham confirms our view,” said Randy Smallwood, President and Chief Executive Officer of Silver Wheaton. “We believe that the amendments we have made today will be mutually beneficial to both Silver Wheaton and our partner Alexco and will result in silver once again being mined from Keno Hill.”

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### **Highlights of the PEA:**

- Alexco's project pre-tax and after-tax net present value ("NPV") is \$104.3 M and \$79.4 M (5% discount rate), respectively, and pre-tax and after-tax internal rate of return ("IRR") is 89% and 75%, respectively, at assumed silver prices of US\$18.60/oz in 2018 and US\$19.35/oz in 2019 through 2025.
- At current spot metal prices and US/Cdn foreign exchange rate (March 29, 2017), the project has a pre-tax and after-tax NPV of \$121.1 M and \$90.5 M (5% discount rate), respectively, and a pre-tax and after-tax IRR of 92% and 78%, respectively.
- Average annualized mill throughput is 143,000 tonnes per year over an eight year period at an average feed grade of 843 grams per tonne ("g/t") silver ("Ag"), 3.3% lead ("Pb"), 4.6% zinc ("Zn") and 0.39 g/t gold ("Au").
- Payable production is anticipated to be a total of approximately 25.1 M ounces of silver, 77.3 M pounds ("lbs") of zinc, 67 M lbs of lead and 4,870 ounces of Au over an eight (8) year mine life. Average annualized payable silver production is 3.5 M ounces per year, with the initial three years of annualized payable silver production averaging 4.1 M ounces per year.
- Initial capital costs of \$27 M are estimated to achieve production and positive cash flow with less than one year payback.

In addition, upon achieving commercial production, Alexco has calculated all-in sustaining costs ("AISC") (contained silver, by-product basis) over LOM to be US\$13.51/oz of silver (including direct operating costs, sustaining capital, the Silver Wheaton stream, corporate general and administrative and ongoing surface exploration costs), and AISC over the first full three (3) years of production to be US\$12.18/oz of silver.

Mr. Nauman commented, "The results reflected in this PEA are the culmination of three years of work conducted during a period of low silver prices and suspended operations, a period during which we continued systematic exploration and in-fill drilling to add approximately 900,000 tonnes of potentially mineable material at the Flame & Moth and Bermingham deposits containing more than 23 M ounces of silver at an indicated resource grade of approximately 800 g/t silver. It goes without saying that we intend to continue our exploration efforts in 2017 alongside increased surface and underground activity as we prepare the district for a production decision."

### **Preliminary Economic Assessment**

The updated PEA includes current Mineral Resource statements for the Bermingham, Flame & Moth, Bellekeno, Lucky Queen and Onek deposits. The PEA also reflects the Amended SPA variable production payment imputed on the basis of the assumed pricing model. The PEA was compiled by Roscoe Postle Associates Inc. ("RPA") with contributions from a team of qualified persons, and assesses expanded operations for production of silver, lead, zinc and gold in the KHSD.



Key PEA metrics (and assumptions) are as follows:

Consolidated mine production	1,021,000 tonnes
Consolidated production grade	843 g/t Ag, 0.4 g/t Au, 3.3% Pb, 4.6% Zn
Mill throughput LOM (tonnes per day (“tpd”))	Average annual 390 tpd
Mill recoveries LOM	Average Ag 97%, Au 70%, Pb 94.7%, Zn 88%
Concentrate produced (Dry Metric Tonnes (“DMT”))	49,243 DMT Pb con, 83,453 DMT Zn con
Total payable metal production	Ag 25.1M oz, Au 4,870 oz, Pb 67.0 M lbs, Zn 77.3 M lbs
Production cost (mining, milling and G&A)	\$325 per tonne of ore
Net Smelter Return per tonne of ore (after incorporation of Amended SPA)	\$565 per tonne of ore
Total capital (life of mine)	\$102.5 M, including \$55.4 M underground development
Initial capital to achieve positive cash flow	\$27 M
Net Cash Contribution Pre-Tax	\$139.7 M
IRR Pre-tax	89%
NPV Pre-tax (5%)	\$104.3 M
Net Cash Contribution After Tax	\$107.7 M
IRR After Tax	75%
NPV After Tax (5%)	\$79.4 M
Prices (2018 – 2025) Used in PEA	Ag US\$18.60/oz initially then \$19.35/oz long-term, SLW Ag average US\$6.16/oz, Pb US\$1.00/lb initially then \$0.94/lb long-term, Zn US\$1.20/lb initially then \$1.00/lb long-term, Au US\$1,300/oz, USD/CDN 0.76 initially then 0.79 long-term

The 1,021,053 tonnes of the consolidated mine production includes 2% from inferred mineral resources. Readers are cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability. Furthermore, the PEA is preliminary in nature; it includes inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves; and there is no certainty that the PEA will be realized.

The PEA contemplates the sequential development and production from four (4) mines over a nine (9) year period, beginning with an advanced underground exploration program at Bermingham and followed in late 2017 by underground development of the Flame & Moth deposit. Commencement of development and construction remains dependent on a number of factors, including receiving all appropriate permits and regulatory authorizations, Alexco’s expectations regarding market prices for Ag, Pb and Zn as well as the US-Canadian dollar exchange rate, and the availability of development capital. Additionally, a production decision, which is made without a feasibility study of mineral reserves demonstrating economic and technical viability, carries additional potential risks which include, but are not limited to, the risk that additional detailed work may be necessary with respect to mine design and mining schedules, metallurgical flow sheets and process plant designs, and the inherent risks pertaining to the inclusion of approximately 2% inferred mineral resources in the mine plan.

## Mining

The PEA lays out a mine plan centered on Flame & Moth production which provides 67% of total LOM mill feed. Supplemental mine production is sourced from the Bellekeno deposit early in the production period followed by the Bermingham mine and Lucky Queen mine production later in the period. The LOM production schedule includes an annualized average of 390 tpd over an eight year period. Nominal production rates are 250 tpd for Bellekeno, 130 tpd for Lucky Queen, 140 tpd for Bermingham and 260 tpd for Flame & Moth. Mining methods are



predominantly mechanized cut and fill with a trend toward long hole and drift and fill mining methods in areas of increased deposit thickness.

### **Processing and Infrastructure**

The Keno District Mill Facility has a nameplate capacity of 408 tpd and employs conventional crushing, grinding, differential flotation and dewatering processes to produce a Pb concentrate, a Zn concentrate and a filtered tailings product for storage in an established Dry Stacked Tailings Facility or used underground as backfill. Ag and Pb minerals are recovered together in the Ag-Pb bulk concentrate and Zn minerals in a separate Zn concentrate.

Prior to resumption of plant operations an additional 1.8m x 3m, 130 kW ball mill (purchased, on site) will be installed to provide expanded grinding capacity ahead of the flotation circuit. Locked and open cycle flotation tests on all deposits plus prior operating performance results indicate that average lead concentrate grades during commercial production will be in the order of 65% Pb and 17,000 g/t Ag.

### **Capital Costs**

Initial capital costs of \$27 M are estimated to achieve production and positive cash flow. The primary components of this include approximately \$12 M of the initial capital to establish access and underground infrastructure at the Flame & Moth deposit and \$8.7 M to complete the advanced exploration program at Bermingham, including underground equipment rebuilds and purchase.

### **Other**

All of the regulatory approvals required for mining and processing activities associated with the Bellekeno and Lucky Queen deposits are currently in place. With the exception of the Water-Use License, all of the regulatory approvals required for mining and processing activities associated with the Flame & Moth deposit are currently in place. Preliminary mine planning has been completed for the Bermingham deposit, and permitting for the advanced underground exploration phase of the project is underway.

## **Silver Wheaton Amended Silver Purchase Agreement**

On March 29, 2017 the Corporation and Silver Wheaton entered into an amendment agreement to the Silver Purchase Agreement, originally dated October 2, 2008 (the "Original SPA") as follows:

- Silver Wheaton will continue to receive 25% of the life of mine payable silver from the KHSD. The production payment (originally US\$3.90 per ounce) will be based on monthly silver head grade and monthly silver price;



- The actual monthly production payment will fall within a defined grade and pricing range governed by upper and lower numeric criteria (ceiling grade/price and floor grade/price) pursuant to the following formula:

$$\frac{(\text{Ceiling Grade} - \text{Deemed Shipment Head Grade})}{(\text{Ceiling Grade} - \text{Floor Grade})} \times \frac{(\text{Ceiling Price} - \text{Deemed Shipment Silver Price})}{(\text{Ceiling Price} - \text{Floor Price})} \times \text{Market Price}$$

Floor Grade	=	600 g/t Ag
Floor Price	=	US\$13/oz Ag
Ceiling Grade	=	1,400 g/t Ag
Ceiling Price	=	US\$25/oz Ag
Deemed Shipment Head Grade	=	Calculated monthly mill silver head grade
Deemed Shipment Silver Price	=	Average monthly silver price
Market Price	=	Spot silver price prior to day of sale

For clarification, using the PEA's average feed grade of 843 g/t and today's approximate silver spot price of \$18 would result in the following production payment from Silver Wheaton:

$$\frac{(1,400\text{g/t} - 843\text{g/t})}{(1,400\text{g/t} - 600\text{g/t})} \times \frac{(\text{US\$25} - \text{US\$18})}{(\text{US\$25} - \text{US\$13})} = 0.406 \times \text{US\$18.00} = \text{US\$7.31/oz Ag}$$

**(Cdn equivalent - \$9.78/oz Ag)**

- The 400 tpd mine and mill completion test date is extended to December 31, 2019; and
- The Silver Wheaton area of interest remains one (1) km around existing Alexco holdings in the KHSD.

As consideration of the foregoing amendments, the Corporation has agreed, subject to TSX and NYSE-MKT approval, to issue 3,000,000 shares to Silver Wheaton with a fair value of US\$4,934,948. The volume weighted average trading price of the Corporation's common shares for the five days prior to March 29, 2017 was \$2.20 on the TSX.

Fort Capital Partners has acted as a financial advisor to Alexco in connection with the restructuring of the SPA.

#### National Instrument 43-101 and Qualified Persons

The technical information in this news release has been reviewed and approved by Torben Jensen, P. Eng. of RPA, an independent Qualified Person as defined in National Instrument 43-101 – *Standards of Disclosure for Mineral Projects* ("NI 43-101").

The PEA was compiled by RPA with contributions from a team of Qualified Persons as defined by NI 43-101 as follows:

- Torben Jensen, P.Eng. and R. Dennis Bergen, P.Eng. of RPA
- Jeff Austin, P. Eng of International Metallurgical and Environmental Inc.
- Gilles Arseneau Ph.D., P.Geo. of SRK Canada Inc.
- David Farrow, Pr.Sci.Nat, P.Geo. of Geostrat Consulting Inc.



All Mineral Resources are classified following the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 2014), in accordance with the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines and with NI 43-101 guidelines. The PEA is available under Alexco's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

### **About Alexco**

Alexco owns the Bellekeno silver mine, one of several mineral properties held by Alexco which encompass substantially all of the historical KHS located in Canada's Yukon Territory. Employing a unique business model, Alexco also provides mine-related environmental services, remediation technologies and reclamation and mine closure services to both government and industry clients through the Alexco Environmental Group, its wholly-owned environmental services division.

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*Statements in this news release that are not historical facts are "forward-looking statements" or "forward-looking information" within the meaning of applicable Canadian securities laws and the United States private Securities Litigation Reform Act of 1995 (collectively, "forward-looking statements"). Forward-looking statements include, but are not limited to, statements concerning the Company's anticipated results and developments in the Company's operations in future periods, planned exploration and development of its properties, plans related to its business and other matters that may occur in the future, made as of the date of this news release. Forward-looking statements may include, but are not limited to, statements with respect to future remediation and reclamation activities, future mineral exploration, the estimation of mineral reserves and mineral resources, the realization of mineral reserve and mineral resource estimates, future mine construction and development activities, future mine operation and production, the timing of activities and reports, the amount of estimated revenues and expenses, the success of exploration activities, permitting time lines, requirements for additional capital and sources and uses of funds and the proposed issuances of securities to Silver Wheaton and Fort. Forward-looking statements are subject to a variety of known and unknown risks, uncertainties and other factors which could cause actual events or results to differ from those expressed or implied by the forward-looking statements. Such factors include, among others, risks related to actual results and timing of exploration and development activities; actual results and timing of mining activities; actual results and timing of environmental services activities; actual results and timing of remediation and reclamation activities; conclusions of economic evaluations; changes in project parameters as plans continue to be refined; future prices of silver, gold, lead, zinc and other commodities; possible variations in mineable resources, grade or recovery rates; failure of plant, equipment or processes to operate as anticipated; accidents, labour disputes and other risks of the mining industry; First Nation rights and title; continued capitalization and commercial viability; global economic conditions; competition; and delays in obtaining governmental or regulatory approvals or financing or in the completion of development activities. Forward-looking statements are based on certain assumptions that management believes are reasonable at the time they are made. In making the forward-looking statements included in this news release, the Company has applied several material assumptions, including, but not limited to, the assumption that market fundamentals will result in sustained silver, gold, lead and zinc demand and prices; that all necessary approvals and consents, including regulatory approval of the proposed share issuances will be obtained in a timely manner and on acceptable terms. There can be no assurance that forward-looking statements will prove to be accurate and actual results and future events could differ materially from those anticipated in such statements. The Company expressly disclaims any intention or obligation to update or revise any forward-looking statements whether as a result of new information, future events or otherwise, except as otherwise required by applicable securities legislation.*