



Alexco Provides Operations Update, Extends 2020 Exploration Program at Bermingham, and Provides Corporate Update

September 15, 2020 - Alexco Resource Corp. (NYSE American/TSX: AXU) (“Alexco” or the “Company”) today provides an update on its mine development progress at Keno Hill and announces an extension of its 2020 surface exploration drilling program on the Bermingham “deep” target. Additionally, Alexco announces that Mr. Paul Jones has joined the Company in the role of Senior Vice President, Corporate Development.

Mine Development Update

Progress on site-wide capital projects including mill modifications and infrastructure improvements continues to be on pace for completion with mill commissioning and production of silver concentrate in Q4 2020. In the mill, installation of the new tailings filter press and second ball mill are 95% and 75% complete, respectively. Other mill improvement projects underway include the construction of a crusher enclosure and ventilation system, installation of two concentrate regrind mills, modification of the fine ore feeder system and upgrade of the employee dry and office facilities. Camp expansion is approximately 75% complete with the addition of two new camp accommodation units.

Rehabilitation and capital development continues on schedule at each of the three underground mines slated for initial ore production, with emphasis on the Bellekeno Mine where initial ore will be used for commissioning of the mill in Q4. All major pieces of new underground mine equipment have been delivered to site and are currently operating or are being commissioned. This new fleet includes two (2) CAT R1300 3.5 yard scoops, two (2) CAT AD22 20 tonne haul trucks, two (2) Atlas Copco 282 twin boom jumbos, two (2) MacLean SSB bolters and other support gear. Ore will first be delivered from the Bellekeno Mine where development to ore on the 680 level is already complete. At Flame & Moth advance of the primary ramp is underway with approximately 270 meter (“m”) of primary ramp and level development required to cross cut the ore on the 835 level. At the Bermingham mine, construction of the water treatment plant is underway, which is required prior to resuming ramp development.

The Company continues to successfully recruit and onboard the mine operations team. Key managers, site supervisors and mine engineering staff are all in place and the current focus continues to be the onboarding of underground miners, maintenance specialists and mill operators. The current head count at Keno Hill includes 110 Alexco employees and 29 contractors, with a target of 170 employees by the end of 2020. With a focus on Yukon and Western Canada recruitment, over 90% of the Alexco employees currently hired are from the Yukon and British Columbia including citizens of the First Nation of Na-Cho Nyak Dun.

With the significant increase in underground and district wide operating activities at Keno Hill, the safety performance of all employees and contractors remains excellent and exemplifies the culture of safety excellence instilled at Keno Hill. The Company’s safety record has now exceeded over 7.5 years without a Lost Time Accident at Keno Hill. The Company’s strict COVID-19 management protocols and operating practices remain in place, following the guidelines of the Chief Medical Officer, and currently the Yukon continues to report no active cases of COVID-19.

The Company is also pleased to announce that after an extensive process, Ocean Partners has been selected as the concentrate off-take provider for both the lead/silver and zinc concentrates to be produced at Keno Hill. Finalization of the off-take agreements is expected to be completed in September. Both

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concentrates will be transported to and processed at a North American smelter. Ocean Partners is an international base and precious metals concentrate trading firm that offers a complete range of trading services for miners, smelters, refiners and metal consumers around the world.

2020 Surface Exploration Update

Alexco's surface exploration drilling program at the Bermingham "deep" target is progressing well with approximately 3,500 m completed in six holes. A second drill has been added and the program extended, anticipating a total of 7,500 m to 8,000 m of drilling to be completed in at least 12 holes by mid-November. The primary target is approximately 200 m vertically below the NE Zone of the Bermingham deposit, that contains a total Indicated Mineral Resource of 32.9 million ounces of silver at an average grade of 930 grams per tonne silver.

The target zone for the remainder of the 2020 drilling is a structural panel that extends 600 m to 700 m along (strike) where the geologic framework appears to be similar to that identified in the shallower existing resource.

Initial results are anticipated to be available by the end of Q4.

Corporate Update – Appointment of Paul Jones, Senior Vice President, Corporate Development

Alexco is pleased to announce that Mr. Paul Jones has joined the Company as Senior Vice President, Corporate Development. Mr. Jones brings nearly 20 years experience in the mining sector in a variety of roles. Prior to joining Alexco in September 2020, he was Senior Vice President of Corporate Development for Alio Gold Inc. where he played a leading role in the development and execution of a corporate turnaround strategy, which ultimately culminated in a merger with Argonaut Gold Inc. Previously Mr. Jones worked for more than five years with an intermediate copper producer in operations, financial planning and analysis, investor relations, and business development; earlier in his career, he was an investment banker focused on merger & acquisition advisory for the mining and metals space.

Clynt Nauman, Chief Executive Officer, commented, "We are happy with the construction and development progress at Keno Hill, and look forward to mill commissioning in Q4. We remain diligent and systematic in the execution of our plan to transition to production and are clearly pleased with the strength of the silver markets. On the exploration front, in 2020 we are drilling much deeper holes (averaging 650 m) at our Bermingham 'deep' target exploration program so progress is relatively slow, nevertheless the decision to extend the drilling program is based on recognition of a prospective zone which we believe may have a structural framework similar to that which hosts the Bermingham reserve and resource identified at shallower levels. Finally, we are delighted to welcome Paul Jones who will further strengthen our senior management team. Paul's extensive experience in corporate development and investment banking will be a significant benefit as we continue to grow our Company."

Qualified Persons

The disclosure in this news release of scientific and technical information regarding exploration projects on Alexco's mineral properties has been reviewed and approved by Alan McOnie, FAusIMM, Vice President, Exploration, while that regarding mine development and operations has been reviewed and approved by Neil Chambers, P.Eng., Chief Mine Engineer, both of whom are Qualified Persons as defined by National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101").

About Alexco

Alexco is a Canadian primary silver company that owns and operates the majority of the historic Keno Hill Silver District, in Canada's Yukon Territory, one of the highest-grade silver deposits in the world. Alexco is currently advancing Keno Hill to production and expects to start concentrate production and shipments in



Q4 2020. As per Alexco's 2020 pre-feasibility study, Keno Hill is expected to produce an average of approximately 4 million ounces of silver per year contained in high quality lead/silver and zinc concentrates. Total production over an 8-year mine life is estimated at 1.18 million tonnes of ore at an average rate of 430 tonnes per day at an average grade of 805 grams per tonne. Keno Hill retains significant potential to grow and Alexco has a long history of expanding the operation's Mineral Resources through successful exploration.

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Some statements ("forward-looking statements") in this news release contain forward-looking information plans related to Alexco's business and other matters that may occur in the future, made as of the date of this news release. 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 risks and uncertainties relating to the COVID-19 pandemic including but not limited to business closures, quarantines and a general reduction in consumer activity; actual results and timing of exploration and development, mining, environmental services and remediation and reclamation activities; future prices of silver, gold, lead, zinc and other commodities; possible variations in mineral 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 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, Alexco has applied several material assumptions, including, but not limited to the circumstances surrounding the COVID-19 pandemic, although evolving, will stabilize or at least not worsen; that the extent to which COVID-19 may impact the Company, including without limitation disruptions to the mobility of Company personnel, costs associated with implementation of health and safety protocols, increased labour and transportation costs, and other related impacts, will not change in a materially adverse manner; Alexco will be able to raise additional capital as necessary, that the proposed exploration and development activities will proceed as planned, and that market fundamentals will result in sustained silver, gold, lead and zinc demand and prices. 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. Alexco 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.