

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 40-F

- REGISTRATION STATEMENT PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934
- OR
- ANNUAL REPORT PURSUANT TO SECTION 13(a) OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For year period ended December 31, 2016

Commission file number: 001-33621



ALEXCO

ALEXCO RESOURCE CORP.

(Exact Name of Registrant as Specified in its Charter)

British Columbia, Canada

(Province or other jurisdiction of incorporation or organization)

1040

(Primary Standard Industrial
Classification Code)

91-0742812

(I.R.S. Employer Identification No.)

**Suite 1225, Two Bentall Centre, 555 Burrard Street, Box 216
Vancouver, British Columbia, Canada V7X 1M9
(604) 633-4888**

(Address and Telephone Number of Registrant's Principal Executive Offices)

**Alexco Resource U.S. Corp.
12150 E. Briarwood Ave, Ste #135
Centennial, CO 80112
(303) 862-3929**

(Name, address (including zip code) and telephone number (including area code) of agent for service in the United States)

Copies to:
**Jason K. Brenkert
Dorsey & Whitney LLP
1400 Wewatta Street, Suite 400
Denver, Colorado 80202
(303) 352-1133**

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each Class:

Common Shares, no par value

Name of Each Exchange On Which Registered:

NYSE MKT

Securities registered or to be registered pursuant to Section 12(g) of the Act: **N/A**

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: **N/A**

For annual reports, indicate by check mark the information filed with this form:

Annual Information Form

Audited Annual Financial Statements

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report: As at December 31, 2016, 92,950,194 common shares of the Registrant were issued and outstanding.

Indicate by check mark whether the Registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Exchange Act during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the Registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files). Yes No

EXPLANATORY NOTE

Alexco Resource Corp. (the “Corporation” or the “Registrant”) is a Canadian issuer eligible to file its annual report pursuant to Section 13 of the Securities Exchange Act of 1934, as amended (the “Exchange Act”), on Form 40-F pursuant to the multi-jurisdictional disclosure system of the Exchange Act. The Corporation is a “foreign private issuer” as defined in Rule 3b-4 under the Exchange Act. Equity securities of the Corporation are accordingly exempt from Sections 14(a), 14(b), 14(c), 14(f) and 16 of the Exchange Act pursuant to Rule 3a12-3.

FORWARD-LOOKING STATEMENTS

This annual report on Form 40-F and the exhibits attached hereto contain “forward-looking statements” within the meaning of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements concern the Corporation's business plans, including but not limited to anticipated results and developments in the Corporation's operations in future periods, planned exploration and development of its mineral properties, plans related to its business and other matters that may occur in the future, made as of the date of this annual report. Forward-looking statements may include, but are not limited to, statements with respect to amendments to the silver purchase agreement (“SPA”) with Silver Wheaton Corp. (“Silver Wheaton”) and its impact on the Corporation, and the resulting effect on pricing and other terms of the SPA, additional capital requirements to fund further exploration and development work on the Corporation's properties, 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, 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. Any statements that express or involve discussions with respect to predictions, expectations, beliefs, plans, projections, objectives, assumptions or future events or performance (often, but not always, using words or phrases such as “expects”, “anticipates”, “plans”, “estimates”, “intends”, “strategy”, “goals”, “objectives” or stating that certain actions, events or results “may”, “could”, “would”, “might” or “will” be taken, occur or be achieved, or the negative of any of these terms and similar expressions) are not statements of historical fact and may be “forward-looking statements”.

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, but are not limited to, 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 operations; 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 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; delays in obtaining governmental approvals or financing or in the completion of development activities, and inability of the Corporation to obtain additional financing needed to fund certain contingent payment obligations on reasonable terms or at all. Furthermore, forward-looking statements are statements about the future and are inherently uncertain, and actual achievements of the Corporation or other future events or conditions may differ materially from those reflected in the forward-looking statements due to a variety of risks, uncertainties and other factors, including but not limited to those referred to in the exhibits attached to this annual report on Form 40-F, including the Corporation's Annual Information Form filed as [Exhibit 99.1](#) and elsewhere.

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 annual report, the Corporation has applied several material assumptions, including, but not limited to, the assumption that: (1) additional financing needed to fund certain contingent payment obligations to Silver Wheaton; (2) additional financing needed for the capacity related refund under the amended SPA with Silver Wheaton will be available on reasonable terms; (3) additional financing needed for further exploration and development work on the Corporation's properties will be available on reasonable terms; (4) the proposed development of its mineral projects will be viable operationally and economically and proceed as planned; (5) market fundamentals will result in sustained silver, gold, lead and zinc demand and prices, and such prices will not be materially lower than those estimated by management in preparing the annual financial statements for the year ended December 31, 2016; (6) market fundamentals will result in sustained silver, gold, lead and zinc demand and prices, and such prices will be materially consistent with or more favourable than those anticipated in the Preliminary Economic Assessment (“PEA”) (as defined under “Description of the Business – KHSD Property”); (7) the actual nature, size and grade of its mineral resources are materially consistent with the resource estimates reported in the supporting technical reports; (8) labor and other industry services will be available to the Corporation at prices consistent with internal estimates; (9) the continuances of existing and, in certain circumstances, proposed tax and royalty regimes; and (10) that other parties will continue to meet and satisfy their contractual obligations to the Corporation. Statements concerning mineral reserve and resource estimates may also be deemed to constitute forward-looking information to the extent that they involve estimates of the mineralization that will be encountered if the property is

developed. Other material factors and assumptions are discussed throughout the exhibits attached to this annual report on Form 40-F, including the Corporation's Annual Information Form filed as Exhibit 99.1.

The Corporation's forward-looking statements are based on the beliefs, expectations and opinions of management on the date the statements are made and should not be relied on as representing the Corporation's views on any subsequent date. While the Corporation anticipates that subsequent events may cause its views to change, the Corporation specifically disclaims any intention or any obligation to update forward-looking statements if circumstances or management's beliefs, expectations or opinions should change, except as required by applicable law. For the reasons set forth above, investors should not place undue reliance on forward-looking statements.

NOTES TO UNITED STATES READERS

DIFFERENCES IN UNITED STATES AND CANADIAN REPORTING PRACTICES

The Corporation is permitted, under the multi-jurisdictional disclosure system adopted by the United States Securities and Exchange Commission (the "SEC"), to prepare this annual report on Form 40-F in accordance with Canadian disclosure requirements, which differ from those of the United States. The Corporation has prepared its financial statements, which are filed as Exhibit 99.2 to this annual report on Form 40-F, in accordance with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board, and they are also subject to international auditing and auditor independence standards and SEC / Public Company Accounting Oversight Board ("PCAOB") independence standards. The Corporation's financial statements may not be comparable to financial statements of United States companies. Since the Corporation has prepared its financial statements in accordance with IFRS, it is not required to provide a reconciliation to United States generally accepted accounting principles.

CURRENCY

Unless otherwise indicated, all dollar amounts in this annual report on Form 40-F and the documents incorporated herein by reference are in Canadian dollars. The exchange rate of Canadian dollars into United States dollars, on December 31, 2016, based upon the close rate of exchange of Canadian dollars into United States dollars as quoted by the Bank of Canada was CAD\$1.00 = US\$1.3427.

RESOURCE AND RESERVE ESTIMATES

The Corporation's Annual Information Form for the fiscal year ended December 31, 2016 filed as Exhibit 99.1 to this annual report on Form 40-F and management's discussion and analysis for the fiscal year ended December 31, 2016 filed as Exhibit 99.3 to this annual report on Form 40-F have been prepared in accordance with the requirements of the securities laws in effect in Canada, which differ from the requirements of United States securities laws. The terms "mineral reserve", "proven mineral reserve" and "probable mineral reserve" are Canadian mining terms as defined in accordance with Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects ("NI 43-101") and the Canadian Institute of Mining, Metallurgy and Petroleum (the "CIM") - *CIM Definition Standards on Mineral Resources and Mineral Reserves*, adopted by the CIM Council, as amended. These definitions differ materially from the definitions in SEC Industry Guide 7 under the United States Securities Act of 1933, as amended. Under SEC Industry Guide 7 standards, a "final" or "bankable" feasibility study is required to report reserves, the three-year historical average price is used in any reserve or cash flow analysis to designate reserves, and the primary environmental analysis or report must be filed with the appropriate governmental authority.

In addition, the terms "mineral resource", "measured mineral resource", "indicated mineral resource" and "inferred mineral resource" are defined in and required to be disclosed by NI 43-101; however, these terms are not defined terms under SEC Industry Guide 7 and are normally not permitted to be used in reports and registration statements filed with the SEC. Investors are cautioned not to assume that all or any part of a mineral deposit in these categories will ever be converted into SEC Industry Guide 7 reserves. "Inferred mineral resources" have a great amount of uncertainty as to their existence, and great uncertainty as to their economic and legal feasibility. It cannot be assumed that all or any part of an inferred mineral resource will ever be upgraded to a higher category. Under Canadian rules, estimates of inferred mineral resources may not form the basis of feasibility or pre-feasibility studies, except in rare cases. Investors are cautioned not to assume that all or any part of an inferred mineral resource exists or is economically or legally mineable. Disclosure of "contained ounces" in a resource is permitted disclosure under Canadian regulations; however, the SEC normally only permits issuers to report mineralization that does not constitute "reserves" by SEC Industry Guide 7 standards as in place tonnage and grade without reference to unit measures.

Accordingly, information contained in this annual report on Form 40-F and the documents incorporated by reference herein that contain descriptions of the Corporation's mineral deposits may not be comparable to similar information made public by U.S.

companies subject to the reporting and disclosure requirements under the United States federal securities laws and the rules and regulations thereunder, including SEC Industry Guide 7.

ANNUAL INFORMATION FORM

The Corporation's Annual Information Form for the fiscal year ended December 31, 2016 is filed as Exhibit 99.1 to this annual report on Form 40-F and is incorporated by reference herein.

AUDITED ANNUAL FINANCIAL STATEMENTS

The audited consolidated financial statements of the Corporation for the years ended December 31, 2016 and 2015, including the report of the independent auditor with respect thereto, are filed as Exhibit 99.2 to this annual report on Form 40-F and incorporated by reference herein.

MANAGEMENT'S DISCUSSION AND ANALYSIS

The Corporation's management's discussion and analysis for the year ended December 31, 2016 is filed as Exhibit 99.3 to this annual report on Form 40-F and incorporated by reference herein.

TAX MATTERS

Purchasing, holding, or disposing of securities of the Corporation may have tax consequences under the laws of the United States and Canada that are not described in this annual report on Form 40-F. Holders of the Corporation's common shares should consult their own tax advisors regarding the tax consequences of purchasing, holding or disposing of securities of the Corporation.

CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

At the end of the period covered by this annual report on Form 40-F, an evaluation was carried out under the supervision of and with the participation of the Corporation's management, including the Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), of the effectiveness of the design and operations of the Corporation's disclosure controls and procedures, as defined in Rule 13a-15(e) under the Exchange Act. Based upon that evaluation, the Corporation's CEO and CFO have concluded that, as of the end of the period covered by this annual report on Form 40-F, the Corporation's disclosure controls and procedures were effective to give reasonable assurance that the information required to be disclosed by the Corporation in reports that it files or submits under the Exchange Act is (i) recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and (ii) accumulated and communicated to management, including its CEO and CFO, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) under the Exchange Act. A company's internal control over financial reporting is a process designed by, or under the supervision of, the CEO and CFO to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles.

A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements. It should be noted that a control system, no matter how well conceived or operated, can only provide reasonable assurance, not absolute assurance, that the objectives of the control system are met. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with policies and procedures may deteriorate.

Management, including the CEO and CFO, assessed the effectiveness of the Corporation's internal control over financial reporting as of December 31, 2016, based on the criteria set forth in *Internal Control – Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway. Based on this assessment, management has concluded that Alexco's internal control over financial reporting was effective as at December 31, 2016.

The Corporation is required to provide an auditor's attestation report on its internal control over financial reporting for the year ended December 31, 2016. In this annual report on Form 40-F, the Corporation's independent registered auditor, PricewaterhouseCoopers LLP ("PwC"), must state its opinion as to the effectiveness of the Corporation's internal control over financial reporting for the year ended December 31, 2016. PwC has audited the Corporation's financial statements included in this annual report on Form 40-F and has issued an attestation report on the Corporation's internal control over financial reporting.

Attestation Report of Independent Auditor

The effectiveness of the Company's internal control over financial reporting as of December 31, 2016 has been audited by PwC, an independent auditor, as stated in their report which is included with the Company's audited consolidated financial statements filed as Exhibit 99.2 to this Annual Report on Form 40-F.

Changes in Internal Control over Financial Reporting

There have been no changes in the Corporation's internal control over financial reporting during the year ended December 31, 2016 that have materially affected, or are reasonably likely to materially affect, the Corporation's internal control over financial reporting.

CORPORATE GOVERNANCE

The Corporation is listed on the Toronto Stock Exchange ("TSX") and is required to describe its practices and policies with regards to corporate governance with specific reference to TSX guidelines by way of an annual corporate governance statement in the Corporation's annual report or information circular filed with the appropriate securities regulators in Canada. The Corporation is also listed on the NYSE MKT and additionally complies as necessary with the rules and guidelines of the NYSE MKT as well as the SEC. The Corporation reviews its governance practices on an ongoing basis to ensure it is in compliance with all applicable requirements.

The Corporation's Board of Directors is responsible for the Corporation's Corporate Governance policies and has separately designated standing Audit, Compensation, Nominating & Corporate Governance, and Environmental, Health, Safety & Technical Committees. The Corporation's Board of Directors has determined that all the members of the Audit, Compensation, and Nominating & Corporate Governance Committees are independent, based on the criteria for independence and unrelatedness prescribed by the TSX and Section 803A of the NYSE MKT Company Guide.

Compensation Committee

Compensation of the Corporation's CEO and all other officers is recommended to the Board of Directors for determination by the Compensation Committee. The Compensation Committee develops, reviews and monitors director and executive officer compensation and policies. The Compensation Committee is also responsible for annually reviewing the adequacy of compensation to directors, officers, and other consultants and the composition of compensation packages. The Corporation's CEO cannot be present during the Compensation Committee's deliberations or vote on the CEO's compensation.

The Compensation Committee is composed of Michael Winn, Terry Krepiakovich and Richard Zimmer, each of whom, in the opinion of the Board of Directors, is independent under the rules of the TSX and pursuant to Sections 803A and 805(c)(1) of the NYSE MKT Company Guide. The Corporation's Compensation Committee Charter is available on the Company's website at www.alexcoresource.com.

Nominating & Corporate Governance Committee

Nominees for the election to the Corporation's Board of Directors are recommended by the Nominating & Corporate Governance Committee. The Corporation has adopted a formal written board resolution addressing the nomination process and such related matters as may be required under the rules of the TSX and the NYSE MKT and any applicable securities laws.

The Nominating & Corporate Governance Committee is composed of Rick Van Nieuwenhuysse, Elaine Sanders and Terry Krepiakovich, each of whom, in the opinion of the Board of Directors, is independent under the rules of the TSX and the NYSE MKT.

The Corporation's Nominating and Corporate Governance Committee Charter is available on the Company's website at www.alexcoresource.com.

AUDIT COMMITTEE

Composition and Responsibilities

The Corporation's Board of Directors has a separately designated standing Audit Committee established in accordance with Section 3(a)(58)(A) of the Exchange Act and Section 803B of the NYSE MKT Company Guide. During the Corporation's year ended December 31, 2016, the Corporation's Audit Committee was composed of Terry Krepiakovich, Michael Winn and Elaine Sanders, each of whom, in the opinion of the Corporation's Board of Directors, is independent (as determined under Rule 10A-3 of the Exchange Act, Section 803A of the NYSE MKT Company Guide, and the rules of the TSX) and each of whom is financially literate. The Audit Committee meets the composition requirements set forth by Section 803B(2) of NYSE MKT Company Guide. During the fiscal year covered by this report, Richard Zimmer served on the Audit Committee from January 1, 2016 through June 28, 2016 when Elaine Sanders joined the Board and replaced Mr. Zimmer on the Committee. The Board has determined that Mr. Zimmer is independent (as determined under Rule 10A-3 of the Exchange Act and Section 803A of the NYSE MKT Company Guide).

Mr. Krepiakovich is a member of the Board of Directors of several publicly-listed and private companies since July 2011. From June 2006 to July 2011, Mr. Krepiakovich was the Chief Financial Officer of SouthGobi Resources Ltd., a publicly-listed mining company focused on exploring and developing coal deposits in Mongolia's South Gobi Region. Previously, Mr. Krepiakovich was Chief Financial Officer for Extreme CCTV Inc., a publicly traded company on the TSX involved in manufacturing high tech surveillance equipment, and Vice-President Finance and Chief Financial Officer of Maynards Industries Ltd., a private firm specializing in retailing, auctioneering, liquidating, and mergers and acquisition services. Prior to his position with Maynards, Mr. Krepiakovich was a senior officer in a number of private and public issuers. He is a Canadian qualified Chartered Professional Accountant and was employed with the international accounting firm Peat Marwick Thorne (KPMG), where he worked with a number of companies in mining and related industries.

Mr. Winn is currently President of Seaboard Capital Corp., and was previously President of Terrasearch Inc., both consulting companies providing investment analysis and financial services to companies in the oil and gas, mining and energy sectors. He is also a member of the Board of Directors of several publicly-listed companies, serving for certain of which as a member of the audit committee. Mr. Winn has worked in the oil and gas industry since 1983 and the mining industry since 1992. He completed graduate course work in accounting and finance and received a BSc in geology from the University of Southern California. Mr. Winn is financially literate, possessing extensive senior management experience within the natural resource sectors including experience as a public company audit committee member.

Ms. Sanders is the Vice President, Chief Financial Officer and Corporate Secretary for Trilogy Metals Inc. (formerly NovaCopper Inc.). Prior to Trilogy Metals Inc., Ms. Sanders served as Vice President, Chief Financial Officer and Corporate Secretary for NovaGold Resources Inc., Ms. Sanders has over 20 years of experience in audit, finance, and accounting with public and private companies and Bachelor of Commerce degree from the University of Alberta, is a Canadian qualified Chartered Professional Accountant and a Certified Public Accountant in the United States.

The members of the Audit Committee do not have fixed terms and are appointed and replaced from time to time by resolution of the Board of Directors.

The Audit Committee meets with the Corporation's President and CEO, the Corporation's CFO, and the Corporation's independent auditors to review and inquire into matters affecting financial reporting, the system of internal accounting and financial controls, and the Corporation's audit procedures and audit plans. The Audit Committee also recommends to the Board of Directors the independent auditors to be appointed for each fiscal year. In addition, the Audit Committee reviews and recommends to the Board of Directors for approval the annual and quarterly financial statements and management's discussion and analysis. Finally, the Audit Committee undertakes other activities as required by the rules and regulations of the TSX and the NYSE MKT and other governing regulatory authorities.

The full text of the Audit Committee Charter is set forth in the Corporation's Annual Information Form, filed as [Exhibit 99.1](#) and incorporated by reference in this annual report on Form 40-F.

Audit Committee Financial Expert

During the Corporation's year ended December 31, 2016, the Board of Directors determined that Mr. Terry Krepiakovich qualified as the Audit Committee's "financial expert," as defined in Item 407(d)(5)(ii) of Regulation S-K under the Exchange Act and was "financially sophisticated" as determined under Section 803(B)(2)(iii) of the NYSE MKT Company Guide.

Mr. Krepiakovich qualifies as a financial expert and is financially sophisticated, in that he has an understanding of generally accepted accounting principles and financial statements; is able to assess the general application of accounting principles in connection with the accounting for estimates, accruals and reserves; has experience analyzing or evaluating financial statements that entail accounting issues of equal complexity to the Corporation's financial statements (or actively supervising another person who did so); and has a general understanding of internal controls and procedures for financial reporting and an understanding of audit committee functions.

PRINCIPAL ACCOUNTING FEES AND SERVICES – INDEPENDENT AUDITORS

PwC serve as the independent auditors for the Corporation and have acted as the Corporation's independent auditor in each of the last two years. The chart below sets forth the aggregate fees billed to the Corporation by PwC for services performed in these periods and breaks down these amounts by category of service (for audit fees, audit-related fees, tax fees and all other fees):

External Auditor Service Fees (By Category)

Financial Period	Audit Fees	Audit Related Fees	Tax Fees	All Other Fees
Year ended December 31, 2016	\$242,500	\$45,000	\$Nil	\$Nil
Year ended December 31, 2015	\$190,000	\$45,000	\$Nil	\$Nil

"Audit Fees" are the aggregate fees billed by PwC for the audits of the Corporation's consolidated annual financial statements and internal control over financial reporting that are provided in connection with statutory and regulatory filings or engagements.

"Audit-Related Fees" are fees charged by PwC for assurance and related services that are reasonably related to the performance of the audit or review of the Corporation's financial statements and are not reported under "Audit Fees". This category includes but is not limited to fees billed for independent accountant review of the interim financial statements and Management's Discussion and Analysis, advisory services associated with the Corporation's financial reporting and fees charged for services rendered in connection with registration statements and other securities offering documents.

"Tax Fees" are fees for professional services rendered by PwC for tax compliance, tax advice on actual or contemplated transactions.

"All Other Fees" include all fees charged by PwC for products or services other than those charged for "Audit Fees", "Audit-Related Fees" and "Tax Fees".

PRE-APPROVAL OF AUDIT AND NON-AUDIT SERVICES PROVIDED BY INDEPENDENT AUDITORS

The Audit Committee nominates and engages the independent auditors to audit the financial statements, and approves all audit, audit-related services, tax services and other services provided by PwC. Any services provided by PwC that are not specifically included within the scope of the audit must be pre-approved by the Audit Committee prior to any engagement. The Audit Committee is permitted to approve certain fees for audit-related services, tax services and other services pursuant to a *de minimus* exception before the completion of the engagement. In the year ended December 31, 2016, no fees paid to PwC were approved pursuant to the *de minimus* exception.

OFF-BALANCE SHEET TRANSACTIONS

The Corporation does not have any off-balance sheet financing arrangements or relationships with unconsolidated special purpose entities.

CODE OF ETHICS

The Corporation's Board of Directors has adopted a written Code of Business Conduct and Ethics by which it and all officers and employees of the Corporation abide. In addition, the Board of Directors, through its meetings with management and other informal discussions with management, encourages a culture of ethical business conduct and believes the Corporation's high caliber management team promotes a culture of ethical business conduct throughout the Corporation's operations and is expected to monitor the activities of the Corporation's employees, consultants and agents in that regard. The Board of Directors encourages any concerns regarding ethical conduct in respect of the Corporation's operations to be raised, on an anonymous basis, with the President and CEO, the Chairman, or another Board member as appropriate.

It is a requirement of applicable corporate law that directors and senior officers who have an interest in a transaction or agreement with the Corporation promptly disclose that interest at any meeting of the Board at which the transaction or agreement will be discussed and, in the case of directors, abstain from discussions and voting in respect to the same if the interest is material. These requirements are also contained in the Corporation's Articles, which are made available to the directors and senior officers of the Corporation. All related party transactions are subject to the review of the Corporation's Audit Committee.

All amendments to the Code of Business Conduct and Ethics, and all waivers of the Code with respect to any of the officers covered by it, will be posted on the Corporation's website (as provided below) and provided in print to any shareholder who requests them. The Corporation's Code of Business Conduct and Ethics is located on its website at www.alexcoresource.com.

CONTRACTUAL OBLIGATIONS

The following table lists as of December 31, 2016 information with respect to the Corporation's known contractual obligations.

<u>Contractual Obligations</u>	<u>Payments due by Period</u> (in thousands of Canadian dollars)				
	<i>Total</i>	<i>Less than 1 year</i>	<i>1-3 years</i>	<i>3-5 years</i>	<i>More than 5 years</i>
Operating Leases	\$811	\$315	\$464	\$32	\$Nil
Purchase obligations	276	96	120	60	Nil
Decommissioning and rehabilitation provision (undiscounted basis)	6,056	36	698	302	5,020
TOTAL	\$7,143	\$447	\$1,282	\$394	\$5,020

NOTICES PURSUANT TO REGULATION BTR

There were no notices required by Rule 104 of Regulation BTR that the Registrant sent during the year ended December 31, 2016 concerning any equity security subject to a blackout period under Rule 101 of Regulation BTR.

NYSE MKT CORPORATE GOVERNANCE

The Corporation's common shares are listed on the NYSE MKT under the trading symbol "AXU". Section 110 of the NYSE MKT Company Guide permits the NYSE MKT to consider the laws, customs and practices of foreign issuers in relaxing certain NYSE MKT listing criteria, and to grant exemptions from NYSE MKT listing criteria based on these considerations. A company seeking relief under these provisions is required to provide written certification from independent local counsel that the non-complying practice is not prohibited by home country law. A description of the significant ways in which the Corporation's governance practices differ from those followed by domestic companies pursuant to NYSE MKT standards is as follows:

Shareholder Meeting Quorum Requirement: The NYSE MKT minimum quorum requirement for a shareholder meeting is one-third of the outstanding shares of common stock. In addition, a company listed on the NYSE MKT is required to state its quorum requirement in its bylaws. The Corporation's quorum requirement is set forth in its charter documents under the laws of the Province of British Columbia, Canada. A quorum for a meeting of shareholders of the Corporation is one person present or represented by proxy.

Proxy Delivery Requirement: The NYSE MKT requires the solicitation of proxies and delivery of proxy statements for all shareholder meetings, and requires that these proxies shall be solicited pursuant to a proxy statement that conforms to SEC proxy rules. The Corporation is a "foreign private issuer" as defined in Rule 3b-4 under the Exchange Act, and the equity

securities of the Corporation are accordingly exempt from the proxy rules set forth in Sections 14(a), 14(b), 14(c) and 14(f) of the Exchange Act. The Corporation solicits proxies in accordance with applicable rules and regulations in Canada.

The foregoing are consistent with the laws, customs and practices in Canada.

In addition, the Corporation may from time-to-time seek relief from NYSE MKT corporate governance requirements on specific transactions under Section 110 of the NYSE MKT Company Guide by providing written certification from independent local counsel that the non-complying practice is not prohibited by our home country law, in which case, the Corporation shall make the disclosure of such transactions available on its website at www.alexcoresource.com. Information contained on the Corporation's website is not part of this annual report on Form 40-F.

MINE SAFETY DISCLOSURE

Pursuant to Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 ("Dodd-Frank Act"), issuers that are operators, or that have a subsidiary that is an operator, of a coal or other mine in the United States are required to disclose in their periodic reports filed with the SEC information regarding specified health and safety violations, orders and citations, related assessments and legal actions, and mining-related fatalities under the regulation of the Federal Mine Safety and Health Administration ("MSHA") under the Federal Mine Safety and Health Act of 1977 ("Mine Act"). During the year ended December 31, 2016, neither the Corporation nor its subsidiaries operated a mine in the United States, and were not subject to regulation by MSHA under the Mine Act.

UNDERTAKING

The Corporation undertakes to make available, in person or by telephone, representatives to respond to inquiries made by the Commission staff, and to furnish promptly, when requested to do so by the Commission staff, information relating to: the securities registered pursuant to Form 40-F; the securities in relation to which the obligation to file an annual report on Form 40-F arises; or transactions in said securities.

CONSENT TO SERVICE OF PROCESS

Concurrently herewith, the Corporation is filing an updated Appointment of Agent for Service of Process and Undertaking on Form F-X with the SEC with respect to the class of securities in relation to which the obligation to file this annual report on Form 40-F arises. Any change to the name or address of the agent for service of process will be communicated promptly to the SEC by amendment to Form F-X referencing the Company's file number.

EXHIBIT INDEX

The following exhibits have been filed as part of this Annual Report on Form 40-F.

EXHIBITS

- 99.1 Annual Information Form of the Corporation for the year ended December 31, 2016
- 99.2 Consolidated Financial Statements for the years ended December 31, 2016 and 2015
- 99.3 Management's Discussion and Analysis for the year ended December 31, 2016

CERTIFICATIONS

- 99.4 Certificate of Chief Executive Officer Pursuant to Rule 13a-14(a) of the Exchange Act
- 99.5 Certificate of Chief Financial Officer Pursuant to Rule 13a-14(a) of the Exchange Act
- 99.6 Certificate of Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
- 99.7 Certificate of Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

CONSENTS

- 99.8 Consent of PricewaterhouseCoopers LLP, Independent Auditors
- 99.9 Consent of Gilles Arseneau, Ph.D., P.Geo.
- 99.10 Consent of Jeffrey B. Austin, P.Eng.
- 99.11 Consent of Torben Jensen, P. Eng.
- 99.12 Consent of R. Dennis Bergen, P.Eng.
- 99.13 Consent of David Farrow, Pr.Sci.Nat, P.Geo.
- 99.14 Consent of Alan McOnie, FAusIMM
- 99.15 Consent of Scott Smith, P.Eng.

SIGNATURES

Pursuant to the requirements of the Exchange Act, the Registrant certifies that it meets all of the requirements for filing on Form 40-F and has duly caused this annual report to be signed on its behalf by the undersigned, thereto duly authorized.

ALEXCO RESOURCE CORP.

By: /s/ Clynton R. Nauman
Name: Clynton R. Nauman
Title: President and Chief Executive Officer

Date: March 29, 2017

CERTIFICATION

I, Clynton R. Nauman, certify that:

1. I have reviewed this annual report on Form 40-F of Alexco Resource Corp.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;
4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and
5. The issuer's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: March 29, 2017

By: /s/ Clynton R. Nauman

Clynton R. Nauman
Chief Executive Officer

CERTIFICATION

I, Michael Clark, certify that:

1. I have reviewed this annual report on Form 40-F of Alexco Resource Corp.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of the issuer as of, and for, the periods presented in this report;
4. The issuer's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the issuer and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the issuer, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the issuer's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the issuer's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the issuer's internal control over financial reporting; and
5. The issuer's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the issuer's auditors and the audit committee of the issuer's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the issuer's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the issuer's internal control over financial reporting.

Date: March 29, 2017

By: /s/ Michael Clark

Michael Clark
Chief Financial Officer

CERTIFICATION PURSUANT TO
18 U.S.C. §1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the annual report of Alexco Resource Corp. (the "Corporation") on Form 40-F for the year ended December 31, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Clynton R. Nauman, Chief Executive Officer of the Corporation, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in this Report fairly presents, in all material respects, the financial condition and results of operations of the Corporation.

March 29, 2017

/s/ Clynton R. Nauman

Clynton R. Nauman
Chief Executive Officer

A signed original of this written statement required by Section 906 has been provided to Alexco Resource Corp. and will be retained by Alexco Resource Corp. and furnished to the Securities and Exchange Commission or its staff upon request.

CERTIFICATION PURSUANT TO
18 U.S.C. §1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the annual report of Alexco Resource Corp. (the "Corporation") on Form 40-F for the year ended December 31, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, David E. Whittle, Chief Financial Officer of the Corporation, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in this Report fairly presents, in all material respects, the financial condition and results of operations of the Corporation.

March 29, 2017

/s/ Michael Clark

Michael Clark
Chief Financial Officer

A signed original of this written statement required by Section 906 has been provided to Alexco Resource Corp. and will be retained by Alexco Resource Corp. and furnished to the Securities and Exchange Commission or its staff upon request.