

## REVISED ANNUAL INFORMATION FORM



**ALEXCO**

### **ALEXCO RESOURCE CORP.**

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For the year ended December 31, 2013

Dated March 25, 2014

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## PRELIMINARY NOTES

In this revised Annual Information Form (“AIF”), Alexco Resource Corp. is referred to as the “Corporation” or “Alexco”. All information contained herein is as at and for the year ended December 31, 2013, unless otherwise specified. All dollar amounts in this AIF are expressed in Canadian dollars unless otherwise indicated. This AIF has been revised only to correct a typographical error in the date at which it has been prepared, to read March 25, 2014 instead of March 25, 2013.

### Cautionary Statement Regarding Forward-Looking Statements

This AIF contains forward-looking statements within the meaning of the United States Private Securities Litigation Reform Act of 1995 and forward-looking information within the meaning of applicable Canadian securities laws (together, “forward-looking statements”) concerning 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 AIF. 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, 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 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 approvals or financing or in the completion of development activities. 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 this AIF under the heading “Description of the Business – Risk Factors” 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 AIF, the Corporation has applied several material assumptions, including, but not limited to, the assumption that: (1) the proposed development of its mineral projects will be viable operationally and economically and proceed as planned; (2) 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 December 31, 2013 financial statements; (3) the actual nature, size and grade of its mineral resources are materially consistent with the resource estimates reported in the supporting technical reports; and (4) any additional financing needed will be available on reasonable terms. Other material factors and assumptions are discussed throughout this AIF and, in particular, under the heading “Description of the Business – Risk Factors”.

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.

#### Cautionary Note to U.S. Investors – Information Concerning Preparation of Resource Estimates

This AIF has 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 from the definitions in the United States Securities and Exchange Commission’s (“**SEC**”) Industry Guide 7 under the United States Securities Act of 1933, as amended. Under SEC Industry Guide 7 standards, mineralization cannot be classified as a “reserve” unless the determination has been made that the mineralization could be economically and legally extracted at the time the reserve determination is made. As applied under SEC Industry Guide 7, 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 all necessary permits and government authorizations 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 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 concerning mineral deposits contained in this AIF 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.

#### Qualified Person Under NI 43-101

Except where specifically indicated otherwise, the disclosure in this AIF 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 Scott Smith, P.Eng., former Bellekeno Mine Manager, both of whom are Qualified Persons as defined by NI 43-101.

## GLOSSARY OF TECHNICAL TERMS

The following is a glossary of certain mining terms used in this AIF:

<b>Acre</b>	An area of 4,840 square yards or 43,560 square feet.
<b>Ag</b>	Silver.
<b>Assay</b>	In economic geology, to analyze the proportions of metal in a rock or overburden sample; to test an ore or mineral for composition, purity, weight or other properties of commercial interest.
<b>Au</b>	Gold.
<b>CIM</b>	Canadian Institute of Mining and Metallurgy.
<b>Deposit</b>	A mineralized body which has been physically delineated by sufficient drilling, trenching, and/or underground work, and found to contain a sufficient average grade of metal or metals to warrant further exploration and/or development expenditures; such a deposit does not qualify as a commercially mineable ore body or as containing ore reserves, until final legal, technical, and economic factors have been resolved.
<b>Dip</b>	The angle at which a stratum is inclined from the horizontal.
<b>Fold</b>	A bend in strata or any planar structure.
<b>g/t Au</b>	Grams per tonne gold.
<b>Grade</b>	The amount of valuable metal in each tonne of ore, expressed as grams per tonne (g/t) for precious metals, as percent (%) for copper, lead, zinc and nickel.
<b>Hectare</b>	An area equal to 100 meters by 100 meters.
<b>km</b>	Kilometers.
<b>m</b>	Meters.
<b>Mineral Reserve, Proven Mineral Reserve, Probable Mineral Reserve</b>	Under CIM standards, a Mineral Reserve is the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by a preliminary feasibility study or feasibility study. This study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

The terms “Mineral Reserve”, “Proven Mineral Reserve” and “Probable Mineral Reserve” used in this AIF are mining terms defined under CIM standards and used in accordance with NI 43-101. Mineral Reserves, Proven Mineral Reserves and Probable Mineral Reserves presented under CIM standards may not conform with the definitions of “reserves” or “proven reserves” or “probable reserves” under United States Industry Guide 7. See “Preliminary Notes – Cautionary Note to U.S. Investors – Information Concerning Preparation of Resource Estimates”.

Mineral Reserves under CIM standards are those parts of Mineral Resources which, after the application of all mining factors, result in an estimated tonnage and grade which, in the opinion of the qualified person(s) making the estimates, is the basis of an economically viable project after taking account of all relevant

processing, metallurgical, economic, marketing, legal, environment, socio-economic and government factors. Mineral Reserves are inclusive of diluting material that will be mined in conjunction with the Mineral Reserves and delivered to the treatment plant or equivalent facility. The term 'Mineral Reserve' needs not necessarily signify that extraction facilities are in place or operative or that all governmental approvals have been received. It does signify that there are reasonable expectations of such approvals.

Under CIM standards, Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proven Mineral Reserves. A Probable Mineral Reserve has a lower level of confidence than a Proven Mineral Reserve.

**Proven Mineral Reserve:** A Proven Mineral Reserve is the economically mineable part of a Measured Mineral Resource demonstrated by at least a preliminary feasibility study. This study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that the economic extraction can be justified.

**Probable Mineral Reserve:** A Probable Mineral Reserve is the economically mineable part of an Indicated and, in some circumstances, a Measured Mineral Resource demonstrated by at least a preliminary feasibility study. This study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that the economic extraction can be justified.

**Mineral Resource,  
Measured Mineral  
Resource, Indicated  
Mineral Resource,  
Inferred Mineral  
Resource**

Under CIM standards, Mineral Resource is a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the earth's crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.

The terms "mineral resource", "measured mineral resource", "indicated mineral resource", and "inferred mineral resource" used in this AIF are mining terms defined under CIM standards and used in accordance with NI 43-101. They are not defined terms under United States Industry Guide 7 and generally may not be used in documents filed with the SEC by U.S. companies. See "Preliminary Notes – Cautionary Note to U.S. Investors – Information Concerning Preparation of Resource Estimates".

A mineral resource estimate is based on information on the geology of the deposit and the continuity of mineralization. Assumptions concerning economic and operating parameters, including cut-off grades and economic mining widths, based on factors typical for the type of deposit, may be used if these factors have not been specifically established for the deposit at the time of the mineral resource estimate. A mineral resource is categorized on the basis of the degree of confidence in the estimate of quantity and grade or quality of the deposit, as follows:

**Inferred Mineral Resource:** Under CIM standards, an Inferred Mineral Resource is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes.

**Indicated Mineral Resource:** Under CIM standards, an Indicated Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

**Measured Mineral Resource:** Under CIM standards, a Measured Mineral Resource is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drill holes that are spaced closely enough to confirm both geological and grade continuity.

<b>Mineralization</b>	The concentration of metals and their chemical compounds within a body of rock.
<b>Ore</b>	A metal or mineral or a combination of these of sufficient value as to quality and quantity to enable it to be mined at a profit.
<b>Ounce or oz</b>	A troy ounce or twenty penny weights or 480 grains or 31.103 grams.
<b>Outcrop</b>	An exposure of bedrock at the surface.
<b>Pb</b>	Lead.
<b>Quartz</b>	A mineral composed of silicon dioxide.
<b>Strike</b>	Direction or trend of a geologic structure.
<b>Ton</b>	Also referred to as "short ton", a United States unit of weight equivalent to 2000 pounds.
<b>Tonne</b>	A metric unit of weight equivalent to volume multiplied by specific gravity; equivalent to 1.102 tons or 1,000 kilograms (2,204.6 pounds).
<b>Vein</b>	Thin sheet-like intrusion into a fissure or crack, commonly bearing quartz.
<b>Zn</b>	Zinc.



### **Metric Equivalents**

The following table sets forth the factors for converting between Imperial measurements and metric equivalents:

<b>To Convert From</b>	<b>To</b>	<b>Multiply By</b>
Feet	Meters	0.305
Meters	Feet	3.281
Miles	Kilometers (“ <b>km</b> ”)	1.609
Kilometers	Miles	0.6214
Acres	Hectares (“ <b>ha</b> ”)	0.405
Hectares	Acres	2.471
Grams	Ounces (Troy)	0.03215
Grams/Tonnes	Ounces (Troy)/Short Ton	0.02917
Tonnes (metric)	Pounds	2,205
Tonnes (metric)	Short Tons	1.1023

## CORPORATE STRUCTURE

The Corporation was incorporated under the *Business Corporations Act* (Yukon) on December 3, 2004 under the name "Alexco Resource Corp." Effective December 28, 2007, it was continued under the *Business Corporations Act* (British Columbia).

The Corporation's head office is located at Suite 1150, 200 Granville Street, Vancouver, British Columbia, V6C 1S4, Canada, and its registered and records office is located at 10th Floor, 595 Howe Street, Vancouver, British Columbia, V6C 2T5, Canada.

At the end of its most recently completed financial year, the Corporation had the following wholly-owned subsidiaries:

- Alexco Keno Hill Mining Corp., organized under the laws of British Columbia;
- Alexco Exploration Canada Corp., organized under the laws of British Columbia;
- Elsa Reclamation & Development Company Ltd., organized under the laws of Yukon ("**ERDC**");
- Access Mining Consultants Ltd., organized under the laws of Yukon ("**Access**");
- Alexco Resource U.S. Corp., organized under the laws of Colorado ("**Alexco US**"); and
- Alexco Financial Guaranty Corp., organized under the laws of Colorado.

Unless otherwise indicated or the context otherwise requires, reference to the term the "Corporation" or "Alexco" in this AIF includes Alexco Resource Corp. and its subsidiaries.

## GENERAL DEVELOPMENT OF THE BUSINESS

### Formation of the Corporation

In 2005, the Corporation completed a series of transactions pursuant to which it acquired a number of mineral property interests and rights to certain operating contracts in Yukon Territory and British Columbia, the most significant of which properties are located in Yukon Territory's Keno Hill Silver District.

### Three Year History and Significant Acquisitions

In June 2005, the Corporation was selected as the preferred purchaser of the assets of United Keno Hill Mines Limited and UKH Minerals Limited (collectively, "**UKHM**") by a court appointed interim receiver and receiver-manager of UKHM. In February 2006, following negotiation of a subsidiary agreement (the "**Subsidiary Agreement**") between the Government of Canada, the Government of Yukon (collectively, "**Government**") and the Corporation, the Supreme Court of Yukon conditionally approved the purchase of the assets of UKHM by Alexco through its wholly-owned subsidiary, ERDC, final closing of which acquisition was effected in December 2007. Under the terms of the Subsidiary Agreement, the Corporation is indemnified by the Government of Canada for all liabilities, including environmental liabilities, arising directly or indirectly as a result of the pre-existing condition of the Keno Hill mineral rights and other assets acquired from UKHM. The Subsidiary Agreement provides that ERDC may bring any mine into production on the UKHM Mineral Rights (as hereinafter defined) by designating a production unit from the mineral rights relevant to that purpose and then assuming responsibility for all costs of the production unit's water related care and maintenance and water related components of closure reclamation. The Subsidiary Agreement further requires ERDC to pay into a separate reclamation trust a 1.5% net smelter return royalty, up to an aggregate maximum of \$4 million for all production units, from any future production from the UKHM Mineral Rights, commencing once earnings from mining before interest, taxes and depreciation exceed actual exploration costs, up to a maximum of \$6.2 million, plus actual development and construction capital.

Also under the Subsidiary Agreement, ERDC is retained through Government as a paid contractor responsible on a continuing basis for the environmental care and maintenance and ultimate closure reclamation of the former UKHM Mineral Rights. The original Subsidiary Agreement provided that ERDC

was responsible for the development of the ultimate closure reclamation plan for fees of 65% of agreed commercial contractor rates, and this plan development is currently ongoing. Upon acceptance and regulatory approval, the closure reclamation plan will be implemented by ERDC at full agreed commercial contractor rates. During the period required to develop the plan, the original Subsidiary Agreement also provided that ERDC was responsible for carrying out the environmental care and maintenance of the UKHM Mineral Rights for a reducing fixed annual fee adjusted each year for certain operating and inflationary factors.

In July 2013, an amended and restated Subsidiary Agreement (the “**ARSA**”) was executed with the Government of Canada. Recognizing that developing the closure reclamation plan is more complicated than originally anticipated, the ARSA provides for the Government of Canada to contribute a higher proportion of closure plan development costs than provided for under the Subsidiary Agreement, retroactive to 2009. Going forward, ERDC will receive 95% of agreed commercial contractor rates for ongoing development of the closure reclamation plan. Furthermore, with respect to care and maintenance activity during the closure reclamation planning phase, the original reducing fee scale is replaced by a fixed fee of \$850,000 per year, representing approximately 50% of estimated fully-billable care and maintenance fees.

Since 2006, the Corporation has carried out exploration activities on several of its properties within the Keno Hill District, with a significant component of that activity having been focused on the Bellekeno property. A development plan in respect of Bellekeno (the “**Bellekeno Development Plan**”) (see “Description of the Business – Bellekeno Mine Operations”) was completed in November 2009 and supported by an NI 43-101 compliant technical report, outlining a project with a pre-tax net present value to Alexco of \$31.9 million over an initial mine life of approximately four years. Development and construction of the Bellekeno mine was initiated immediately, and effective January 1, 2011, commercial production at Bellekeno was declared to have commenced.

On October 2, 2008 (with subsequent amendments on October 20, 2008, December 10, 2008, December 22, 2009, March 31, 2010, January 15, 2013 and March 11, 2014), the Corporation entered into a silver streaming interest agreement with Silver Wheaton Corp. (“**Silver Wheaton**”) under which Silver Wheaton will receive 25% of the life of mine silver produced by the Corporation from its Keno Hill Silver District properties. The agreement anticipated that the initial silver deliveries would come from the Bellekeno property.

Under the agreement, the Corporation received up-front deposit payments from Silver Wheaton totaling US\$50 million, plus receives further payments of the lesser of US \$3.90 (increasing by 1% per annum after the third year of full production) and the prevailing market price for each ounce of payable silver delivered, if as and when delivered.

As of September 2013, Bellekeno mining operations were suspended in light of a sharply reduced silver price environment. In December 2013, Alexco completed an NI 43-101 compliant preliminary economic assessment for certain of its holdings in the eastern portion of the Keno Hill Silver District (“**EKHSD**” and the “**EKHSD PEA**”). The EKHSD PEA is focused on production from the Flame & Moth deposit and consolidates supplemental production initially from the Bellekeno deposit and subsequently from the Lucky Queen deposit. It reflects one of a number of production strategies considered, and work remains ongoing to optimize the plan inputs.

Other material properties within the Keno Hill District include Onek, Birmingham and the Elsa Tailings property. Resource estimates have been published on each of these properties variously between 2010 and 2013, with each such estimate supported by an NI 43-101 compliant technical report.

Further particulars relating to the Corporation’s mineral property interests, including the above-referenced technical reports, are described below under “Description of the Business” with respect to “Eastern Keno Hill Silver District” and “Other Keno Hill District Properties”.

In addition to the mining business described above, the Corporation also operates an environmental services business through its Alexco Environmental Group division (“**AEG**”). Primarily through Access, Alexco US and ERDC, AEG provides a variety of mine and industrial site related environmental services including management of the regulatory and environmental permitting process, environmental assessments and reclamation and closure planning. The AEG operations also include the care and maintenance and

closure reclamation activities being conducted by the Corporation in the Keno Hill District under the Subsidiary Agreement. Alexco also owns certain patents (the “**Patents**”) registered or in the process of being registered in the U.S., Canada and various other countries around the world, with terms that expire variously between 2015 and 2020. The Patents generally pertain to the in situ immobilization of metals, and are specifically suited to mine closure related remediation.

Further particulars relating to the business of AEG, including activities being conducted under the Subsidiary Agreement, are described below under “Description of the Business – Environmental Services”.

## **DESCRIPTION OF THE BUSINESS**

The Corporation operates two principal businesses: a mining business, comprised of mineral exploration and mine development and operation in Canada, primarily in Yukon Territory; and through AEG an environmental services business, providing consulting, remediation solutions and project management services in respect of environmental permitting and compliance and site remediation, in Canada, the United States and elsewhere.

At December 31, 2013, the Corporation had 63 permanent and seasonal employees. A total of 4 were employed in the care and maintenance of the Bellekeno mine and mill site care and maintenance, and a further 5 were employed in mineral exploration and evaluation activities. A total of 44 were employed in the environmental services business, with the remaining 10 employed in respect of executive management and administrative support. Significant aspects of both the mining business and the environmental services business require specialized skills and knowledge in areas that include geology, mining, metallurgy, engineering, environmental contamination treatment, permitting and regulatory compliance, as well as environmental and social policy issues. In the period 2010 through 2012, skill shortages within the mining industry in general, and particularly within Yukon Territory, made it more challenging to recruit and retain qualified employees in these fields. Alexco was generally successful in recruiting and retaining the key personnel necessary to its operating needs, though recruitment of skilled mill operators was an ongoing challenge for Bellekeno mine operations through mid 2012. By the end of 2012, the mill work force complement had stabilized. However, recruitment and retention of qualified employees in the mining sector remains a risk factor, and a re-start of Alexco’s mining operations will necessitate the re-hiring of mine and mill personnel.

The Corporation’s principal mining business activities are currently being carried out within the Keno Hill District in Yukon Territory. The Keno Hill District is a storied silver mining region in Canada, encompassing over 35 former mines that produced variously from approximately 1918 through 1988, with published information from the Yukon Government’s Minfile database reporting more than 217 million ounces of silver produced at average grades of 40.5 ounces per ton silver, 5.6% lead and 3.1% zinc.

The Corporation’s mineral property holdings within the District span a significant majority of the regional area, and most of the former mines. The EKHSD property comprises the Flame & Moth, Bellekeno and Lucky Queen deposits. Resource estimates have also been prepared with respect to the Onek, Bermingham properties and Elsa Tailings properties. The Corporation holds several other property interests within the District, including but not limited to the Silver King, Husky and McQuesten properties, which may potentially become material properties depending on the results of exploration programs the Corporation may carry out on them in the future. In aggregate, Alexco’s various mineral properties within the Keno Hill District are comprised of mineral rights totaling approximately 717 surveyed quartz mining leases, 879 unsurveyed quartz mining claims, eight placer claims and two crown grants, in addition to five fee simple lots and seven surface leases. Of those, the mineral rights acquired from UKHM (the “**UKHM Mineral Rights**”) and therefore subject to the capped 1.5% net smelter return royalty provided for under the Subsidiary Agreement (see “General Development of the Business – Three Year History and Significant Acquisitions”) total 675 quartz mining leases, 121 quartz mining claims and two crown grants.

Other non-material mineral property interests of the Corporation include the Sprogge and Harlan properties in the Yukon, and certain net smelter return royalties in respect of the Brewery Creek and Ida-Oro (formerly Klondike) properties in the Yukon and the Telegraph Creek, Iskut River, Kiniskan Lake and Manson Creek properties in British Columbia.

On February 15, 2012, the Corporation entered into a sales and purchase agreement to sell 100% of its interest in the Brewery Creek property to an unrelated third party, Golden Predator Corp. (now Americas Bullion Royalty Corp.). Effective September 26, 2012, the sale was completed, for proceeds of \$3,205,000 cash plus 7,500,000 common shares of Americas Bullion Royalty Corp. and purchase warrants to acquire a further 3,750,000 common shares for a price of \$1.15 per share at any time until September 25, 2014, as well as a net smelter return royalty on gold production from Brewery Creek of between 2% and 2.75%.

## **Eastern Keno Hill Silver District**

### ***Bellekeno Mining Operations***

Construction of the Bellekeno mine was initiated in November 2009 based on the Bellekeno Development Plan, and commercial production was declared to have been achieved as of January 1, 2011. Bellekeno is an underground mine, with mining and milling operations being carried out year-round. While winter operations generally have some seasonal impact on costs and production rates, the impact is not typically significant. Mining is being accomplished by a mining contractor, predominantly using mechanized and conventional cut-and-fill methods and, more latterly, long-hole mining methods of ore extraction.

Sharp and significant declines in precious metal prices occurred over the course of the second quarter of 2013, with silver declining from US\$28.64 at the beginning of the quarter to \$18.86 at June 30. At the end of May 2013, following an initial sharp decline in silver prices during April, the Corporation announced it was implementing cost savings measures, including workforce reductions, a capital projects roll-back, vendor discussions, deferral of new mine commissioning and executive and board remuneration cutbacks. A second sharp decline in silver prices then occurred in mid June. As a result, the Corporation announced in July that it was beginning preparations to undergo a temporary and orderly suspension of operations at the Bellekeno mine prior to the onset of winter, and mining and milling operations were completed by early September. Mining operations remain suspended, and re-start is dependent on a number of factors, including sustained improvements in silver markets and the effectiveness of cost structure reduction measures.

Bellekeno produces a silver-lead concentrate and a zinc-silver concentrate, both readily marketable with no notable deleterious elements. Both concentrates are delivered via truck and barge to a smelter located in British Columbia under annually rolling off-take agreements with Glencore Ltd., Stamford, a branch of a wholly owned subsidiary of the Swiss-based international natural resources group Glencore International AG. All Bellekeno revenue is derived from sales to external unrelated parties.

The primary permits under which the Bellekeno mine operates in Yukon Territory are a Quartz Mining License and a Type A Water Use License. Bellekeno is currently in material compliance with the terms of these permits and with environmental regulations to which it is subject generally. These permits and regulations impose ongoing environmental protection and monitoring requirements on the mine operation, the impact of which on the capital expenditures, earnings and competitive position of Bellekeno are materially consistent with those anticipated under the Bellekeno Development Plan.

### ***EKHSD PEA***

In December 2013 Alexco completed an NI 43-101 compliant preliminary economic assessment for certain of its holdings in the EKHSD. The EKHSD PEA is focused on production from the Flame & Moth deposit and consolidates supplemental production initially from the Bellekeno deposit and subsequently from the Lucky Queen deposit. It reflects one of a number of production strategies considered, and work remains ongoing to optimize the plan inputs. It is anticipated that one of the most significant factors that may lead to an improvement in the underlying fixed cost structure of the Keno Hill District mining operations will be an increase in mill throughput to full capacity of 407 tonnes per day.

The Corporation's 100% owned EKHSD property encompasses the Bellekeno, Flame & Moth and Lucky Queen deposits and comprises 164 surveyed quartz mining leases and 33 unsurveyed quartz mining claims, the majority of which are UKHM Mineral Rights. Prior to their amalgamation within EKHSD, each of the deposits was a separate property and had been subject to numerous technical reports, all filed on the SEDAR website at [www.sedar.com](http://www.sedar.com) and all NI 43-101 compliant. All of these past technical reports have now been superseded by current EKHSD PEA technical report, filed on SEDAR and dated

December 5, 2013, entitled "Updated Preliminary Economic Assessment for the Eastern Keno Hill Silver District Project – Phase 2, Yukon, Canada". The EKHSD PEA was compiled by SRK Consulting (Canada) Inc. ("SRK") with contributions from a team of qualified persons.

The EKHSD PEA outlines a project with an initial nine-month construction period followed by a 5.5 year period of silver production anchored by the Flame & Moth deposit. It provides for an annual delivery of an average of 3.1 million ounces of payable silver, 6.8 million pounds of lead, 6.6 million pounds of zinc and 1,050 ounces of gold from approximately 150,000 tonnes per year of consolidated mine and mill production. The after-tax internal rate of return is 38% and the after-tax net present value at a 5% discount rate is \$29.6 million, with a 3.5 year payback period. In order to fund the \$45.3 million initial capital program envisioned in the EKHSD PEA, an initial investment of approximately \$25 million will be required with the balance forecast under the EKHSD PEA to be funded from operating cash flows. Roughly half of the \$45 million capital program will be deployed to drive an initial decline and raise and establish underground infrastructure at the Flame & Moth deposit. Approximately 17% or 163,000 tonnes of mineable resource, primarily at Bellekeno and Flame & Moth, has been eliminated from the PEA mine plan and remains to be considered should underlying costs and obligations be further optimized.

The consolidated mine production under the EKHSD PEA is primarily derived from indicated mineral resources, though approximately 6% is derived 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.

Under the EKHSD PEA, Flame & Moth mineral resources are estimated with an effective date of January 30, 2013 at 1,378,000 tonnes indicated grading 516 grams per tonne silver, 1.72% lead and 5.70% zinc plus another 107,000 tonnes inferred grading 313 grams per tonne silver, 0.86% lead and 4.21% zinc. The Bellekeno mineral resources are based on a geologic resource estimate having an effective date of May 31, 2012, with the indicated resources as at September 30, 2013 and reflecting the geologic resource less estimated subsequent depletion from mine production (Scott Smith is the qualified person responsible for the subsequent depletion of the May 31, 2012 indicated resources for production through September 30, 2013). The Bellekeno mineral resource estimate comprises 262,000 tonnes indicated grading 585 grams per tonne silver, 3.5% lead and 5.3% zinc plus another 243,000 tonnes inferred grading 428 grams per tonne silver, 4.1% lead and 5.1% zinc. The Lucky Queen mineral resources are estimated with an effective date of July 27, 2011 at 124,000 tonnes indicated grading 1,227 grams per tonne silver, 2.57% lead and 1.72% zinc plus another 150,000 tonnes inferred grading 571 grams per tonne silver, 1.37% lead and 0.92% zinc.

The detailed disclosure contained in the EKHSD PEA is hereby incorporated by reference, and the summary section from that report is reproduced as follows.

## **1 Summary**

### **1.1 Introduction**

Alexco Resource Corp. (Alexco) owns 100 percent (%) of the historic Keno Hill silver district, located in Yukon, Canada. It is comprised of polymetallic silver-lead-zinc deposits occurring in the historic Keno Hill silver district located in the vicinity of the village of Keno City, Yukon. There are approximately 30 known deposits in the area, many of which have been subject to small scale mining operations over the last century, and numerous prospects.

Alexco's objective is to unlock value in the silver-rich Keno Hill silver district, and is focused on growth by advancing its promising district properties to development decisions.

The Bellekeno mine is one of several mineral properties held by Alexco within the Keno Hill silver district. The Bellekeno mine, which commenced commercial production at the beginning of calendar year 2011, operated as Canada's only primary silver mine until operations were temporarily suspended by Alexco at the end of August 2013 (refer to Alexco's July 17, 2013 news release).

The current status of Alexco's more advanced properties within the Keno Hill silver district are listed below:

- Bellekeno mine: In production since 2011 until temporary suspension of operations at the end of August 2013. This preliminary economic assessment (PEA) assumes that production stoping will re-start January 1, 2015;
- Lucky Queen mine: Reconditioning and development work was undertaken from early 2012 into Q2 2013, with operations temporarily suspended in March 2013. The PEA assumes that pre-production development work will re-start in Q2 2016;
- Onek mine: Development work was undertaken from late 2012 into Q2 2013, with operations temporarily suspended at the end of May 2013. Onek is not included in the production plan presented in this PEA report;
- Flame & Moth deposit: Scoping level mine planning work has been completed by SRK Consulting (Canada) Inc. (SRK), and an internal company report has been provided to Alexco. Alexco is working toward the initiation of the permitting process. The PEA assumes that pre-production development work will begin April 1, 2014;
- Bermingham deposit: A historical, small scale silver producer, where additional exploration drilling has been done by Alexco and an updated resource block model has been completed. No mine planning has been completed on the new mineral resources. This deposit is not considered in this PEA report.

This PEA is based on Alexco's plan to resume underground development activities in the eastern part of the Keno Hill silver district, specifically at the Bellekeno and Lucky Queen mines and the Flame & Moth deposit beginning April 1, 2014, followed by the commencement of production stoping and processing on January 1, 2015. The project describing the development and production plans for these three properties that support the long range feed schedule for Alexco's mill facility is referred to as the Eastern Keno Hill Silver District Project – Phase 2, which in this report is abbreviated as the EKHSD project.

These deposits have mineral resource block models that were constructed using a geostatistical block modelling approach with the mineralization constrained by wireframes. Mineral resources are classified as Indicated or Inferred following the CIM *Definition Standards for Mineral Resources and Mineral Reserves* (CIM, 2010).

An updated mineral resource model for the Bellekeno deposit was constructed by Alexco during the third quarter of 2012 under the supervision of David Farrow, BSc (Hons), GDE, PrSciNat, PGeo (BC), a third party consulting geologist.

A mineral resource estimate for the Lucky Queen deposit was previously prepared by SRK and published in an independent technical report on September 8, 2011 entitled "Technical Report on the Lucky Queen Deposit, Lucky Queen Property, Keno Hill District, Yukon" (SRK, 2011a).

In 2013, a mineral resource block model for the Flame & Moth deposit was constructed by Alexco under the supervision of Mr. Farrow. The mineral resource estimate is documented in a March 15, 2013 technical report entitled "Updated Technical Report on the Flame & Moth Property, Keno Hill District, Yukon" (Farrow and McOnie, 2013).

This technical report documents the context and assumptions required to develop the economic analysis to support the PEA based on these three mineral resource estimates. The report was prepared following the guidelines of the Canadian Securities Administrators National Instrument 43-101 and Form 43-101F1, and it is in conformity with the generally accepted *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* (CIM, 2003).

## **1.2 Property Description and Ownership**

The Bellekeno, Lucky Queen, and Flame & Moth deposits are near the village of Keno City, approximately 350 kilometres (km) north of Whitehorse, Yukon, within the EKHSD. Alexco's administration and camp facilities are located at the historic company town of Elsa, which is accessible from Whitehorse via a 460 km all-weather road and by air via the Mayo airport, which is some 40 km to the southwest. A gravel road known as the Silver Trail connects Mayo to the project area and the village of Keno City.

Alexco currently maintains a sizable land position in the Keno Hill silver district, including the Bellekeno, Lucky Queen, and Flame & Moth deposits. Mineral exploration at Keno Hill silver district is permitted under the terms and conditions set out by the Yukon Government in the Class IV Quartz Mining Land Use Permit – LQ00240, issued on June 17, 2008 and valid until June 16, 2018.

Central Yukon is characterized by a subarctic continental climate with cold winters and warm summers. Average temperatures in the winter are between -15 and -20 degrees Celsius (°C) while summer temperatures average around 15°C. Exploration and mining work can be carried out year-round. The landscape around the Keno Hill silver district is characterized by rolling hills and mountains with a relief of up to 1,600 metres (m).

### **1.3 History**

The Keno Hill mining camp area has a rich history of exploration and mining with 21 deposits having documented silver production in excess of 3,110 kilograms (100,000 ounces). Silver was first found in 1901 but small-scale mining only began in 1913. High silver prices at the end of World War I led to renewed and ultimately successful exploration activity in the area. Since then, at least 65 deposits and prospects have been identified within the area. Many small silver deposits were mined independently of each other throughout the area between 1913 and 1925.

The Treadwell Yukon Company Limited (TYC) consolidated a number of small mines and properties in the area in the 1920s. TYC continued to be the dominant company in the mining camp until it ceased operations in 1942 upon the untimely death of its founder Livingston Wernecke.

Keno Hill Mining Company Limited (KHM) acquired the interests formerly controlled by TYC in 1945. KHM was reorganized in November 1947 as United Keno Hill Mines Limited (UKHM) and by 1958 UKHM had acquired several properties, interests in properties, and other companies, including the assets of Galkeno Mines Limited and Canadian Northwest Mines and Oil.

Ventures Limited (later Falconbridge Nickel Mines Limited and Falconbridge Limited) acquired a controlling interest in UKHM in 1960 and assumed management control.

UKHM ceased all production in the area in 1989 and placed the active mines on care and maintenance, but continued to conduct limited underground exploration and development at the Bellekeno and Silver King mines. On February 18, 2000, UKHM was granted bankruptcy protection with PricewaterhouseCoopers Inc. (PwC) being appointed by the court as the interim receiver and receiver-manager of UKHM in 2001.

In June 2005, Alexco was selected as the preferred purchaser of the assets of UKHM by PwC. In February 2006, Alexco's purchase of UKHM's assets through a wholly-owned subsidiary, Elsa Reclamation & Development Company Ltd. (ERDC), was approved. Under the Keno Hill Subsidiary Agreement, ERDC is indemnified against all historical liability, has property access for exploration and future development, and is not required to post security against pre-existing liabilities. ERDC received a water licence from the Yukon government in November 2007, giving Alexco free and clear title to surface and subsurface claims, leases, free-hold land, buildings, and equipment at the Keno Hill silver district.

Alexco embarked on an aggressive surface exploration program in 2006 with continued yearly exploration programs through 2013. The Bellekeno mine reached commercial production in January 2011 with at a nominal rate of 250 tonnes per day (tpd).

### **1.4 Regional and Local Geological Setting**

The Keno Hill mining camp is located in the northwestern part of the Selwyn Basin in an area where the northwest-trending Robert Service Thrust Sheet and the Tombstone Thrust Sheet overlap. The area is underlain by Upper Proterozoic to Mississippian rocks that were deposited in a shelf environment during the formation of the northern Cordilleran continental margin. The area underwent regional compressive tectonic stresses during the Jurassic and the Cretaceous, producing thrusts, folds, and penetrative fabrics of various scales.

The Robert Service Thrust Sheet lying to the south of the Keno Hill silver district is composed of Late Proterozoic to Cambrian coarse grained quartz rich turbidite succession with interbedded shales and locally limestone of the Hyland Group, Yusezyu Formation.

The Tombstone Thrust Sheet that lies to the north and underlies the Keno Hill silver district consists of Devonian phyllite, felsic meta-tuffs, and metaclastic rocks of the Earn Group that is conformably overlain by the Mississippian Keno Hill Quartzite. This latter unit is locally thickened due to folding and/or thrusting and is the predominant host of the silver-lead-zinc mineralization of the Keno Hill district. Four intrusive suites intrude the sedimentary sequence:



- Late Triassic gabbro to diorite sills;
- Early Cretaceous Tombstone granite to granodiorite;
- Mid Cretaceous diabase dykes and sills;
- Upper Cretaceous McQuesten peraluminous porphyritic granite.

The Mississippian Keno Hill Quartzite is composed of a thick Basal Quartzite Member that is overlain by the Sourdough Hill Member. The sequence was metamorphosed to greenschist facies during the Cretaceous. The Basal Quartzite Member is up to 1100 m thick and comprises quartzite interbedded with minor graphitic phyllite and is intruded by Triassic greenstone sills. The Basal Quartzite Member is the dominant host to the silver mineralization in the Keno Hill silver district. The overlying Sourdough Hill Member comprises graphitic and sericitic phyllite, chloritic quartz augen phyllite, and thin limestone units. To the south, the Robert Service Thrust Fault separates the Keno Hill Quartzite from the overthrust Upper Proterozoic Hyland Group, which is comprised of predominantly meta-sedimentary chlorite and quartz-rich schist. The Keno Hill Quartzite is intruded by quartz-feldspar aplite sills or dykes that are correlated with the Early Cretaceous intrusive suite found elsewhere in the district.

Three phases of folding are identified in the Keno Hill silver district. The two earliest phases consist of isoclinal folding with subhorizontal, east- or west-trending fold axes. The later phase consists of a subvertical axial plane and moderate southeast-trending and plunging fold axis. In the Keno Hill silver district, the first phases of folding formed three structurally dismembered isoclinal folds of which the Basal Quartzite Member outlines synforms at Monument Hill where the Lucky Queen mine is located and at Caribou Hill, while the Bellekeno mine and the Flame & Moth prospect are located on the limb of a third dismembered syncline between Galena Hill and Sourdough Hill.

Within the Keno Hill silver district, up to four periods of faulting are recognized. The oldest fault set consists of south-dipping foliation-parallel structures that developed contemporaneously with the first phase folding. The Robert Service Thrust Fault truncates the top of the Keno Hill Quartzite and sets the Precambrian schist of the Yusezyu Formation of the Hyland Group above the Mississippian Sourdough Hill Member of the Keno Hill Quartzite. The mineralization in the Keno Hill silver district is hosted by a series of northeast-trending pre- and syn- mineral vein faults that display apparent left lateral normal displacement. These are commonly offset by post-mineralization high angle cross faults, low angle faults, and bedding faults. Most commonly, these comprise northwest-striking cross faults that show apparent right-lateral displacement.

### **1.5 Deposit Types and Mineralization**

The Keno Hill silver district is a polymetallic silver-lead-zinc vein district with characteristics analogous to Kokanee Range (Slocan), British Columbia; Coeur d'Alene, Idaho; Freiberg and the Harz Mountains, Germany; and Příbram, Czech Republic. Common characteristics include the proximity to crustal-scale faults, affecting thick clastic metasedimentary rocks, and intrusion of felsic rocks that may have acted as a heat source driving the hydrothermal system. In the Keno Hill silver district, the largest accumulation of silver, lead, and zinc minerals occurs in faults in structurally prepared competent rocks.

In general, gangue minerals include manganiferous siderite, minor calcite, and quartz. Silver occurs in argentiferous galena and argentiferous tetrahedrite. In supergene assemblages, silver can be native or in polybasite, stephanite, and pyrargyrite. Lead occurs in galena, and zinc in iron-rich sphalerite. Other sulphides include minor pyrite, arsenopyrite, and chalcopyrite.

At the district scale, the hydrothermal system exhibits sharp lateral mineralogical changes equivocally associated with temperature gradients around magmatic rocks. The hydrothermal veins also exhibit sharp vertical mineralogical zoning, historically interpreted to be lead-rich at the top to more zinc-rich at depth.

### **1.6 Exploration Status**

Most past exploration work in the Keno Hill silver district was conducted as support to the mining activities until the mines closed in 1989. This historic work involved surface and underground drilling designed to explore areas surrounding the main underground working areas.

The current exploration program conducted by Alexco is the first comprehensive exploration effort in the Keno Hill silver district since 1997. Alexco has conducted surface diamond drilling programs in the district every year since 2006.

No additional surface drilling has been completed on the Lucky Queen deposit since the independent technical report was published as the intent was to access the orebody and begin development. The updated mineral resource estimate on the Bellekeno deposit incorporated the knowledge gained in the last three years of production and the results of additional underground and surface exploration drilling. The Flame & Moth updated resource estimate incorporated all drilling completed through to the end of 2012.

### **1.7 Development and Operations Status**

Commercial production started at the Bellekeno silver mine on January 1, 2011 and continued at a nominal rate of 250 tpd with some 158,346 tonnes (t) being milled in 2011 and 2012. The average head grades for this period have been 794 gpt silver, 9.9% lead, and 5.3% zinc. Operations at the site were temporarily suspended at the end of August 2013. The following is an excerpt from Alexco's July 17, 2013 news release.

*"...Alexco has developed a contingency plan to operate through the summer while beginning preparations to undergo a temporary and orderly suspension of operations at the Bellekeno mine and mill prior to the onset of winter. This avoids selling silver at current or weaker market prices, and positions the mine and mill for a re-opening after the winter, assuming the silver market has improved from current levels and underlying fixed costs have been reduced. Alexco plans to use the winter period to significantly restructure the underlying fixed costs at Keno Hill, as well as refine plans for a production ramp-up to 400 tonnes per day in the 2014 -- 2015 time period."*

Readers are referred to the complete text of the July 17, 2013 news release, available on Alexco's website [www.alexcoresource.com](http://www.alexcoresource.com).

This PEA is based on Alexco's plan to resume production in the eastern portion of the Keno Hill silver district on January 1, 2015 and it describes mining plans for the Bellekeno and Lucky Queen mines, and the Flame & Moth deposit.

The permit and amendments to existing permits required to bring the Lucky Queen deposit into commercial production were received in Q4 2012.

Development of the Lucky Queen deposit began in January 2012 with Alexco re-establishing the existing portal, installing services, and beginning rehabilitation of the existing drift, which was driven in the 1980's by UKHM. Reconditioning of this drift has progressed more slowly than planned with a bypass driven in one caved area, and ice occupying much of the 1,000 m length ultimately reconditioned. Despite these setbacks, the reconditioning was advanced to the planned ramp collar location prior to receiving the required permits and underground development began in early November 2012. The project was temporarily suspended in early March 2013, partly due to a need to amend the mining licence to allow storage of waste rock at the site to reduce waste haulage and storage constraints. The amendment is due to be filed prior to resuming production. The project is planned to resume during Q2 2016 and this is reflected in the PEA schedules and economic analysis.

Preliminary mine planning has been completed for the Flame & Moth deposit, and permitting for production at Flame & Moth is scheduled to begin in Q4 of 2013.

Mined tonnes produced from these three mine sites will be trucked to Alexco's nearby 400 tpd mill facility as scheduled in the PEA life-of-mine (LoM) plan.

Development of the Onek deposit began in August 2012 with the building of a new road to access the proposed portal collar location, construction of a new haul road, excavation of the portal bench, establishing the ramp face, and the installation of ground support and services. The first ramp round was taken in early November 2012 and underground development began with the goal of reaching the target vein at the 960 elevation. On May 31, 2013, Alexco announced that operations at Onek would be temporarily suspended. Onek is not included in the PEA production plan.

### **1.8 Mineral Resources and Mineral Reserve Estimates**

This PEA technical report is based on mineral resource estimates for three deposits that are part of Alexco's EKHSD project:

- Bellekeno deposit;
- Lucky Queen deposit;
- Flame & Moth deposit.

The mineral resources have been estimated in conformity with the generally accepted CIM *Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines* (CIM, 2003) and are reported in accordance with the Canadian Securities Administrators' National Instrument 43-101. Mineral resources are not mineral reserves and have not demonstrated economic viability. There is no certainty that all or any part of the mineral resource will be converted into mineral reserve.

In the opinion of SRK, the resource evaluations reported herein are a reasonable representation of the global polymetallic mineral resources in the Bellekeno and Lucky Queen mines, and Flame & Moth deposit at the current level of sampling.

### 1.8.1 Bellekeno Mineral Resources

The updated Bellekeno Mineral Resource Statement (Table 1-1) presented herein represents the third mineral resource evaluation prepared for the Bellekeno deposit in accordance with the Canadian Securities Administrators' National Instrument 43-101. The mineral resource model was prepared by Alexco personnel under the supervision of a third party consulting geologist David Farrow, BSc (Hons), GDE, PrSciNat, PGeo (BC), of GeoStrat Consulting Services Inc. The model considers 405 core drill holes drilled by Alexco during the period of 2006 to 2012 as well as historical drilling and chip data collection during production both historically and by Alexco. The resource estimation work was completed by Mr. Farrow, a Qualified Person as defined in National Instrument 43-101.

**Table 1-1: Updated Mineral Resource Statement for the Bellekeno Deposit, September 30, 2012**

<b>Class</b>	<b>Tonnes</b>	<b>Ag (gpt)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
Indicated*	365,000	658	5.3	5.3
Inferred*	243,000	428	4.1	5.1

\* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

\*\* Reported at a cut-off value of C\$185 (US\$1 = C\$1)/t using consensus long term metal prices (US\$) and recoveries of Ag US\$22.50/oz, recovery 96%; Pb US\$ 0.85/lb, recovery 97%; Zn US\$ 0.95/lb, recovery 88%; Ag grades capped at 5,000 gpt.

SRK notes that since the date of the Bellekeno deposit mineral resource statement, Alexco reports actual tonnes processed from the Bellekeno mine of 124,000 t at average grades of 701 gpt silver, 8.3% lead, and 4.3% zinc (from June 1, 2012 to the temporary shutdown on September 1, 2013).

### 1.8.2 Lucky Queen Mineral Resources

The mineral resource estimate for the Lucky Queen deposit was previously prepared by SRK and published in an independent technical report on September 8, 2011 entitled "Technical Report on the Lucky Queen Deposit, Lucky Queen Property, Keno Hill District, Yukon," which is available on SEDAR.

The Mineral Resource Statement from this report is restated below.

**Table 1-2: Mineral Resource Statement for the Lucky Queen Deposit, July 27, 2011**

<b>Class</b>	<b>Tonnes</b>	<b>Ag (gpt)</b>	<b>Au (gpt)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
Indicated*	124,000	1,227	0.17	2.57	1.72
Inferred*	150,000	571	0.16	1.37	0.92

\* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

\*\* Reported at a cut-off value of \$185 (US\$1 = C\$1)/t using long term metal prices (US\$) and recoveries developed for the nearby Bellekeno deposit (Ag US\$18.50/oz, recovery 96%; Pb US\$ 0.90/lb, recovery 97%; Zn US\$ 0.95/lb, recovery 88%; Au US\$ 1,100/oz, recovery 72%). Ag grades capped at 6,300 gpt; Pb capped at 14.8%, Zn capped at 7%, Au grades capped at 2 gpt.

### 1.8.3 Flame & Moth Mineral Resources

The mineral resource estimate for the Flame & Moth deposit was previously prepared by Alexco under the supervision of Mr. Farrow and published in the technical report entitled "Updated Technical

Report on the Flame & Moth Deposit, Flame & Moth Property, Keno Hill District, Yukon” (Farrow and McOnie, 2013) on March 15, 2013, which is available on SEDAR.

The Mineral Resource Statement from this report is restated below.

**Table 1-3: Mineral Resource Statement for the Flame & Moth Deposit, January 30, 2013**

<b>Class</b>	<b>Tonnes</b>	<b>Ag (gpt)</b>	<b>Au (gpt)</b>	<b>Pb (%)</b>	<b>Zn (%)</b>
Indicated*	1,378,000	516	0.42	1.72	5.70
Inferred*	107,000	313	0.27	0.86	4.21

\* Mineral resources are not mineral reserves and have not demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

\*\* Reported at a cut-off value of \$185 (US\$0.96 = C\$1)/t using consensus long term metal prices (US\$) and recoveries developed for the nearby Bellekeno deposit (Ag US\$24.00/oz, recovery 96%; Pb US\$ 0.85/lb, recovery 97%; Zn US\$ 0.95/lb, recovery 88%; Au US\$ 1,400/oz, recovery 72%). For all veins, Ag grades capped at 3,000 gpt; Pb and Zn capped at 15% and 20%, respectively; Au grades not capped.

#### 1.8.4 Mineral Reserves

This PEA does not support a mineral reserve estimate. The “potentially mineable tonnes” on which the economic evaluation is based include both Indicated and Inferred mineral resources from all three deposits.

### 1.9 Mining

#### 1.9.1 Mine Geotechnical and Hydrogeology

- The Keno Hill silver district is known for locally challenging ground conditions that limit the choice of mining methods to fully supported methods with limited spans such as cut and fill and small scale longhole stoping with backfill;
- The Bellekeno mine was in production for close to three years. In that time, Alexco has successfully gained an understanding of the structural context of the deposit, how the ground responds to mining, and the best means of controlling the ground;
- Alexco has developed detailed and effective standards for ground support;
- In all mining areas, weak, wet ground conditions will result in elevated mining risk. Areas exhibiting these conditions will need to be exposed early and dewatered;
- The Flame & Moth deposit is in part situated below the floor of a valley and there is potential for water ingress from faulting, overburden materials, and surface water features.

#### 1.9.2 Mining

- Planned underground mining methods include mechanized cut and fill, and drift and fill, where spans are greater than 7 m, and small scale longhole stoping;
- Net smelter return (NSR) estimates were used as a measure of resource block value;
- All three deposits exhibit good vein continuity after application of cut-off NSR values;
- Nominal production rates are: Bellekeno mine 250 tpd, Lucky Queen 100 tpd, and Flame & Moth 320 to 370 tpd;
- Potentially mineable tonnes total 807 kilotonnes (kt) with average metal grades of 745 gpt silver, 0.40 gpt gold, 2.69% lead, and 4.67% zinc, and an average NSR value of \$419 per tonne (t);
- Contained silver in potentially mineable tonnes is estimated at 19.3 million ounces;
- The average percentage of Inferred mineral resources in the LoM plan is approximately 6%;
- Estimated average external dilution by deposit is Bellekeno 19%, Lucky Queen 44%, and Flame & Moth 15%;
- The LoM production schedule from January 1, 2015 forward averages 406 tpd for 5.5 years through to mid-2020;
- Waste development requirements for 2014 gradually increase to 7.1 m/d in Q4, while the peak rates for the LoM schedule occur in the first half of 2015, averaging 11.5 m/d.

### **Bellekeno**

- The Bellekeno deposit was being mined by underground methods including mechanized cut and fill and small scale longitudinal retreat longhole incorporating full backfilling;
- Bellekeno potentially mineable tonnes, 11% of LoM plant feed, are estimated at 86 kt with average metal grades of 660 gpt silver, 6.74% lead, and 4.15% zinc, and NSR value of \$404/t;
- The mine reached commercial production at the start of 2011. Operations were temporarily suspended at the end of August 2013. A January 1, 2015 production re-start is planned.

### **Lucky Queen**

- The Lucky Queen deposit requires the use of mechanized cut and fill methods in order to extract the mineral resource due to the average 45 degree (°) dip of the deposit. Cemented rockfill is planned to provide adequate support to the hangingwall;
- Lucky Queen potentially mineable tonnes, which account for 16% of LoM plant feed, are estimated at 129 kt with average metal grades of 1,054 gpt silver, 0.12 gpt gold, 2.35% lead, and 1.47% zinc, and NSR value of \$557/t;
- Based on a Q2 2016 development re-start, the project is expected to begin providing plant feed as of Q4 2016, with commercial production (+70% of its planned production rate) achieved by Q3 2017.

### **Flame & Moth**

- The Flame & Moth deposit can be mined by underground methods incorporating full backfilling without causing surface disturbance that could put the mill at risk;
- Flame & Moth's potentially mineable tonnes, 73% of LoM plant feed, are estimated at 593 kt with average metal grades of 690 gpt silver, 0.52 gpt gold, 2.18% lead, and 5.44% zinc, and NSR value of \$391/t;
- Based on an April 1, 2014 development start and permitting timelines, the project is expected to begin providing plant feed in Q2 2015, with commercial production scheduled for Q4 2015.

## **1.10 Mineral Processing**

Metallurgical testwork has been conducted on each of the three deposits independently. Testwork performed from 1996 through 2009 was the basis for the design and construction of Alexco's mill facility in 2010. Results of this testwork have been compared to actual performance in the mill, which has been processing Bellekeno ore since late 2010. Since 2011, samples from Lucky Queen and Flame & Moth mineralization were tested to assess flotation performance only. To date, no testwork has been conducted on a blended sample from any of the three deposits.

As all three deposits appear to follow similar relationships between concentrate grade and recovery versus head grade, this suggests similar mineralogy but at significantly different grades and metal ratios. Mineralogical investigations should be conducted to confirm this assumption.

Testwork results indicated that a primary grind size finer than that currently achieved by the mill facility could increase flotation selectivity, especially for zinc, resulting in higher recoveries and concentrate grades.

The current PEA study assumes the mill facility's production will increase to the design capacity of 400 tpd once the additional ball mill is commissioned in Q1 2015.

The LoM plan is generally based on the mill processing a variable blend of two deposits at a time, first a Bellekeno and Flame & Moth blend, and later a blend of Lucky Queen and Flame & Moth. Flame & Moth represents 73% of the total plant feed.

Relationships between silver, lead, and zinc recovery and head grade were used to estimate the concentrate recoveries for the blends expected in the PEA production plan. In addition, based on the concentrate mass recovery, the grade of minor elements was also estimated on an annual basis for the PEA production plan. These relationships are preliminary in nature and it is SRK's opinion that they need to be verified with metallurgical testwork on actual blended samples.

## 1.11 Environmental and Permitting

Key environmental and socio-economic considerations associated with this project include water quality, noise/traffic/dust, land/resource use and heritage resources, and community and First Nations relations. Discharges from the underground mines typically have neutral pH levels, but elevated concentrations of zinc, and sometimes cadmium. Due to the close proximity of this site to the community of Keno City, noise, dust, and traffic have been high profile issues for the project, and are the subject of ongoing discussions with the community. Several specific issues were raised during the *Yukon Environmental and Socio-economic Assessment Act* (YESAA) process, and these will need to be addressed during permitting and the ongoing consultation with the community. Access to and through the site are key issues for the local community. Alexco has signed a comprehensive Cooperation and Benefits Agreement with the First Nation of Na-cho Nyak Dun to address environmental and social issues associated with the project.

The tailings and portions of the waste rock are a potential source of metal leaching. The Bellekeno mine tailings are currently stored in the dry stack tailings facility (DSTF), where they will be covered at closure. Progressive reclamation has already begun on the DSTF and the completed areas of the DSTF have been covered with soil and revegetated. This facility can be expanded to accommodate future production from other new mines (Lucky Queen and Flame & Moth). The Bellekeno underground mine practice was to use tailings and some of the more mineralized waste rock as backfill. This same practice is planned to continue in the Bellekeno mine, and will be employed in the planned new mines.

Waste rock generated at Bellekeno (and all of the planned mines) with a minimal potential for metal leaching/acid rock drainage (ML/ARD) will be used in construction or stored in surface waste rock storage facilities. There are surface storage pads for temporary storage of mineralized waste rock prior to their transport underground for backfilling.

The development of the Flame & Moth deposit will generate relatively large amounts of waste rock in comparison to the Bellekeno mine, and will require a temporary stockpile (waste rock set aside for underground backfill) and a permanent stockpile for excess waste rock (potentially reduced by waste rock used for surface construction projects). Alexco plans to use the majority of the excess waste rock to construct a toe berm for the expansion of the DSTF. Further characterization of Flame & Moth waste rock is needed to determine the potential for ML/ARD.

Alexco recently revised its reclamation and closure plan to address the closure liabilities associated with the further development of Bellekeno and Lucky Queen (Alexco, 2012c). As part of the Quartz Mining Licence, the Government of Yukon currently holds \$4.2 million in security for these operations, including the mill area and dry stack facility. This is a reasonable level of security given the current understanding of liabilities at this site. Development of the Flame & Moth deposit will require additional financial security to cover the potential costs of additional liabilities from the site – principally, the expanded DSTF and additional waste rock storage facility. Post closure water treatment is not expected to be required at Flame & Moth.

All of the regulatory approvals required for mining activities associated with the Bellekeno and Lucky Queen deposits are currently in place. The required expansion of the DSTF and the addition of the Flame & Moth development will require further review under the YESAA process, and subsequent amendments to the Quartz Mining Licence and Water Use Licence. This process is expected to take one to one and a half years from the time of submission.

## 1.12 Capital and Operating Costs

### 1.12.1 Capital Cost Estimate

Capital costs have been estimated in 2013 dollars on a quarterly basis for the period from January 1, 2014 to the end of the planned plant feed schedule in mid-2020. In 2014, only development activity is planned. In Q1 2015, production will start, sourced from the Bellekeno mine. The Flame & Moth mine will begin delivering tonnes in Q2 2015. The Lucky Queen mine will begin producing plant feed in Q4 2016, just as Bellekeno production is ending. For the two new mine start-ups, SRK considers commercial production to have begun in the quarter that 70% of the planned production rate is achieved. This defines the following pre-production periods:

- Q2 2014 through Q3 2015 for the Flame & Moth mine;
- Q2 2016 through Q2 2017 for the Lucky Queen mine.

Table 1-4 shows the LoM estimate of total capital. It is important to note that initial capital is distributed in time as defined by the pre-production periods described above. It is not all front-end loaded in the cash flow model.

**Table 1-4: Capital Cost Summary**

Area	Capital Costs (\$M)		
	Initial	Sustaining	Total
Bellekeno Mine		\$5.2	\$5.2
Lucky Queen Mine	\$9.9	\$9.2	\$19.0
Flame & Moth Mine	\$29.3	\$11.0	\$40.2
Mill		\$2.2	\$2.2
Site Services		\$0.9	\$0.9
Health & Safety		\$0.5	\$0.5
Contingency	\$6.1	\$2.2	\$8.3
<b>Total Capital</b>	<b>\$45.3</b>	<b>\$31.1</b>	<b>\$76.4</b>

Capital cost estimation work was undertaken as follows:

- Mine capital by SRK, representing more than 90% of the total estimate;
- Mill, site services, and health and safety capital by Alexco with review by SRK.

SRK considers the accuracy of the capital cost estimate components to be at a scoping level.

### 1.12.2 Operating Cost Estimate

Site operating costs have been estimated in 2013 dollars based on SRK's review of Alexco's 2012 and 2013 operating budgets and on actual reported operating costs for 2011 and 2012. SRK's operating cost estimates reflect Alexco's ongoing and planned initiatives aimed at reducing the site unit operating cost.

These initiatives include:

- Future mine operations including development and production are planned as owner operated (instead of contractor) using Alexco's own equipment and workforce;
- Direct purchasing of new and used equipment for Lucky Queen and Flame & Moth instead of paying contractor monthly rental costs;
- Establishing long term supply contracts with suppliers and eliminating dependence on a contractor to supply basic materials such as ground support, explosives, and other materials;
- Upgrading the mill facility to ensure that it can reliably process 400 tpd.

Table 1-5 shows the LoM site operating cost estimate. It is based on a LoM plant feed of 807 kt as shown in the economic model.

**Table 1-5: LoM Site Operating Cost Summary**

Area	LoM Site Opex (\$M)	Unit Cost (\$/tonne)
Mine	\$123.9	\$154
Mill	\$56.1	\$70
G&A	\$23.7	\$29
<b>LoM Total Site</b>	<b>\$203.8</b>	<b>\$253</b>

SRK's operating cost estimates for the three individual mines are shown in Table 1-6. The tonnes shown in the table exclude tonnes mined during pre-production. The Flame & Moth mine operating cost includes \$7.5 M for equipment lease payments, equivalent to \$13.29/t.

**Table 1-6: Individual Mine Operating Cost Estimates**

<b>Mine</b>	<b>Individual Mine Opex (\$M)</b>	<b>Operating Period kt</b>	<b>Mine Unit Cost (\$/tonne)</b>
Bellekeno Mine	\$12.3	85.7	\$143.11
Lucky Queen	\$29.1	118	\$247.51
Flame & Moth	\$82.6	567	\$145.74
<b>Subtotal Mines</b>	<b>\$123.9</b>	<b>770</b>	<b>\$160.99</b>

### 1.13 Economics

Alexco and Silver Wheaton Corp. (Silver Wheaton) entered into an agreement on October 2, 2008 (the "Silver Purchase Agreement") whereby 25% of all future silver production from Keno Hill silver district properties owned or controlled by Alexco at the time of the consummation of the Silver Purchase Agreement will be delivered to Silver Wheaton in exchange for a payment of US\$3.90 per ounce (/oz) as well as a payment by Silver Wheaton of US\$50 M in 2009 and 2010 used for development and construction of the Bellekeno mine.

This PEA is preliminary in nature. Approximately 6% of the "potentially mineable tonnes" disclosed in the mine plans are derived from Inferred mineral resources by the application of a cut-off net smelter return (NSR) value (\$/t), and dilution and mining recovery factors. Inferred mineral resources are considered too speculative geologically to have economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that this PEA will be realized.

Inputs to the economic assessment include:

- The terms of the Silver Purchase Agreement;
- LoM plant feed of 807 kt averaging 745 gpt silver, 0.40 gpt gold, 2.69% lead, and 4.67% zinc;
- The LoM production schedule from January 1, 2015 forward averages 406 tpd through to mid-2020;
- Average NSR value of plant feed of \$419/t using the prices and exchange rate listed below;
- Metal prices of US\$24.00/oz silver, US\$1300/oz gold, US\$0.95 per pound (/lb) lead, and US\$0.85/lb zinc;
- Exchange rate of US\$0.96/C\$1.00;
- Payable silver amounting to 16.8 million ounces;
- LoM revenue of \$338 million;
- A LoM average site operating cost of \$253/t processed comprised of \$154/t mining, \$70/t milling, and \$29/t G&A;
- Capital costs totalling \$76 M, equivalent to \$95/t processed.

The EKHSD project indicative economic results on an after tax basis are:

- Net cash contribution of \$41.4 million;
- Internal rate of return (IRR) of 38.2%;
- Net present value (NPV)(5%) of \$29.6 million;
- Payback period is 3.5 years from January 1, 2014.

SRK notes that the LoM impact of the Silver Purchase Agreement is an undiscounted revenue reduction of \$88 million for Alexco.

SRK further notes that the PEA is based on a specifically selected mine sequencing strategy, however there are other possible scenarios for defining an overall production schedule that may warrant further study, particularly if changing metal prices or exploration results alter the mine planning context.



## 1.14 Risks and Opportunities

### 1.14.1 Risks

#### Mining

- Assessments of ground conditions at Lucky Queen and Flame & Moth are based solely on drill core review;
- As the overall level of extraction increases at the Bellekeno mine, it is likely that some stress induced failures will be encountered;
- Poor ground conditions, associated with a weak and wet rock masses, could increase mining costs and reduce planned extraction at Bellekeno and Lucky Queen;
- There is a possibility of significant water inflow to the planned Flame & Moth underground workings from faulting, overburden materials, and surface water features;
- Poor ground conditions, associated with a weak and wet rock mass, could increase Flame & Moth mining costs and reduce planned extraction;
- Alexco must build up a skilled underground workforce to achieve the planned development and production ramp up in 2014 and 2015. There is a risk that some contractor support could be needed, increasing operating costs.

#### Processing

- Estimates of plant performance include uncertainty since they are based on metallurgical testwork conducted on unblended samples of grades much higher and lower than the production plan averages;
- No assessment of ball mill grindability has been done for Lucky Queen or Flame & Moth material;
- To date, only one composite sample from Flame & Moth has been tested and the results indicate that the current mill flowsheet could result in poor zinc flotation performance.

#### Environmental and Permitting

- There is potential for additional post-closure costs related to water treatment at the Bellekeno workings;
- For Flame & Moth, there is limited information on the geochemical characteristics of waste rock and tailings. Further characterization is underway for the permitting process and will be useful in determining whether the management systems used at Bellekeno will be appropriate for Flame & Moth;
- The potential for high groundwater inflows to the Flame & Moth mine could create additional costs related to management and treatment of mine water;
- Development of the Flame & Moth deposit as well as the expansion of the DSTF from the currently permitted size of 322,000 t to a capacity that will accommodate Flame & Moth (estimated at a minimum of 750,000 t) will require additional permitting and possibly environmental assessment. SRK considers this a low risk, and significant delays are not anticipated.

#### Project Economics

- Unless underlying fixed costs are significantly reduced, project economic results will be significantly impacted by a 15% drop in metal prices below those used in this PEA;
- The EKHSD project has relatively high fixed costs related to location, climate, and the fact that operations are spread out over a large area. Overall economic results are closely linked to plant throughput rate. The risk is in maintaining the necessary plant throughput from multiple mines that are characterized by narrow vein mining in locally poor ground conditions.

### 1.14.2 Opportunities

#### Mining

- Depending on the impact of hydrogeology on the Flame & Moth mine plan, there may be an opportunity to achieve more than the 50% planned extraction of the barrier pillars along the Mill fault, and within crown pillar areas. Refer to report Section 22.6;
- Actual mining experience at Bellekeno mine has yielded more tonnage at a similar grade than predicted by previous versions of the underground mine plan (based on the same resource block model) such that the currently planned mine life could be extended;
- At the Bellekeno mine, the East zone represents an opportunity if economic conditions were to improve, particularly silver and zinc prices higher than the study prices;
- The Flame & Moth underground mine plan should be optimized based on the results of any additional metallurgical testwork and the results of further hydrogeology and mine geotechnical assessments. There may be an opportunity to increase the potentially mineable tonnes;
- Flame & Moth mining shapes are sensitive to the cut-off criteria, and higher metal prices or reduced royalties would increase the potentially mineable tonnes;
- In each of the three deposits there are some potentially mineable tonnes that were excluded from the PEA production plan for various reasons. This excluded tonnage amounts to 163 kt with average metal grades of 566 gpt silver, 2.92% lead, 3.64% zinc, and 0.07 gpt gold, representing a potential future mining opportunity.

#### Processing

- Additional testing of blended samples representative of the LoM production plan blends and grades may result in better flotation results than the ones estimated in this PEA;
- Additional hardness tests on Lucky Queen and Flame & Moth samples may reveal better grindability than the current expectation. Better ball mill grindability has the potential to decrease power consumption, improve mill throughput, achieve finer flotation feed size and, therefore, higher recoveries and concentrate grades.

#### Project Economics

- The project is sensitive to higher metal prices. A 20% increase in prices compared to the prices used in the study (silver price of US\$28.80/oz for example) would increase estimated after tax net cash flow by roughly 2.2 times;
- Within the Keno Hill silver district, Alexco has identified several high grade silver exploration/development targets that represent a pipeline of potential projects. These represent a potential opportunity to sustain a nominal plant feed rate of 400 tpd beyond 2020 (Table 16-27), thus improving the project economics.

### 1.15 Recommendations

#### Mining

- Mining sequences, monitoring, and tactical support requirements will need to be evaluated for the later stages of the Bellekeno mine plan;
- Additional hydrogeological and geotechnical evaluation needs to be undertaken at Flame & Moth to assess the impact of the hydrogeology on the proposed mining plan;
- For Flame & Moth, a system of barrier pillars will need to be designed along the Mill fault and below the overburden areas to minimize the potential for water inflow;
- The Lucky Queen underground mine plan should be optimized based on the results of additional metallurgical test results and increased understanding of the geology and geotechnical conditions resulting from planned sill drifting on vein;
- The Flame & Moth underground mine plan should be optimized based on the results of any additional metallurgical testwork and the results of further hydrogeology and mine geotechnical assessments.

## Processing

- Further metallurgical testing and mineralogical analysis are recommended on additional samples representing the blends of deposits and expected grades shown in the LoM production plan;
- Additional testwork should also include ball mill grindability, flotation performance, and a range of samples to measure variability;
- Flotation conditions for Flame & Moth zinc concentrate production need to be optimized;
- Testing of additional samples for settling and geochemical characteristics is also warranted.

## Environmental and Permitting

- Alexco has already initiated investigations on groundwater conditions at Flame & Moth, and geochemical characterization of waste rock from Flame & Moth. These studies will be important for developing appropriate waste and water management plans for these areas;
- Additional geochemical sampling and testing of both potentially acid or metal leaching and non-acid or metal leaching rock from all of the mines would provide a more robust data set for use in updating future closure plans.

## Other Keno Hill District Properties

### *Onek Property*

The Corporation's 100% owned Onek property is located in the Keno Hill District, approximately one kilometer northeast of Keno City. The property comprises 32 surveyed quartz mining leases and 5 unsurveyed quartz mining claims, most of which are UKHM Mineral Rights, and includes the historical Onek underground and open pit mine from which reported past production totaled 95,290 tons averaging 13.6 ounces per ton silver, 5.5% lead and 3.4% zinc. As reported in the news release dated July 27, 2011 entitled "Alexco Announces Initial Resource Estimates for Lucky Queen and Onek", a resource estimate for Onek has been defined. The estimate comprises 585,000 tonnes of indicated resources grading 194 grams per tonne silver, 0.65 grams per tonne gold, 1.23% lead and 13.74% zinc, plus a further 236,000 tonnes of inferred resources grading 203 grams per tonne silver, 0.43 grams per tonne gold, 1.05% lead and 11.52% zinc, characterized by silver-galena rich zones within a wide and continuous zinc-rich vein system with higher silver-to-zinc ratios prevalent in the upper and southwest portion of the deposit. This resource estimate is supported by a technical report dated September 8, 2011 filed on the SEDAR website at [www.sedar.com](http://www.sedar.com) and entitled "Technical Report on the Onek Deposit, Onek Property, Keno Hill District, Yukon" (the "**Onek Technical Report**"). The estimate has been prepared by SRK under the responsibility of Gilles Arseneau, Ph.D., P.Geo., an Independent Qualified Person as defined by NI 43-101, in conformity with generally accepted CIM Estimation of Mineral Resource and Mineral Reserve Best Practices Guidelines. The resource estimate may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent resource estimates. The resource estimate may also be affected by subsequent assessments of mining, environmental, processing, permitting, taxation, socio-economic and other factors. In May 2013, the Corporation received an executed Type A Water Licence amendment from the Yukon Water Board, the final permit necessary to enable the Corporation to process mill feed from the Onek and Lucky Queen mines. However, in light of the decline in silver prices and the decision to suspend mining operations at Bellekeno, plans for initiation of production from Onek and Lucky Queen were deferred.

The detailed disclosure contained in the Onek Technical Report is hereby incorporated by reference, and the summary section from that report is reproduced as follows.

### **Executive Summary**

The Onek prospect is one of several polymetallic silver-lead-zinc deposits occurring in the historic Keno Hill silver-lead district located near Mayo, Yukon Territory. A mineral resource model was constructed by SRK Consulting (Canada) Inc. ("SRK") during the first quarter of 2011 using a geostatistical block modeling approach, constrained by wireframes, provided by Alexco Resource Corp. ("Alexco"). Mineral resources are classified as Indicated and Inferred, following the CIM Definition Standards for Mineral Resources and Mineral Reserves (December 2005) guidelines.

This technical report documents the mineral resource estimate for the Onek prospect. It was prepared following the guidelines of the Canadian Securities Administrators National Instrument 43-101 and Form 43-101F1, and in conformity with generally accepted CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines".

### **Property Description, Location, Access and Physiography**

The Onek property is located in the Mayo Mining District, approximately 350 kilometres ("km") north of Whitehorse, Yukon Territory, within the Keno Hill mining district. Mayo is accessible from Whitehorse via a 460 km all weather road and by air via the Mayo airport. A gravel road connects Mayo to the Project area. Alexco currently maintains a land position at the Onek property comprising 32 surveyed quartz mining leases, and 5 unsurveyed quartz mining claims. Mineral exploration at Keno Hill is permitted under the terms and conditions set out by the Yukon Government in the Class IV Quartz Mining Land Use Permit – LQ00240, issued on June 17, 2008 and valid until June 16, 2018. The mineral resources for the Onek prospect reported herein are located on the Fisher, Lone Star, Eli and Galena Farm quartz mining leases.

Central Yukon is characterized by a sub-arctic continental climate with cold winters and warm summers. Average temperatures in the winter are between minus fifteen and minus twenty degrees Celsius while summer temperatures average around fifteen degrees Celsius. Exploration and mining work can be carried out year-round. The landscape around the Onek Project area is characterized by rolling hills and mountains with a relief of up to 1,600 metres ("m").

### **History**

The Keno Hill mining camp area has a rich history of exploration and mining. Silver was first found in 1901 but small-scale mining only began during 1913. High silver prices at the end of the First World War led to renewed and ultimately successful exploration activity in the area. In 1922, the Onek Mining Company Ltd. was organized to explore the core Onek claims via a number of open cuts and shallow underground workings in two shafts. In 1950 to 1952, United Keno Hill Mines Ltd. ("UKHM") reopened the shafts and drove an adit in from the northwest to drift along the vein strike at the 400 Level for about 1300 feet, driving raises up into the historic workings along the way. The Onek Mine was revisited in the early 1960's with limited success. All mining at Onek ceased in 1965, until the late 1980's, when a 20 - 40 m deep open pit was developed over the length of the majority of the Onek workings around the historical shafts. Historical production from the Onek deposit totalled 95,290 imperial tonnes at 13.6 ounces per tonne ("oz/t") silver.

UKHM closed permanently in 1989. In June 2005, Alexco was selected as the preferred purchaser of the assets of UKHM by PricewaterhouseCoopers Inc., the court-appointed interim receiver and receiver-manager of Keno Hill. In February 2006, Alexco's purchase of UKHM's assets through a wholly-owned subsidiary, Elsa Reclamation & Development Company Ltd. ("ERDC"), was approved. Under the Keno Hill Subsidiary Agreement, ERDC is indemnified against all historical liability, has property access for exploration and future development, and is not required to post security against pre-existing liabilities. ERDC received a water license from the Yukon territorial government in November 2007, giving Alexco free and clear title to surface and subsurface claims, leases, freehold land, buildings and equipment at Keno Hill. Alexco embarked on an aggressive surface exploration program in 2006 with continued yearly exploration programs through 2011.

### **Regional and Local Geological Setting**

The Keno Hill mining camp is located in the northwestern part of the Selwyn Basin in an area where the northwest-trending Robert Service Thrust Sheet and the Tombstone Thrust Sheet overlap. The area is underlain by Upper Proterozoic to Mississippian rocks that were deposited in a shelf environment during the formation of the northern Cordilleran continental margin. The area underwent regional compressive tectonic stresses during the Jurassic and the Cretaceous, producing thrusts, folds and penetrative fabrics of various scales.

The Robert Service Thrust Sheet in the south is composed of Late Proterozoic to Devonian clastic sandstone, minor limestone, siltstone, argillite, chert, and conglomerate. The Tombstone Thrust Sheet to the north consists of Devonian phyllite, felsic meta-tuffs and metaclastic rocks, overlain by Carboniferous quartzite, which is the main host for the silver mineralization in the Keno Hill camp. Four intrusive suites intrude the layered rocks:

- Early Paleozoic diabase dikes and sills;

- Mid-Triassic gabbro to diorite pods;
- Early Cretaceous Tombstone granite to granodiorite suite; and
- Upper Cretaceous peraluminous porphyritic granite.

The local geology is characterized by three sedimentary rock units metamorphosed to greenschist facies assemblages during the Middle Cretaceous. The Lower Schist comprises Devonian to Mississippian graphitic, calcareous, and sericitic schists, quartzite and minor greenstone of Middle Triassic age. The lower contact of this unit has been cut off by the Tombstone Thrust Fault. The 700-metre thick Mississippian Central Quartzite (the Keno Hill Quartzite) consists of quartzite with minor schist, phyllite and greenstone horizons. It is the most important host to the silver mineralization at Keno Hill. The Upper Schists comprise Cambrian quartz-mica schist, quartzite, graphitic schist and minor limestone. The Robert Service Thrust Fault separates the Upper Schist from the younger Central Quartzite.

The rock units are intruded by quartz-feldspar porphyritic sills, commonly in the Lower and Upper Schists. They are correlated with the ninety three million year old Roop Lake granite (Mayo Lake pluton).

Four sets of faults are important. The oldest fault set consists of south dipping foliation-parallel structures related with the Tombstone Thrust Fault. The second fault set ("longitudinal veins") comprises northeast to east-northeast trending, steeply dipping sinistral faults with offset locally reaching more than 150 m. These faults essentially carry all the silver mineralization that was mined in the Keno Hill district. The third fault set ("transverse faults") includes north-west striking and steep north dipping structures, generally barren but filled with quartz containing trace to minor arsenopyrite, pyrite and jamesonite. They may represent dilatational zones between "en echelon" longitudinal faults. Late north to northeast trending cross faults displace (dextral and sinistral) veins or longitudinal faults by up to 2,000 m.

### **Deposit Types and Mineralization**

The Keno Hill District is a polymetallic silver-lead-zinc vein district with characteristics analogous to: Kokanee Range (Slocan), British Columbia; Coeur d'Alene, Idaho; Freiberg and the Harz Mountains, Germany; and Příbram, Czech Republic. Common characteristics include the proximity to crustal-scale faults, affecting thick clastic metasedimentary rocks, intruded by felsic rocks that may have acted as a heat source driving the hydrothermal system. At Keno Hill, the largest accumulation of silver, lead and zinc minerals occurred in structurally prepared competent rocks, such as the Central Quartzite.

In general, gangue minerals include manganiferous siderite, minor calcite, and quartz. Silver occurs in argentiferous galena and argentiferous tetrahedrite. In supergene assemblages, silver can be native or in polybasite, stephanite, and pyrargyrite. Lead occurs in galena and zinc in iron-rich sphalerite. Other sulphides include minor pyrite, arsenopyrite, and chalcopyrite.

At the district scale, the hydrothermal system exhibits sharp lateral mineralogical changes equivocally associated with temperature gradients around magmatic rocks. The hydrothermal veins also exhibit sharp vertical mineralogical zoning; historically interpreted to be lead-rich at the top to more zinc-rich at depth. The Onek vein system comprises at least three individual vein faults occurring within a broad northeast striking, southeast dipping structural zone with a strike length of approximately 600 m.

### **Exploration**

Most past exploration work in the Keno Hill district was conducted as support to the mining activities until the mines closed in 1989. This historic work involved surface and underground drilling designed to explore areas surrounding the main underground working areas.

The current exploration conducted by Alexco is the first comprehensive exploration effort in the district since 1997. Alexco conducted surface diamond drilling programs in the Onek prospect area between 2007 and 2011. Drilling included 13 surface core drill holes totalling 2,803m in 2007, 29 surface core drill holes totalling 5,127m in 2008, 25 surface core drill holes totalling 2,913m in 2010, and 12 drill holes totalling 1,138m in 2011.

## **Sampling Method, Approach and Analyses**

Historical samples collected by previous project operators include underground chips, split core, reverse circulation and percussion drill cuttings. Sampling procedures are incompletely documented from project archives. Historical drill core samples were taken using procedures meeting industry best practices, reverse circulation and percussion drilling assay samples were taken from split recovered drill cuttings.

Information regarding historical assay procedures is limited. All assays were performed by the mine laboratory located in Elsa. SRK understands that gold and silver were determined by fire assay, while lead and zinc analyses were performed by atomic absorption or titration methods.

Alexco implemented industry best practice procedures for all aspects of the drilling, collar and downhole surveying, core description and sampling, sample preparation and assaying, and database management. Assay samples were collected on half core sawed lengthwise with sampling intervals honouring geological boundaries. Sample intervals vary from 0.1 to 1 m in visibly mineralized core with up to 2m lengths used away from obviously mineralized material.

Alexco used industry best practices assaying protocols including the use of commercial certified control samples, sample blanks and duplicates at an adequate frequency to monitor the accuracy of laboratories; ALS-Chemex in Vancouver, Eco Tech Labs of Kamloops, BC and AGAT Laboratory of Mississauga, ON, all of which are accredited under ISO-170025 Standards Council of Canada. Assay samples were dispatched for preparation and assaying using adequate security protocols. All samples were prepared using standard preparation protocols. Each sample was assayed for gold by fire assay and atomic absorption spectrometry on 30-gram ("g") sub-samples, and for a suite of between 27 and 48 elements (including silver, lead and zinc) by four acid digestions and either inductively coupled plasma atomic emission spectroscopy or mass spectroscopy on 0.5 g sub-samples. Elements exceeding concentration limits were re-assayed using methods suitable for high concentrations.

## **Data Verifications**

Alexco scanned and, where applicable, digitally captured historical data creating an extensive digital database. Data relating to the Onek resource area were verified by Alexco personnel.

Alexco verified the historical Onek chip sample data collected by UKHM for those levels occurring within the resource zones. Sampling was done mainly in the 1950's at Onek. Documented sampling procedures do not exist for these early campaigns. As the underground workings are currently inaccessible, no confirmation check sampling could be performed by Alexco. As a result, all historical chip sampling occurring within the Onek resource area is not deemed reliable for inclusion in a reportable resource calculation.

SRK reviewed the analytical quality control data produced by Alexco for the 2007 to 2011 core drilling at Onek and concluded that Alexco personnel used diligence in monitoring quality control data, investigating potential failures and taking appropriate corrective measures when required for the collected data. The quality control data collected by Alexco in between 2007 and 2011 are comprehensive and the assaying results delivered by ALS Chemex and AGAT Laboratories are generally reliable for the purpose of resource estimation.

## **Mineral Processing and Metallurgical Testing**

No specific testing has been carried out on the mineralization found at the Onek deposit. SRK assumed that the mineralization found within these deposits will have similar metallurgical characteristics to the Bellekeno deposit now being developed by Alexco.

## **Mineral Resource Estimates**

The Onek resources were estimated using 3D Gemcom Gems block modeling software in multiple passes in 5 by 5 by 3 m blocks by ordinary kriging. Grade estimates were based on capped 1 m composited assay data. Capping levels for silver were set to 3,000 grams per tonne ("g/t") for vein1 and 2,000 g/t for vein2. Lead and zinc were capped at 5% and 3% respectively for Vein 2. Gold grades were capped at 5 g/t for vein1 and 2 g/t for vein2. Blocks were classified as Indicated mineral resources if at least two drill holes and five composites were found within a 60 m by 30 m search ellipse. All other interpolated blocks were classified as Inferred mineral resource.

Table i below summarises the mineral resources estimated by SRK for the Onek deposit as of July 27, 2011.

**Table i: Mineral Resource Statement\* for the Onek Deposit, July 27, 2011.**

Class	Tonnes	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)
Indicated**	585,000	194	0.65	1.23	13.74
Inferred**	236,000	203	0.43	1.05	11.52

\*Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

\*\*Reported at an NSR cut-off of \$185 (1 USD = 1 CAD)/tonne using consensus long term metal prices (US\$) and recoveries developed for the nearby Bellekeno deposit (Ag US\$18.50/oz, recovery 96%; Pb US\$ 0.90/lb, recovery 97%; Zn US\$ 0.95/lb, recovery 88%; Au US\$ 1,100/oz, recovery 72%). Ag grades capped at 3,000 g/t for vein 1 and 2,000 g/t for vein 2; Pb and Zn capped at 5% and 3% respectively for Vein 2; Au grades capped at 5 g/t for vein 1 and 2 g/t for vein 2.

SRK observed that Vein 1 displays metal zonation with depth with a silver-rich upper zone and a zinc-dominated lower zone similar to the Bellekeno deposit. This zonation is not seen in Vein 2. Table ii displays Onek mineral resources for Vein 1 above and below the 930 m elevation.

**Table ii: Mineral Resource for Vein 1 above and below 930 m elevation.**

ZONE	Class	Zone	Tonnes	Ag g/t	Pb %	Zn %	Au g/t
Vein 1	Indicated	Above 930 m	405,000	234	1.54	15.09	0.68
		Below 930 m	131,000	77	0.34	11.77	0.67
		<b>Total</b>	<b>536,000</b>	<b>195</b>	<b>1.25</b>	<b>14.27</b>	<b>0.67</b>
	Inferred	Above 930 m	71,000	280	1.26	12.79	0.49
		Below 930 m	129,000	146	0.32	12.43	0.42
		<b>Total</b>	<b>200,000</b>	<b>193</b>	<b>0.65</b>	<b>12.55</b>	<b>0.45</b>

### Conclusion and Recommendations

Between 2006 and June 2011, Alexco completed four drilling programs on its Onek property in the Keno Hill district located in Central Yukon Territory. These drilling programs confirmed the existence of significant polymetallic silver mineralization in this area.

SRK recommends a two phase exploration and development program for the Onek deposit with the second phase contingent on positive results from the first phase. The first phase would include development of a new underground access to collect a 7560 ton bulk sample by drifting 200 m on vein at an estimated cost of \$4.23 M, metallurgical testing of the bulk sample at a cost of \$120,000, and geotechnical analysis to be used in detailed mine design and economic analysis at a cost of \$120,000. Total cost of phase one is estimated at \$ 4.88 M. The second phase would include detailed mine design and economic analysis for preliminary economic assessment and the development of policies and procedures for rock mechanics, rock mechanics planning, ground support, and handling development in proximity of historical workings with a total estimated cost of \$360,000. The cost for the two phases would be \$5.24 M.

### **Birmingham Property**

The Corporation's 100% owned Birmingham Property is located in the Keno Hill District near May, Yukon Territory. The property comprises 42 surveyed quartz mining leases, all of which are UKHM Mineral Rights. As reported in the news release dated June 28, 2012 entitled "Alexco Announces Initial Resource Estimates for Flame & Moth and Birmingham", a resource estimate for Birmingham has now been defined. The estimate comprises of 257,000 tonnes of indicated resources grading from 460 grams of silver, 0.06 grams

per tonne gold, 2.0% lead and 2.1% zinc, plus a further 102,000 tonnes of inferred resources grading 372 grams per tonne silver, 0.09 per tonne gold, 1.12% lead and 1.83% zinc. This resource estimate is supported by a technical report dated August 8, 2012 filed on the SEDAR website at [www.sedar.com](http://www.sedar.com) and entitled "Technical Report on the Bermingham Deposit, Bermingham Property, Keno Hill District, Yukon" (the "**Bermingham Technical Report**"). The estimate has been prepared by SRK under the responsibility of Gilles Arseneau, Ph.D., P.Geo., an Independent Qualified Person as defined by NI 43-101, in conformity with generally accepted CIM Estimation of Mineral Resource and Mineral Reserve Best Practices Guidelines. The resource estimate may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent resource estimates. The resource estimate may also be affected by subsequent assessments of mining, environmental, processing, permitting, taxation, socio-economic and other factors.

The detailed disclosure contained in the Bermingham Technical Report is hereby incorporated by reference, and the summary section from that report is reproduced as follows.

### **Executive Summary**

The Bermingham prospect is a silver deposit in the historic Keno Hill silver-lead district located near Mayo, Yukon Territory. While successfully mined in the past to a shallow depth, renewed exploration by Alexco Resource Corp (Alexco) has outlined a new area of silver-lead-zinc mineralization with sufficient confidence to produce a geological interpretation and vein wireframes for a resource estimate. SRK Consulting (Canada) Inc. (SRK) constructed a mineral resource model during the second quarter of 2012 using a geostatistical block modeling approach. Mineral resources are classified as Indicated and Inferred, following the Canadian Institute of Mining & Metallurgy (CIM) Definition Standards for Mineral Resources and Mineral Reserves (December 2005) guidelines.

This technical report documents the mineral resource estimate for the Bermingham prospect. It was prepared following the guidelines of the Canadian Securities Administrators National Instrument 43-101 and Form 43-101F1, and in conformity with generally accepted CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines".

### **Property Description, Location, Access, and Physiography**

The Bermingham property is located in the Mayo Mining District, approximately 350 kilometres (km) north of Whitehorse, Yukon Territory, within the Keno Hill mining district. Mayo is accessible from Whitehorse via a 460 km all weather road and by air via the Mayo airport. A gravel road connects Mayo to the project area. Alexco currently maintains a land position at the Bermingham property comprising of 42 surveyed quartz mining leases. Mineral exploration at Keno Hill is permitted under the terms and conditions set out by the Yukon Government in the Class IV Quartz Mining Land Use Permit – LQ00240, issued on June 17, 2008 and valid until June 16, 2018. The mineral resources for the Bermingham prospect reported herein are located on the Atlantic, Arctic, Etta, and Mastiff quartz mining leases.

Central Yukon is characterized by a sub-arctic continental climate with cold winters and warm summers. Average temperatures in the winter are between –15 and –20 degrees Celsius (°C) while summer temperatures average around 15°C. Exploration is limited to the summer months although mining work can be carried out year-round. The landscape around the Bermingham Project area is characterized by rolling hills with a relief of up to 1,425 metres (m).

### **History**

The first claims in the Bermingham area were staked in 1921, within a decade of commercial production starting in the Keno Hill district. Shallow underground workings were initiated in 1923 with the discovery of vein float and limited production of high grade silver and lead from the Bermingham Vein ensued. The Treadwell Yukon Company optioned the ground in 1928, and completed additional underground workings and identified a fault offset vein portion, but dropped the lease in 1930 due to low silver prices and a lack of ore grade material. United Keno Hill Mines (UKHM) purchased the property as part of the district consolidation, and between 1948 and 1951 drove an adit and drift about 30 foot (ft) below the Treadwell workings where considerable milling ore appeared available. In 1952, many of the old Treadwell workings were surveyed and sampled, but the adit level was subsequently abandoned in 1954 after very little ore grade material was realized. During this time, UKHM milled 5165 ton of ore at 47.3 oz/ton (opt) Ag, 8% Pb, and 1.3% Zn, of which all but 60 ton was recovered from the old dumps.



Between 1965 and 1982, 874 overburden drill-holes totalling 65,390 ft (19,931 m), and 27 core holes totalling 7898 ft (2407 m) were drilled in the Birmingham area, a small portion of which occurred in the present resource area. Poor ground conditions prevented many of these holes from adequately penetrating the vein zone, however they outlined an open pit resource and stripping began in 1977. The mine produced 91,104 ton at 16.7 opt Ag.

The southwest extension of the Birmingham Vein, as offset by the Mastiff Fault, was tested by several historic shafts sunk by the Treadwell Yukon Company Ltd. The vein was reported to be 8 ft (2.44 m) wide and to consist mainly of siderite with small bunches of galena, although no mineable ore was encountered. A small open pit was operated on this segment of the vein by UKHM in the mid-1980s. A further 150 m along strike to the southwest, an intended second pit with an estimate resource of 274,000 oz silver was stripped to bedrock in 1983. The historical mineral resource estimate does not use mineral resource categories stipulated by NI43-101. SRK is not aware of the parameters and assumptions used in preparing this estimate. The historical estimate should not be relied upon; it is only stated here for historical completeness. Although drilling indicated shallow mineralization exists, the exposed veins appeared weak and unmineralised, and the pit was never initiated. In total, the Birmingham property produced 186,266 ton at 20.3 opt Ag, 4.2% Pb, and 0.6% zinc, or, 3,777,932 oz of silver (Cathro, 2006).

UKHM operations closed permanently in 1989. In June 2005, Alexco was selected as the preferred purchaser of the assets of UKHM by PricewaterhouseCoopers Inc., the court-appointed interim receiver and receiver-manager of Keno Hill. In February 2006, Alexco's purchase of UKHM's assets through a wholly owned subsidiary, Elsa Reclamation & Development Company Ltd. (ERDC), was approved. Under the Keno Hill Subsidiary Agreement, ERDC is indemnified against all historical liability, has property access for exploration and future development, and is not required to post security against pre-existing liabilities. ERDC received a water license from the Yukon territorial government in November 2007, giving Alexco free and clear title to surface and subsurface claims, leases, free-hold land, buildings, and equipment at Keno Hill. Alexco embarked on an aggressive surface exploration program in 2006 with continued yearly exploration programs through 2012.

### **Regional and Local Geological Setting**

The Keno Hill mining camp is located in the northwestern part of the Selwyn Basin in an area where the northwest-trending Robert Service Thrust Sheet and the Tombstone Thrust Sheet overlap. The area is underlain by Upper Proterozoic to Mississippian rocks that were deposited in a shelf environment during the formation of the northern Cordilleran continental margin and underwent regional compressive tectonic stresses during the Jurassic and the Cretaceous, producing thrusts, folds, and penetrative fabrics of various scales.

The Robert Service Thrust Sheet in the south is composed of Late Proterozoic to Devonian clastic sandstone, minor limestone, siltstone, argillite, chert, and conglomerate. The Tombstone Thrust Sheet to the north consists of Devonian phyllite, felsic meta-tuffs, and metaclastic rocks, overlain by Carboniferous quartzite, that are the main host for the silver mineralization in the Keno Hill camp. Four suites of igneous rock intrude the sedimentary sequence:

- Late Triassic gabbro to diorite sills;
- Early Cretaceous Tombstone granite to granodiorite;
- Upper Cretaceous peraluminous porphyritic granite; and
- Late Cretaceous diabase dikes and sills.

The local (Birmingham) geology is characterized by the upper part of the Mississippian Keno Hill Quartzite, where the thick Basal Quartzite Member is overlain by the Sourdough Hill Member. The sequence was metamorphosed to greenschist facies assemblages during the Cretaceous. The Basal Quartzite is up to 700 m thick and comprises quartzite interbedded with minor graphitic phyllite, and is intruded by Triassic greenstone sills. The Basal Quartzite is the dominant host to the silver mineralization in the Keno Hill district. The overlying Sourdough Hill Member comprises graphitic and sericitic phyllite, chloritic quartz augen phyllite, and thin limestone. To the south, the Robert Service Thrust Fault separates the Keno Hill Quartzite from the overthrust Upper Proterozoic Hyland Group comprising predominantly meta-sedimentary chlorite and quartz rich schist. The Keno Hill Quartzite is intruded by quartz-feldspar aplite sills or dykes that are correlated with the early Cretaceous intrusive suite found elsewhere in the district.

Three phases of folding are identified in the district. The two earliest phases consist of isoclinal folding with sub-horizontal, easterly or westerly trending fold axes. The latter phase consists of a sub-vertical axial plane, and moderate southeasterly trending and plunging fold axis. In the Keno Hill district the first phases of folding formed three structurally dismembered isoclinal folds of which the Basal Quartzite Member outlines two synforms at Monument and Caribou Hills, while the Birmingham Prospect is located on the third dismembered syncline on Galena Hill.

Within the district up to four periods of faulting are recognized. The oldest fault set consists of south dipping foliation-parallel structures that developed contemporaneously with the first phase folding. The Robert Service Thrust Fault truncates the top of the Keno Hill Quartzite and sets the Precambrian schist of the Yusezyu Formation of the Hyland Group above the Mississippian Sourdough Hill Member of the Keno Hill Quartzite. The mineralization in the Keno Hill district is hosted by a series of northeast trending pre- and syn- mineral "vein faults" that display apparent left lateral normal displacement. These are commonly offset by high angle cross faults, low angle faults, and bedding faults. Most commonly these comprise northwest striking cross faults that show apparent right-lateral displacement.

### **Deposit Types and Mineralization**

The Keno Hill District is a polymetallic silver-lead-zinc vein district with characteristics analogous to: Kokanee Range (Slocan), British Columbia; Coeur d'Alene, Idaho; Freiberg and the Harz Mountains, Germany; and Příbram, Czech Republic. Common characteristics include the proximity to crustal-scale faults affecting thick sequences of clastic metasedimentary rocks intruded by felsic rocks that may have acted as a heat source driving the hydrothermal system. At Keno Hill, the largest accumulation of silver, lead, and zinc minerals occurred in structurally prepared competent rocks, such as the Basal Quartzite Member.

In general, gangue minerals include (manganiferous) siderite, minor calcite, and quartz. Silver most commonly occurs in argentiferous galena and argentiferous tetrahedrite. In supergene assemblages, silver can be native or in polybasite, stephanite, and pyrargyrite. Lead occurs in galena and zinc in iron-rich sphalerite. Other sulphides include minor pyrite, arsenopyrite, and chalcopyrite.

At the district scale, the mineral system exhibits sharp lateral mineralogical changes equivocally associated with temperature gradients around magmatic rocks. The hydrothermal veins also appear to exhibit sharp vertical mineralogical zoning, historically interpreted to be lead rich at the top, to more zinc rich at depth. The Birmingham prospect is composed of three intersecting veins with differing mineralogical characteristics, either a quartz dominant vein with minor sulphides (in descending order of abundance - arsenopyrite, pyrite, galena, and sphalerite), or carbonate dominant veins (dolomite, ankerite, and siderite) with quartz, calcite gangue, and sulphides; sphalerite, galena, pyrite, and arsenopyrite, with accessory, chalcopyrite, argentian tetrahedrite, jamesonite, ruby silver, and native silver.

### **Exploration**

Most past exploration work in the Keno Hill district was conducted as support to the mining activities until the mines closed in 1989. This historical work involved surface and underground drilling designed to explore areas surrounding the main underground working areas.

The current exploration conducted by Alexco is the first comprehensive exploration effort in the district since 1997. The first holes were drilled in the Birmingham area in 2009, targeting the Birmingham Vein at depth in the hangingwall of the Mastiff Fault below an area with a historic shallow open pit resource. Results of this drilling were sufficiently encouraging to continue exploration in 2010 and 2011.

Alexco drilled two core holes in 2009, for a total of 523 m followed by eight core holes totalling 2588 m drilled in 2010 and an expanded 2011 drill program of 25 holes for a total of 6889 m. Of the 36 holes drilled in the area, 23 are used in the resource estimate, for a total of 6442 m.

### **Sampling Method, Approach and Analyses**

Alexco implemented industry best practice procedures for all aspects of the drilling, collar and down hole surveying, core description and sampling, sample preparation and assaying, and database management. Assay samples were collected from half core sawed lengthwise with sampling intervals honouring geological boundaries. Sample intervals vary from 0.1 to 1 m in visibly mineralized core with up to 2 m lengths used away from obviously mineralized material. Alexco used

industry best practices assaying protocols including the use of commercial certified control samples, sample blanks, and duplicates at an adequate frequency to monitor the accuracy of laboratories: ALS in North Vancouver, BC, Eco Tech Labs of Kamloops, BC and AGAT Laboratory of Mississauga, ON, all of which are accredited under ISO-170025 by the Standards Council of Canada. Assay samples were dispatched for preparation and assaying using adequate security protocols. All samples were prepared using standard preparation protocols. Each sample was assayed for gold by fire assay and atomic absorption spectrometry on 30 g sub-samples, and for a suite of between 27 and 48 elements (including silver, lead, and zinc) by four acid digestions and either inductively coupled plasma atomic emission spectroscopy or mass spectroscopy on 0.5 g sub-samples. Elements exceeding concentration limits were re-assayed using methods suitable for high concentrations.

### Data Verifications

SRK reviewed the analytical quality control data produced by Alexco for the 2009 to 2011 core drilling at Bermingham and concluded that Alexco personnel used diligence in monitoring quality control data, investigating potential failures, and taking appropriate corrective measures when required for the collected data. The quality control data collected by Alexco between 2009 and 2011 are comprehensive and the final, in some cases replicated, assaying results delivered by Eco Tech, ALS, and AGAT Laboratories are generally reliable for the purpose of resource estimation.

### Mineral Processing and Metallurgical Testing

No metallurgical testing was performed on the Bermingham deposit; however, SRK has assumed that the mineralization found within the deposit will have similar metallurgical characteristics to the Bellekeno deposit now being mined by Alexco.

Alexco's Keno Hill district mill located near Keno City currently processes output from the Bellekeno mine, and may in the future process output from other District mine sources as well. It is not currently determinable if resources mined from Bermingham would or even could be processed through the District Mill. Until metallurgical testing has been carried out, it is not determinable if the existing District Mill would be suitable for processing resources from Bermingham. Furthermore, until mining plans have been developed for Bermingham it is also not determinable if the District Mill will have sufficient capacity to process Bermingham mine output.

### Mineral Resource Estimates

The Bermingham resources were estimated using Gemcom's GEMSTM (GEMS) 3D block modeling software in multiple passes in 5 by 3 by 5 m blocks by inverse distance squared. Grade estimates were based on capped 1 m composited assay data. Capping levels for silver were set to 1,500 g/t for the Bermingham Main Vein and 1,000 g/t for the Bermingham Footwall Vein. Lead and zinc were capped at 10% for both veins. Gold grades were capped at 0.20 g/t for both veins. Blocks were classified as Indicated mineral resources if at least two drill holes and four composites were found within a 40 by 40 m search ellipse for the Bermingham Vein and a 40 by 60 m search ellipse for the Bermingham Footwall Vein. All other interpolated blocks were classified as Inferred mineral resource.

Table i below summarises the mineral resources estimated by SRK for the Bermingham deposit as of June 27, 2012.

**Table i: Mineral Resource Statement\* for the Bermingham Deposit, June 27 2012**

Class	Tonne	Ag (g/t)	Au (g/t)	Pb (%)	Zn (%)
Indicated**	257,000	460	0.06	2.00	2.10
Inferred**	102,000	372	0.09	1.12	1.83

\* Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates.

\*\* Reported at an NSR cut-off of \$185 (1 USD = 1 CAD)/t using consensus long-term metal prices (US\$) and recoveries developed for the nearby Bellekeno deposit (Ag US\$23.00/oz, recovery 96%; Pb US\$ 0.95/lb, recovery 97%; Zn US\$ 0.95/lb, recovery 88%; Au US\$ 1,350/oz, recovery 72%). For the Bermingham Vein, Ag grades capped at 1,500 g/t and at 1,000 g/t for the Bermingham Footwall Vein; Pb and Zn capped at 10%; Au grades capped at 0.2 g/t for both veins.

## **Conclusion and Recommendations**

Between 2009 and 2011, Alexco completed three drilling programs on its Birmingham property in the Keno Hill district, located in Central Yukon Territory. The drilling on the Birmingham deposit was successful in confirming the extension of significant silver mineralization beyond historically mined zones in this area.

SRK recommends that Alexco continues exploration on the Birmingham deposit along strike to the southwest and at depth on the Etta Zone to expand the current resource, acquire extended geotechnical data, and obtain additional understanding of the mineralized structures to assist in possible mine planning. Metallurgical studies should be initiated to better understand the nature of the mineralization.

SRK also recommends that Alexco continue exploration in the Arctic Zone, in the footwall of the Mastiff fault, where preliminary drilling has identified the offset portion of the Birmingham Veins.

Baseline environmental studies should also be initiated in anticipation of preliminary economic assessment and permitting requirements. The total cost for the recommended exploration and development program is estimated at \$1.58M.

## ***Elsa Tailings Property***

The Corporation's 100% owned Elsa Tailings property comprises 8 surveyed quartz mining leases in the Keno Hill District, all of which are UKHM Mineral Rights. Located approximately 400 meters northwest of the Elsa town site and the former UKHM mill, the property encompasses the historical impounded tailings which extend over an area of approximately 100 hectares and are contained behind a series of low level dam structures. Historical milling operations at Elsa, which started in the 1930's and operated almost continuously until 1988, produced a lead concentrate, and periodically a zinc concentrate. The tailings consist of unconsolidated fine sand to silty grained material, with sieve analyses indicating that the material is all finer than 250 microns with as much as 40 percent being less than 74 microns (200 mesh). The dominant minerals making up the tailings fragments are quartz and siderite (80 percent), with the balance composed of muscovite, other silicate minerals and pyrite. As reported in the news release dated May 6, 2010 entitled "Alexco Announces Initial Elsa Tailings Resource Estimate, Keno Hill", an indicated resource for the Elsa Tailings has so far been defined estimated at 2,490,000 tonnes grading 119 grams per tonne silver, 0.12 grams per tonne gold, 0.99% lead and 0.70% zinc. This resource estimate is supported by a technical report dated June 16, 2010 filed on the SEDAR website at [www.sedar.com](http://www.sedar.com) and entitled "Mineral Resource Estimation, Elsa Tailings Project, Yukon, Canada" (the "**Elsa Tailings Technical Report**"). The estimate was prepared by SRK under the responsibility of G. David Keller, P.Geol., an Independent Qualified Person as defined by NI 43-101, in conformity with generally accepted CIM Estimation of Mineral Resource and Mineral Reserve Best Practices Guidelines. The resource estimate may be affected by further infill and exploration drilling that may result in increases or decreases in subsequent resource estimates. The resource estimate may also be affected by subsequent assessments of mining, environmental, processing, permitting, taxation, socio-economic and other factors.

The detailed disclosure contained in the Elsa Tailings Technical Report is hereby incorporated by reference, and the summary section from that report is reproduced as follows.

### **Executive Summary**

#### **Introduction**

The Elsa Tailings Project is an advanced project exploring the mineral potential of historical tailings from the former United Keno Hill Mines ("UKHM") mill located in the town of Elsa, Yukon. The Elsa tailings are impounded on the south-eastern slopes of the McQuesten River valley approximately 400 metres from the UKHM mill.

Milling operations at Elsa started in the 1930s and continued almost without interruption until 1988. Historical production records indicate that approximately 4,050,000 tons of tailings were deposited at the Elsa site. Historical resource estimates on the Elsa Tailings Project were made by UKHM in 1970 and 1988.

On June 29, 2009 SRK Consulting (Canada) Inc. ("SRK") was commissioned by Alexco Resource Corporation ("Alexco") to prepare a mineral resource estimate for the Elsa Tailings Project. The resource herein represents a first resource estimate for the deposit prepared for Alexco.

This technical report documents the resource model constructed by SRK. It was prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 and Form 43-101F1, and in conformity with generally accepted CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines."

### **Property Description and Agreements**

The land under the control of Alexco comprises 717 surveyed quartz mining leases, 864 unsurveyed quartz mining claims, and two crown grants. The total area approximates 24,300 hectares. Certain UKHM claims may be subject to unknown or unregistered royalties and/or agreements.

Quartz mining leases provide mineral title to the area occupied by the tailings and are part of a large land package controlled by Alexco through its subsidiaries, Elsa Reclamation and Development Co. ("ERDC") and Alexco Keno Hill Mining Corp. The tailings are located on Quartz Leases: Orchid 1, 3, 15, 26, 31 & 37; Betty and Mud.

Alexco's rights to much of the Keno Hill property are held through the ERDC, a wholly owned subsidiary. In June 2005, PriceWaterhouseCoopers LLP ("PWC"), a court appointed interim receiver and receiver-manager of United Keno Hill Mines Limited and UKH Minerals Limited (collectively "UKHM"), selected Alexco as the preferred purchaser of the assets of UKHM. In February 2006, following negotiation of a Subsidiary Agreement between the Government of Canada, the Government of Yukon, and Alexco, the Supreme Court of Yukon approved the purchase of the assets of UKHM by Alexco through its wholly owned subsidiary, ERDC. The UKHM assets comprised two Crown Grants, 674 mining leases, 289 mineral claims, an ore concentration plant, various buildings and equipment, as well as partial ownership interest in three mining leases, 36 mineral claims, in addition to a leasehold interest in one mineral claim. PWC and Alexco entered into an agreement (the "Purchase Agreement") dated August 4, 2005, as amended on November 2, 2005 and January 31, 2006. Alexco assigned the Purchase Agreement to its wholly owned subsidiary ERDC on February 6, 2006. "Interim Closing" of the UKHM transaction was completed on April 18, 2006. Alexco assumed responsibility for care and maintenance operations at the UKHM property. On November 30, 2006, Alexco terminated a contract with a local contractor and started conducting operations utilizing its own employees and equipment. Title to all UKHM assets was transferred to Alexco ("Final Closing") in November 2007, following the approval of a "Type B" Water License by the Yukon Water Board.

All quartz mining leases have been legally surveyed whereas the quartz mining claims have not. In addition, in 2006 and 2007, 650399 BC Ltd., a wholly owned Alexco subsidiary, staked 673 mineral claims (full size and fractional) adjacent to and contiguous with the UKHM property and purchased 36 quartz claims and 37 quartz mining leases from a third party. In 2008 and 2009, Alexco took four existing claims to lease, acquired an additional 18 claims from a third party, and amalgamated 55 additional existing bordering claims into the holdings. Mineral exploration at Keno Hill was initially permitted under the terms and conditions set out by the Yukon Government in the Class III Quartz Mining Land Use Permit – LQ00186, issued on July 5, 2006 and valid until July 4, 2011. Alexco subsequently obtained a Class IV Quartz Mining Land Use Permit – LQ00240 on June 17, 2008. The two permits were amalgamated on December 8, 2008 under #LQ00240 which is valid until December 16, 2018.

Under the terms of a legal agreement with the Government of Canada and the Government of Yukon, Alexco is indemnified from any and all environmental liability that may be presented by the historic tailings. However, if Alexco were to nominate any part of the tailings as a production unit under the above agreement, responsibility for addressing water-related environmental liabilities would fall to Alexco.

### **Location Access and Physiography**

The Elsa Tailings Project is included within the historic Keno Hill mining camp, located in central Yukon. The closest town is Mayo, located on the Stewart River, about 45 kilometres to the south. Mayo is accessible from Whitehorse via a 407 kilometre all weather road; the town is also serviced by Mayo airport, which is located just to the north. A gravel all-weather road leads from Mayo to the project areas. Historically, the mining camp was linked by river route to the outside world; since 1950, the all-weather highway, which was also used for transporting the ore, has been the main link.

The Keno Hill area is characterized by rolling hills and mountains with relief up to 1200 metres. Slopes are generally gentle with steeper slopes on the north sides of Keno Hill and Sourdough Hill. The Elsa Tailings are located on the south slope of the McQuesten valley centred along the Flat and Porcupine Creek drainages.

### **History**

Milling operations at Elsa started in the 1930s, operating almost continuously until 1988. A lead concentrate with a periodic zinc concentrate was produced from milling operations. A cyanide leach circuit was added in 1958 and operated periodically to 1981 depending on prevailing economics.

It is estimated that in total approximately 4,050,000 tons of tailings were deposited at the Elsa site. Most of this material was allowed to run out onto the flank of the adjacent valley without engineered impoundment. The original ground surface was covered with small trees, brush and a vegetative mat of moss, all of which was eventually covered by the tailings.

The northern portion of the tailings was drilled by UKHM in 1970 and in a second drilling campaign from 1987 to 1988 covering the rest of the tailings area at that time. Metallurgical testing of the tailings was undertaken in 1988 and 1995 by UKHM and a joint venture between UKHM and government agencies.

### **Regional and Local Geology**

The tailings lie on the south slope of the McQuesten valley. The rounded out shape of the valley can be attributed to at least one episode of glaciation followed by the deposition of glaciofluvial sands and gravels related to kame terraces. The glaciofluvial sands and gravels were deposited at higher valley elevations with till deposited at lower valley sides and valley bottoms. During the retreat of glacial ice the McQuesten valley bottom was covered by a shallow lake resulting in the deposition of lacustrine silt. The lacustrine silt became increasingly organic and transitioned to peat as the glacial lake became in filled with sediments.

The Elsa Tailings cover an irregular area of approximately 130 hectares and range from 0.1 to over 4 metres in thickness. While the valley flank on which the tailings have been deposited is relatively smooth topographically, points of higher elevation occur as uncovered "islands" within the body of the tailings. The earliest site of tailings deposition appears to have been directly into Porcupine Creek with the material being mostly flushed downstream into Flat Creek. Beginning in 1946, tailings were directed away from the creeks producing small terraced accumulations immediately below the mill. Somewhat later a pipeline was constructed that discharged tailings further into the valley in the area between Porcupine and Flat Creek. Ten major mines supplied feed to the Elsa Mill during its operation in the 1930s through 1950s. From the 1960s to 1980s ore was processed by the mill underwent a transition from high grade mineralization to lower grade mineralization from small open pits and underground operations.

### **Deposit Type and Mineralization**

The tailings consist of generally unconsolidated silty fine grained sand with minor medium sand grained material, of a variable grey to light brown colour characterized by thin beds to laminae. Detailed mineralogical examination shows that the sand grains are angular and locally aggregated and cemented by limonite. The dominant minerals are quartz and siderite (80 percent) with the balance composed of muscovite and other silicate minerals along with pyrite. Occasional grains contain lead and zinc sulphides and trace amounts of lead and zinc oxide minerals have been identified.

### **Drilling**

UKHM initially carried out a percussion drilling program targeting the thicker northern portion of the tailings in 1970. A total of 114 vertical drill holes were drilled to an average depth of three metres. Drill hole spacing was reported at approximately 60 metres. From 1987 to 1988 a second drilling program was completed by UKHM using a rotary drill for a total of 379 vertical holes (1,770 metres). Alexco and SRK examined historical data and methodologies associated with these programs and conclude that UKHM drilling data were too unreliable to be used for resource evaluation and classification according to CIM best practice guidelines.

Alexco drilled 283 vertical sonic drill holes over the deposit in 2009 for a total of 910 drilled metres. The Alexco drilling campaign consisted of drill holes spaced at 50 metres with lines orientated at an

azimuth of 45 degrees. Average thickness of the tailings is 2.3 metres ranging from a maximum thickness of 7.5 metres to a minimum of 0.2 metres.

Tailings core material is inherently difficult to handle as it is unconsolidated and, in some cases, is saturated with water. Because of the nature of the core material some challenges in core recovery, logging and sample collection exist. SRK is of the opinion that the drilling and sampling performed by Alexco was conducted with care and that the location and handling of the core yielded reasonable samples.

### **Sampling Method, Approach and Analyses**

Drill core was sampled generally at each run length of 1.5 metres or to the lower tailings contact. The entire core was sampled to provide a known volume for density measurements. Sampled core intervals were placed in polyethylene bags secured with "zip ties."

All samples were analyzed by the ISO 9001 accredited ALS Chemex laboratory in North Vancouver, British Columbia. Upon receipt, samples were placed under ovens for high temperature drying and weighed when dry. Following splitting and pulverization samples were analyzed using inductively coupled plasma-atomic emission spectrometry using a four acid digestion. Thirty three elements including silver, lead and zinc were analyzed using this method. Gold assays were analyzed using fire assay with atomic absorption spectrometry.

Quality control samples were placed systematically into the sample stream. Every 20 samples contained at least one blank sample, one standard of known value, and one request for a duplicate assay of the previous sample.

The dry density for each of the 2009 sonic drill samples was determined for each of the assayed cores. Dry density was calculated using the dry weight of the sample from the assay laboratory divided by the drilled interval volume which was based on sampled interval length and the inside diameter of the core tube.

### **Data Verification**

SRK compared 10 percent of the drill hole data assays to original assay certificates. No errors were found in the drill hole assay data base. During the site visit, SRK examined three pits and briefly logged the pit walls of three trenches. SRK also reviewed drill core photos for the sampling program.

### **Mineral Resource Estimation**

Resources were estimated based on 283 drill holes from the 2009 Alexco sonic drilling program. The data set comprises 546 sampled intervals with silver, lead, zinc and gold assays.

A wireframe model of the tailings body was generated by Alexco using high resolution topographic surveys and tailings/sub-surface contacts from the drilling program.

Based on tailings assays the tailings area was subdivided into five domains: A low grade silver-lead, low grade gold, high grade silver-lead, high grade gold, and a zinc-specific gravity domain. A sixth separate domain was created for an isolated area away from the main tailings impoundment.

All tailings drill holes were composited to 1.5 metre intervals from top to bottom with a minimum composite length of 0.20 metres to allow for thin portions of the tailings impoundment. A review of composite statistics and cumulative frequency plots for the metal assays domains indicates that it is not necessary to cap high grade values within the drill hole composites.

Specific gravity composites average 1.7 with a significant dispersion of values ranging from 0.4 to 4.6. Specific gravity composites were capped at a high value of 4.0 and low value of 0.75 for resource estimation.

Variography was undertaken to characterize the spatial continuity of the metal grade data within each resource domain and to determine appropriate grade interpolation ranges. Variograms were developed for four domains including gold, silver, lead, zinc and specific gravity composites. Two structure variograms were developed for each variable in the X and Y directions only. The relatively narrow depth of the tailings precluded development of variograms in the Z direction. Variograms for the high domains with insufficient composites to determine variogram models were assumed to be

the same as for low grade domains. Datamine Studio 3 was used to develop a sub-blocked model for the deposit.

Metal grades and specific gravity were estimated in the block model using ordinary kriging for each of the separate domains and estimate variables. Only one estimation pass was made.

Estimation was verified by visual comparison of composited drill holes, cross-validation and estimation of resources using inverse distance squared and nearest neighbour routines at no cut-off.

While drilling and sampling procedures, tightly spaced drilling, and assay results provide a high level of confidence, the inherent challenges related to drilling and sampling unconsolidated material are reflected in significant outliers in specific gravity determinations. These outliers could not be fully explained by expected specific gravity ranges or measurable sampling errors. For this reason SRK is of the opinion that it is appropriate to classify the Elsa Tailings resource blocks as Indicated. This is because the estimates are based on detailed and reliable exploration and testing information gathered through appropriate techniques that are spaced closely enough for geological and grade continuity to be reasonably assumed.

### Mineral Resources Statement

Mineral Resources for the Elsa Tailings Project have been estimated at 2.49 million tonnes at 119 grams of silver per tonne (“gpt silver”), 0.12 gpt gold, 0.99 percent lead, and 0.70 percent zinc at a 50 gpt silver cut-off grade. The Mineral Resource Statement for the Elsa Tailings deposit is tabulated in **Table i**.

**Table i. Mineral Resource Statement\* for the Elsa Tailings Project, SRK Consulting, May 6, 2010.**

Category	Quantity [Tonnes]	Grade				Contained Metal	
		Ag [gpt]	Au [gpt]	Pb [%]	Zn [%]	Ag [oz]	Au [oz]
Indicated	2,490,000	119.0	0.12	0.99	0.70	9,526,000	9,600

\* Mineral resources are not mineral reserves and do not have demonstrated economic viability. All figures have been rounded to reflect the relative accuracy of the estimates. Includes all blocks in the block model and effectively reported at a 50 gpt silver cut-off grade assuming metal prices of US\$17 per troy ounce silver and US\$1,000 per troy ounce gold, silver recovery of 85% and gold recovery of 35%. Lead and zinc values are not considered.

Mineral Resources for the Elsa Tailings Project have been classified according to the “CIM Standards on Mineral Resources and Reserves: Definition and Guidelines” (December, 2005) by Mr. G. David Keller, P. Geo (#1235) an “Independent Qualified Person” as defined by National Instrument 43-101.

### Interpretation and Conclusions

Six domains were generated by SRK to separate high grade zones for silver, lead and gold. An additional domain was generated for a geographically distinct tailings area that is physically separate from the main tailings. Metal grades were estimated separately for each domain using ordinary kriging. Capping was not applied to metal assays or composites. Dry specific gravity composites were capped using a lowest and highest capping value.

After validation and classification, SRK used silver and gold grades to determine “reasonable prospects for economic extraction.” The basis of this determination was metal grades, heap leach recoveries and estimated mining and processing costs from comparable projects.

The mineral resource statement prepared by SRK is reported at silver cut-off grades of 50 gpt, which are based on the likely extraction scenario. All material in the resource estimate is above this grade.

### Recommendations

It is SRK’s opinion that resources for the Elsa Tailings Project have been defined to sufficient accuracy to support the preparation of a Preliminary Economic Assessment (“PEA”). Alexco has embarked on extensive metallurgical test work to document the metallurgical properties of the tailings material and evaluate appropriate processing options. This aspect is critical for the PEA study.



Untested areas containing additional tailings are known to occur peripherally to the current resource area. These zones offer potential to increase the current resource and are recommended for exploration sampling. Estimated costs for the recommended programs are summarized in **Table ii**.

**Table ii. Estimated Costs of Recommended Programs.**

<b>Program</b>	<b>Cost [CD\$]</b>
Preliminary Economic Assessment	\$200,000
Drilling Program	\$50,000
Total	\$250,000

## **Environmental Services**

### ***General***

The Corporation's environmental services division, AEG, is in the business of managing risk and unlocking value at mature, closed or abandoned sites through integration and implementation of the Corporation's core competencies, which include management of environmental services, implementation of innovative treatment technologies, execution of site reclamation and closure operations, and, if appropriate, rejuvenation of exploration and development activity. The Corporation's principal markets for these services are in Canada, the United States and the Americas, with the Canadian market serviced primarily through Access and ERDC, the U.S. market through Alexco US, and the balance of the Americas through either Access or Alexco US. The Corporation provides its services to a range of industrial sectors, but with a particular focus on current and former mine sites.

The Corporation offers its clients a unique combination of environmental remediation expertise in the area of site reclamation and closure, an ability to manage complex permitting and regulatory programs on a turnkey basis, and strong operations management. In addition, the Corporation seeks to strategically leverage off its environmental services group, accessing opportunities to enhance asset value through effective liability risk management and efficient site operations. This is accomplished through unlocking potential exploration and development opportunities at contaminated or abandoned sites through cost effective and responsible environmental remediation and liability transfer.

The Corporation executes its environmental services business plan by using and applying the intellectual property assets, including the Patents, and the specialized skill sets and knowledge it maintains in-house. While there are a significant number of firms providing environmental services in North America, these assets, skill sets and knowledge provide Alexco with a strong competitive advantage. Consolidated revenue from environmental services for the year ended December 31, 2013 totaled \$16,319,000, compared to \$7,983,000 in 2012, all of which was derived from sales to external unrelated parties. During the year ended December 31, 2013, the Corporation recorded revenues from two customers representing 10% or more of total environmental services revenue, in the amounts of \$7,200,000 and \$4,020,000. During 2012, AEG had two customers representing 10% or more of total revenue, in the amounts of \$1,686,000 and \$1,558,000. AEG's largest single customer is Government, with a substantial component of Government revenues earned from the Government of Canada's Aboriginal Affairs and Northern Development Canada.

### ***Keno Hill Project***

As described above (see "General Development of the Business – Three Year History and Significant Acquisitions"), under the Subsidiary Agreement, Alexco's subsidiary ERDC was retained through Government as a paid contractor responsible on a continuing basis for the environmental care and maintenance and ultimate closure reclamation of the former UKHM Mineral Rights.

The Subsidiary Agreement provided that ERDC share the responsibility for the development of the ultimate closure reclamation plan with the Government of Canada, for which it would receive fees of 65% of agreed commercial contractor rates, and this plan development is currently ongoing. Upon acceptance and regulatory approval, the closure reclamation plan will be implemented by ERDC at full agreed contractor rates. During the period required to develop the plan and until the closure plan is executed, ERDC is also

responsible for carrying out the environmental care and maintenance at various sites within the UKHM Mineral Rights, for a fixed annual fee adjusted each year for certain operating and inflationary factors and determined on a site-by-site basis. Under the Subsidiary Agreement, the portion of the annual fee amount so determined which was billable by ERDC in respect of each site reduced by 15% each year until all site-specific care and maintenance activities were replaced by closure reclamation activities; provided however that should a closure reclamation plan be prepared but not accepted and approved, the portion of annual fees billable by ERDC would revert to 85% until the Subsidiary Agreement was either amended or terminated. ERDC receives agreed commercial contractor rates when retained by Government to provide environmental services in the Keno Hill District outside the scope of care and maintenance and closure reclamation planning under the Subsidiary Agreement. As a result of these terms, the Corporation has previously recognized an environmental services contract loss provision to reflect aggregate future losses estimated to be realized with respect to care and maintenance activity during the closure planning phase.

In July 2013, the Corporation executed an amended and restated Subsidiary Agreement, the ARSA, with the Government of Canada. Recognizing that developing the closure reclamation plan is more complicated than originally anticipated, the ARSA provides for the Government of Canada to contribute a higher proportion of those costs than provided for under the Subsidiary Agreement, retroactive to 2009. As a result, included in revenues for AEG for 2013 is \$1,983,000 in one-time retroactive fees. Going forward, ERDC will receive 95% of agreed commercial contractor rates for ongoing development of the closure reclamation plan. Furthermore, with respect to care and maintenance activity during the closure planning phase, the original reducing fee scale is replaced by a fixed fee of \$850,000 per year, representing approximately 50% of estimated fully-billable fees. As a result, included in AEG cost of sales is an \$850,000 reduction in the Corporation's environmental services contract loss provision, partially offset by a \$107,000 increase due to an extension of the estimated date by which the care and maintenance phase will end to August 2018.

### **Social and Environmental Policies**

The Corporation maintains a written Code of Business Conduct and Ethics (the "**Code**"), compliance with which is mandatory for all directors, officers and employees, and the full text of which may be viewed at the Corporation's web site. Included within the Code is a requirement that all directors, officers and employees comply with all laws and governmental regulations applicable to Alexco's activities, including but not limited to maintaining a safe and healthy work environment, promoting a workplace that is free from discrimination or harassment and conducting all activities in full compliance with all applicable environmental laws. All directors, officers and employees are required to certify in writing their acknowledgement of and compliance with the Code, at the time of hiring and at least annually thereafter. A senior executive of the Corporation is formally appointed the role of Company Ethics Officer, responsible for ensuring adherence to the Code, investigating any reported violations, and ensuring appropriate responses, including corrective action and preventative measures, are taken when required.

### **Risk Factors**

The following are major risk factors management has identified which relate to the Corporation's business activities. Such risk factors could materially affect the Corporation's future financial results, and could cause events to differ materially from those described in forward-looking statements relating to the Corporation. Though the following are major risk factors identified by management, they do not comprise a definitive list of all risk factors related to the Corporation's business and operations. Other specific risk factors are discussed elsewhere in this AIF, as well as in the Corporation's consolidated financial statements (under the headings "Description of Business and Nature of Operations", "Significant Accounting Policies" and "Financial Instruments" and elsewhere within that document) and in management's discussion and analysis (under the headings "Critical Accounting Estimates" and "Risk Factors" and elsewhere within that document) for its most recently completed financial year, being the year ended December 31, 2013, and its other disclosure documents, all as filed on the SEDAR website at [www.sedar.com](http://www.sedar.com).

### **Exploration, Evaluation and Development**

Mineral exploration, evaluation and development involves a high degree of risk and few properties which are explored are ultimately developed into producing mines. With respect to the Corporation's properties, should any ore reserves exist, substantial expenditures will be required to confirm ore reserves which are

sufficient to commercially mine, and to obtain the required environmental approvals and permitting required to commence commercial operations. Should any mineral resource be defined on such properties there can be no assurance that the mineral resource on such properties can be commercially mined or that the metallurgical processing will produce economically viable and saleable products. The decision as to whether a property contains a commercial mineral deposit and should be brought into production will depend upon the results of exploration programs and/or technical studies, and the recommendations of duly qualified engineers and/or geologists, all of which involves significant expense. This decision will involve consideration and evaluation of several significant factors including, but not limited to: (1) costs of bringing a property into production, including exploration and development work, preparation of appropriate technical studies and construction of production facilities; (2) availability and costs of financing; (3) ongoing costs of production; (4) market prices for the minerals to be produced; (5) environmental compliance regulations and restraints (including potential environmental liabilities associated with historical exploration activities); and (6) political climate and/or governmental regulation and control.

The ability of the Corporation to sell, and profit from the sale of any eventual production from any of the Corporation's properties will be subject to the prevailing conditions in the marketplace at the time of sale. Many of these factors are beyond the control of the Corporation and therefore represent a market risk which could impact the long term viability of the Corporation and its operations.

***Figures for the Corporation's Resources are Estimates Based on Interpretation and Assumptions and May Yield Less Mineral Production Under Actual Conditions than is Currently Estimated***

In making determinations about whether to advance any of its projects to development, the Corporation must rely upon estimated calculations as to the mineral resources and grades of mineralization on its properties. Until ore is actually mined and processed, mineral resources and grades of mineralization must be considered as estimates only. Mineral resource estimates are imprecise and depend upon geological interpretation and statistical inferences drawn from drilling and sampling which may prove to be unreliable. Alexco cannot be certain that:

- reserve, resource or other mineralization estimates will be accurate; or
- mineralization can be mined or processed profitably.

Any material changes in mineral resource estimates and grades of mineralization will affect the economic viability of placing a property into production and a property's return on capital. The Corporation's resource estimates have been determined and valued based on assumed future prices, cut-off grades and operating costs that may prove to be inaccurate. Extended declines in market prices for silver, gold, lead, zinc and other commodities may render portions of the Corporation's mineralization uneconomic and result in reduced reported mineral resources.

***Keno Hill District***

While the Corporation has conducted exploration activities in the Keno Hill District, other than with respect to Bellekeno, Lucky Queen and Flame & Moth, further review of historical records and additional exploration and geological testing will be required to determine whether any of the mineral deposits it contains are economically recoverable. There is no assurance that such exploration and testing will result in favourable results. The history of the Keno Hill District has been one of fluctuating fortunes, with new technologies and concepts reviving the District numerous times from probable closure until 1989, when it did ultimately close down for a variety of economic and technical reasons. Many or all of these economic and technical issues will need to be addressed prior to the commencement of any future production on the Keno Hill properties.

***Mining Operations***

Decisions by the Corporation to proceed with the construction and development of mines, including Bellekeno, are based on development plans which include estimates for metal production and capital and operating costs. Until completely mined and processed, no assurance can be given that such estimates will be achieved. Failure to achieve such production and capital and operating cost estimates or material increases in costs could have an adverse impact on the Corporation's future cash flows, profitability, results

of operations and financial condition. The Corporation's actual production and capital and operating costs may vary from estimates for a variety of reasons, including: actual resources mined varying from estimates of grade, tonnage, dilution and metallurgical and other characteristics; short-term operating factors relating to the mineable resources, such as the need for sequential development of resource bodies and the processing of new or different resource grades; revisions to mine plans; risks and hazards associated with mining; natural phenomena, such as inclement weather conditions, water availability, floods and earthquakes; and unexpected labour shortages or strikes. Costs of production may also be affected by a variety of factors, including changing waste ratios, metallurgical recoveries, labour costs, commodity costs, general inflationary pressures and currency rates. In addition, the risks arising from these factors are further increased while any such mine is progressing through the ramp-up phase of its operations and has not yet established a consistent production track record.

Furthermore, mining operations at the Bellekeno mine project were suspended as of early September 2013 as a result of sharp and significant declines in precious metals prices during the second quarter of 2013. Re-start of mining operations is dependent on a number of factors, including sustained improvements in silver markets and the effectiveness of cost structure reduction measures, and the uncertainties around the achievement of these factors are significant.

### ***Employee Recruitment and Retention***

Recruitment and retention of skilled and experienced employees is a challenge facing the mining sector as a whole. During the late 1990s and early 2000s, with unprecedented growth in the technology sector and an extended cyclical downturn in the mining sector, the number of new workers entering the mining sector was depressed and significant number of existing workers departed, leading to a so-called "generational gap" within the industry. Since the mid 2000s, this factor was exacerbated by competitive pressures as the mining sector experienced an extended cyclical upturn. Additional exacerbating factors specific to Alexco include competitive pressures in labour force demand from the oil sands sector in northern Alberta and the mining and oil & gas sectors in British Columbia, and the fact that Alexco's Keno Hill District is a fly-in/fly-out operation. Alexco has experienced employee recruitment and retention challenges, particularly with respect to mill operators in 2011 and through the first three quarters of 2012. There can be no assurance that such challenges won't continue or resurface, not only with respect to the mill but in other District operational areas as well including mining and exploration. Furthermore, any re-start of mining operations will necessitate the re-hiring of mine and mill personnel.

### ***Permitting and Environmental Risks and Other Regulatory Requirements***

The current or future operations of the Corporation, including development activities, commencement of production on its properties and activities associated with the Corporation's mine reclamation and remediation business, require permits or licenses from various federal, territorial and other governmental authorities, and such operations are and will be governed by laws, regulations and agreements governing prospecting, development, mining, production, taxes, labour standards, occupational health, waste disposal, toxic substances, land use, environmental protection, mine safety and other matters. Companies engaged in the development and operation of mines and related facilities and in mine reclamation and remediation activities generally experience increased costs and delays as a result of the need to comply with the applicable laws, regulations and permits. There can be no assurance that all permits and permit modifications which the Corporation may require for the conduct of its operations will be obtainable on reasonable terms or that such laws and regulations would not have an adverse effect on any project which the Corporation might undertake, including but not limited to the Bellekeno mine project.

Failure to comply with applicable laws, regulations and permitting requirements may result in enforcement actions including orders issued by regulatory or judicial authorities causing operations to cease or be curtailed, and may include corrective measures requiring capital expenditures, installation of additional equipment or remedial actions. Parties engaged in mining operations or in mine reclamation and remediation activities may be required to compensate those suffering loss or damage by reason of such activities and may have civil or criminal fines or penalties imposed upon them for violation of applicable laws or regulations.

Amendments to current laws, regulations and permits governing operations and activities of mining companies and mine reclamation and remediation activities could have a material adverse impact on the

Corporation. As well, policy changes and political pressures within and on federal, territorial and First Nation governments having jurisdiction over or dealings with the Corporation could change the implementation and interpretation of such laws, regulations and permits, also having a material adverse impact on the Corporation. Such impacts could result in one or more of increases in capital expenditures or production costs, reductions in levels of production at producing properties or abandonment or delays in the development of new mining properties.

### ***Environmental Services***

A material decline in the level of activity or reduction in industry willingness to spend capital on mine reclamation, remediation or environmental services could adversely affect demand for AEG's environmental services. Likewise, a material change in mining product commodity prices, the ability of mining companies to raise capital or changes in domestic or international political, regulatory and economic conditions could adversely affect demand for AEG's services.

Two of AEG's customers accounted for 44.1% and 24.6%, respectively, of environmental services revenues in the 2013 fiscal year. The loss of, or a significant reduction in the volume of business conducted with, either of these customers could have a significant detrimental effect on the Corporation's environmental services business.

The patents which the Corporation owns or has access to or other proprietary technology may not prevent AEG's competitors from developing substantially similar technology, which may reduce AEG's competitive advantage. Similarly, the loss of access to any of such patents or other proprietary technology or claims from third parties that such patents or other proprietary technology infringe upon proprietary rights which they may claim or hold would be detrimental to AEG's reclamation and remediation business.

The Corporation may not be able to keep pace with continual and rapid technological developments that characterize the market for AEG's environmental services, and the Corporation's failure to do so may result in a loss of its market share. Similarly, changes in existing regulations relating to mine reclamation and remediation activities could require the Corporation to change the way it conducts its business.

AEG is dependent on the professional skill sets of its employees, some of whom would be difficult to replace. The loss of any such employees could significantly affect AEG's ability to service existing clients, its profitability and its ability to grow its business.

### ***Potential Profitability Of Mineral Properties Depends Upon Factors Beyond the Control of the Corporation***

The potential profitability of mineral properties is dependent upon many factors beyond the Corporation's control. For instance, world prices of and markets for gold, silver, lead and zinc are unpredictable, highly volatile, potentially subject to governmental fixing, pegging and/or controls and respond to changes in domestic, international, political, social and economic environments. Another factor is that rates of recovery of mined ore may vary from the rate experienced in tests and a reduction in the recovery rate will adversely affect profitability and, possibly, the economic viability of a property. Profitability also depends on the costs of operations, including costs of labour, materials, equipment, electricity, environmental compliance or other production inputs. Such costs will fluctuate in ways the Corporation cannot predict and are beyond the Corporation's control, and such fluctuations will impact on profitability and may eliminate profitability altogether. Additionally, due to worldwide economic uncertainty, the availability and cost of funds for development and other costs have become increasingly difficult, if not impossible, to project. These changes and events may materially affect the financial performance of the Corporation.

### ***First Nation Rights and Title***

The nature and extent of First Nation rights and title remains the subject of active debate, claims and litigation in Canada, including in the Yukon and including with respect to intergovernmental relations between First Nation authorities and federal, provincial and territorial authorities. There can be no guarantee that such claims will not cause permitting delays, unexpected interruptions or additional costs for the Corporation's projects.

### ***Title to Mineral Properties***

The acquisition of title to mineral properties is a complicated and uncertain process. The properties may be subject to prior unregistered agreements of transfer or land claims, and title may be affected by undetected defects. The Corporation has taken steps, in accordance with industry standards, to verify mineral properties in which it has an interest. Although the Corporation has made efforts to ensure that legal title to its properties is properly recorded in the name of the Corporation, there can be no assurance that such title will ultimately be secured.

### ***Capitalization and Commercial Viability***

The Corporation will require additional funds to further explore, develop and mine its properties. The Corporation has limited financial resources, and there is no assurance that additional funding will be available to the Corporation to carry out the completion of all proposed activities, for additional exploration or for the substantial capital that is typically required in order to place a property into commercial production. Although the Corporation has been successful in the past in obtaining financing through the sale of equity securities, there can be no assurance that the Corporation will be able to obtain adequate financing in the future or that the terms of such financing will be favourable. Failure to obtain such additional financing could result in the delay or indefinite postponement of further exploration and development of its properties.

### ***General Economic Conditions May Adversely Affect the Corporation's Growth and Profitability***

The unprecedented events in global financial markets since 2008 have had a profound impact on the global economy and led to increased levels of volatility. Many industries, including the mining industry, are impacted by these market conditions. Some of the impacts of the current financial market turmoil include contraction in credit markets resulting in a widening of credit risk, devaluations and high volatility in global equity, commodity, foreign currency exchange and precious metal markets, and a lack of market liquidity. If the current turmoil and volatility levels continue they may adversely affect the Corporation's growth and profitability. Specifically:

- a global credit/liquidity or foreign currency exchange crisis could impact the cost and availability of financing and the Corporation's overall liquidity;
- the volatility of silver and other commodity prices would impact the Corporation's revenues, profits, losses and cash flow;
- volatile energy prices, commodity and consumables prices and currency exchange rates would impact the Corporation's operating costs; and
- the devaluation and volatility of global stock markets could impact the valuation of the Corporation's equity and other securities.

These factors could have a material adverse effect on Alexco's financial condition and results of operations.

### ***Operating Hazards and Risks***

In the course of exploration, development and production of mineral properties, certain risks, particularly including but not limited to unexpected or unusual geological operating conditions including rock bursts, cave-ins, fires, flooding and earthquakes, may occur. It is not always possible to fully insure against such risks and the Corporation may decide not to insure against such risks as a result of high premiums or other reasons. Should such liabilities arise, they could reduce or eliminate any future profitability and result in increasing costs and a decline in the value of the securities of the Corporation.

Adverse weather conditions could also disrupt the Corporation's environmental services business and/or reduce demand for the Corporation's services.

## **Competition**

Significant and increasing competition exists for mining opportunities internationally. There are a number of large established mining companies with substantial capabilities and far greater financial and technical resources than the Corporation. The Corporation may be unable to acquire additional attractive mining properties on terms it considers acceptable and there can be no assurance that the Corporation's exploration and acquisition programs will yield any new reserves or result in any commercial mining operation.

### ***Certain of the Corporation's Directors and Officers are Involved with Other Natural Resource Companies, Which May Create Conflicts of Interest from Time to Time***

Some of the Corporation's directors and officers are directors or officers of other natural resource or mining-related companies. These associations may give rise to conflicts of interest from time to time. As a result of these conflicts of interest, the Corporation may miss the opportunity to participate in certain transactions.

### ***The Corporation May Fail to Maintain Adequate Internal Control Over Financial Reporting Pursuant to the Requirements of the Sarbanes-Oxley Act.***

Section 404 of the Sarbanes-Oxley Act ("**SOX**") requires an annual assessment by management of the effectiveness of the Corporation's internal control over financial reporting. The Corporation may fail to maintain the adequacy of its internal control over financial reporting as such standards are modified, supplemented or amended from time to time, and the Corporation may not be able to ensure that it can conclude, on an ongoing basis, that it has effective internal control over financial reporting in accordance with Section 404 of SOX. The Corporation's failure to satisfy the requirements of Section 404 of SOX on an ongoing, timely basis could result in the loss of investor confidence in the reliability of its financial statements, which in turn could harm the Corporation's business and negatively impact the trading price or the market value of its securities. In addition, any failure to implement required new or improved controls, or difficulties encountered in their implementation, could harm the Corporation's operating results or cause it to fail to meet its reporting obligations. Future acquisitions of companies, if any, may provide the Corporation with challenges in implementing the required processes, procedures and controls in its acquired operations. No evaluation can provide complete assurance that the Corporation's internal control over financial reporting will detect or uncover all failures of persons within the Corporation to disclose material information otherwise required to be reported. The effectiveness of the Corporation's processes, procedures and controls could also be limited by simple errors or faulty judgments. Although the Corporation intends to expend substantial time and incur substantial costs, as necessary, to ensure ongoing compliance, there is no certainty that it will be successful in complying with Section 404 of SOX.

## **DIVIDENDS**

The Corporation has not paid any dividends on its common shares since its incorporation. Any decision to pay dividends on common shares in the future will be made by the board of directors on the basis of the earnings, financial requirements and other conditions existing at such time.

## **DESCRIPTION OF CAPITAL STRUCTURE**

The authorized capital of the Corporation consists of an unlimited number of common shares, without par value.

There are no special rights or restrictions of any nature attached to any of the common shares, which all rank equally as to all benefits which might accrue to the holders of the common shares.

## **MARKET FOR SECURITIES**

### **Trading Price and Volume**

The common shares of the Corporation are listed and posted for trading on the Toronto Stock Exchange (the "**TSX**") under the symbol "AXR", and on the NYSE MKT Equities Exchange (the "**NYSE MKT**") under

the symbol "AXU". The following tables set forth the market price range and trading volumes of the Corporation's common shares on each of the TSX and NYSE MKT for the periods indicated.

TSX

<b>Period</b>	<b>Volume</b>	<b>High (C\$)</b>	<b>Low (C\$)</b>
December 2013	494,800	\$1.55	\$1.23
November 2013	543,300	\$1.66	\$1.25
October 2013	621,300	\$1.82	\$1.20
September 2013	1,045,600	\$2.51	\$1.37
August 2013	1,641,800	\$2.55	\$1.06
July 2013	986,600	\$1.50	\$1.12
June 2013	1,062,200	\$1.67	\$0.94
May 2013	2,170,900	\$2.07	\$1.53
April 2013	2,910,700	\$3.35	\$1.98
March 2013	1,491,900	\$4.17	\$3.27
February 2013	1,560,600	\$4.71	\$3.65
January 2013	1,561,800	\$4.51	\$3.50

NYSE MKT

<b>Period</b>	<b>Volume</b>	<b>High (US\$)</b>	<b>Low (US\$)</b>
December 2013	8,190,000	\$1.40	\$1.15
November 2013	3,766,000	\$1.43	\$1.20
October 2013	4,629,500	\$1.75	\$1.17
September 2013	6,383,200	\$2.38	\$1.38
August 2013	10,092,700	\$2.43	\$1.03
July 2013	7,094,600	\$1.45	\$1.04
June 2013	9,521,200	\$1.64	\$0.90
May 2013	8,369,400	\$2.05	\$1.47
April 2013	12,356,300	\$3.31	\$1.92
March 2013	6,708,400	\$4.06	\$3.16
February 2013	5,356,500	\$4.72	\$3.54
January 2013	6,387,200	\$4.55	\$3.56

**Securities Not Listed or Quoted**

The only classes of securities of the Corporation that are not listed or quoted on a marketplace are stock options and broker warrants. During the year ended December 31, 2013, 641,500 stock options and nil warrants were issued.



## DIRECTORS AND OFFICERS

### Name, Occupation and Security Holding

The name, province or state, country of residence, position or office held with the Corporation and principal occupation during the past five years of each director and executive officer of the Corporation as at December 31, 2013 and as at the date hereof are described as follows:

Name and Address <sup>(1)</sup>	Office or Position Held	Principal Occupation During the Past Five Years	Previous Service as a Director
Clynton R. Nauman Washington, USA	President, Chief Executive Officer and Director <sup>(4)</sup>	President and Chief Executive Officer of the Corporation, since December 2004.	Since December 3, 2004
George Brack British Columbia, Canada	Chairman and Director <sup>(2)(3)(5)</sup>	Member of the Board of Directors of several publicly-listed companies since January 2009; Managing Director and Industry Head – Mining with Scotia Capital Inc., from December 2006 to January 2009.	Since December 11, 2007
Michael Winn California, USA	Director <sup>(2)(3)(5)</sup>	President of Seabord Capital Corp., providing investment analysis and financial services to companies in the oil & gas, mining and energy sectors, since January 2013; President of Terraresearch Inc., a consulting company providing analysis on mining and energy companies, from 1997 through 2012.	Since January 11, 2005
Rick Van Nieuwenhuyse British Columbia, Canada	Director <sup>(3)(4)</sup>	President and Chief Executive Officer of NovaCopper Inc., a mineral exploration and development company, since November 2011; President and Chief Executive Officer of NovaGold Resources Inc., a mineral exploration and development company, from May 1999 to November 2011.	Since January 11, 2005
David Searle British Columbia, Canada	Director <sup>(4)(5)</sup>	Retired. Lawyer with Fasken Martineau DuMoulin LLP, October 2001 to August 2006.	Since May 12, 2006
Terry Krepiakevich British Columbia, Canada	Director <sup>(2)</sup>	Member of the Board of Directors of several publicly-listed and private companies since July 2011; Chief Financial Officer of SouthGobi Resources Ltd., a mining company, from June 2006 to July 2011.	Since July 22, 2009
Richard N. Zimmer British Columbia, Canada	Director <sup>(4)</sup>	Member of the Board of Directors of several publicly-listed and private companies since June 2011; President and Chief Executive Officer of Far West Mining Ltd., a mining company, from 2008 to June 2011.	Since May 2, 2012
Bradley Thrall Washington, USA	Executive Vice President and Chief Operating Officer	Chief Operating Officer of the Corporation, since December 2004.	N/A
David Whittle British Columbia, Canada	Senior Vice President, Chief Financial Officer and Company Ethics Officer	Chief Financial Officer of the Corporation, since October 2007.	N/A
Alan McOnie Bay of Plenty, New Zealand	Vice President, Exploration	Vice President, Exploration of the Corporation, since December 2010; consulting geologist from 2002 to December 2010.	N/A

(1) The information as to the jurisdiction of residence and principal occupation, not being within the knowledge of the Corporation, has been furnished by the respective individuals individually.

(2) Member of the Audit Committee.

(3) Member of the Nominating & Corporate Governance Committee.

(4) Member of the Environmental, Health, Safety & Technical Committee.

(5) Member of the Compensation Committee.

Each of the Corporation's directors is elected by the Corporation's shareholders at an annual meeting to serve until the next annual meeting of shareholders or until a successor is elected or appointed. The board of directors appoints the Corporation's executive officers annually after each annual meeting, to serve at the discretion of the board of directors.

Based on information provided by such persons, as at the date hereof the directors and executive officers of the Corporation as a group beneficially owned, directly or indirectly, or exercised control or direction over, an aggregate of 4,564,458 common shares of the Corporation (including 1,940,299 shares owned by ALM Investments ULC (formerly Asset Liability Management Group ULC), a company controlled by Mr. Nauman), representing approximately 7% of the issued and outstanding common shares of the Corporation. In addition, the directors and executive officers of the Corporation as a group held stock options for the purchase of an aggregate of 2,563,000 common shares in the capital of the Corporation, representing approximately 61% of all outstanding options.

### **Cease Trade Orders, Bankruptcies, Penalties or Sanctions**

To the knowledge of the Corporation, none of the Corporation's directors or executive officers is, as at the date of this AIF, or has been, within ten years before the date of this AIF, a director, chief executive officer or chief financial officer of any Corporation (including the Corporation) that:

- (a) was subject to an Order (as defined below) that was issued while the director or executive officer was acting in the capacity as director, chief executive officer or chief financial officer; or
- (b) was subject to an Order that was issued after the director or executive officer ceased to be a director, chief executive officer or chief financial officer and which resulted from an event that occurred while that person was acting in the capacity as director, chief executive officer or chief financial officer;

**"Order"** means a cease trade order, an order similar to a cease trade order, or an order that denied the relevant Corporation access to any exemption under securities legislation and, in each case, that was in effect for a period of more than 30 consecutive days.

Other than as disclosed below, none of the Corporation's directors or executive officers or, to the Corporation's knowledge, any shareholder holding a sufficient number of securities of the Corporation to affect materially the control of the Corporation:

- (a) is, as at the date of this AIF, or has been within the 10 years before the date of this AIF, a director or executive officer of any Corporation (including the Corporation) that, while that person was acting in that capacity, or within a year of that person ceasing to act in that capacity, became bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency or was subject to or instituted any proceedings, arrangement or compromise with creditors or had a receiver, receiver manager or trustee appointed to hold its assets; or
- (b) has, within the 10 years before the date of this AIF, become bankrupt, made a proposal under any legislation relating to bankruptcy or insolvency, or become subject to or instituted any proceedings, arrangement or compromise with creditors, or had a receiver, receiver manager or trustee appointed to hold the assets of the proposed director; or
- (c) has been subject to:
  - (i) any penalties or sanctions imposed by a court relating to securities legislation or by a securities regulatory authority or has entered into a settlement agreement with a securities regulatory authority; or
  - (ii) any other penalties or sanctions imposed by a court or regulatory body that would likely be considered important to a reasonable investor in making an investment decision.

From 2004 to 2007, David Whittle was a director of Image Innovations Holdings, Inc. ("**Image**"), a company incorporated in the United States. Image and its subsidiaries filed voluntary petitions for relief under Chapter 11, Title 11 of the United States Code on July 6, 2006. Image's Joint Chapter 11 Liquidating Plan

was confirmed by the Bankruptcy Court on August 21, 2007, and the Final Decree closing the Chapter 11 cases was entered August 28, 2008.

### **Conflicts of Interest**

The directors of the Corporation are required by law to act honestly and in good faith with a view to the best interest of the Corporation and to disclose any interests which they may have in any project or opportunity of the Corporation. If a conflict of interest arises at a meeting of the board of directors, any director in a conflict will disclose his interest and abstain from voting on such matter. In determining whether or not the Corporation will participate in any project or opportunity, that director will primarily consider the degree of risk to which the Corporation may be exposed and its financial position at that time.

To the best of the Corporation's knowledge, there are no known existing or potential conflicts of interest among the Corporation, its promoters, directors, officers or other members of management of the Corporation as a result of their outside business interests except that certain of the directors, officers, promoters and other members of management serve as directors, officers, promoters and members of management of other public companies, and therefore it is possible that a conflict may arise between their duties as a director, officer, promoter or member of management of such other companies.

The directors and officers of the Corporation are aware of the existence of laws governing accountability of directors and officers for corporate opportunity and requiring disclosures by directors of conflicts of interest and the Corporation relies upon such laws in respect of any directors' and officers' conflicts of interest or in respect of any breaches of duty by any of its directors or officers. Such directors or officers in accordance with the *Business Corporations Act* (British Columbia) are required to disclose all such conflicts and to govern themselves in respect thereof to the best of their ability in accordance with the obligations imposed upon them by law.

### **AUDIT COMMITTEE INFORMATION**

#### **Audit Committee Charter**

The following is the text of the Audit Committee's Charter:

#### **GENERAL**

The primary function of the Audit Committee, under the supervision of the Board, is to assist the Board in fulfilling its oversight responsibilities regarding the integrity of the Company's accounting and financial reporting processes and provision of financial information to the shareholders and others, the systems of internal controls and disclosure controls, the Company's internal and external audit process, the Company's policies with regard to ethics and business practices, and monitoring compliance with the Company's legal and regulatory requirements with respect to its financial statements.

The Audit Committee is accountable to the Board. In the course of fulfilling its specific responsibilities hereunder, the Audit Committee is expected to maintain open communications between the Company's external auditor, senior management and the Board.

The Audit Committee does not plan or perform audits or warrant or attest to the accuracy or completeness of the Company's financial statements or financial disclosure or compliance with generally accepted accounting procedures as these are the responsibilities of management and the external auditor.

#### **COMPOSITION**

The Audit Committee shall be comprised of at least three directors, who generally shall be appointed or confirmed by the Board annually. The Chair of the Audit Committee shall be appointed by the Board, failing which the members of the Audit Committee may designate a Chair by a majority vote of the full Audit Committee membership. All members of the Audit Committee shall be directors and shall meet the independence, financial literacy and experience requirements under applicable laws, rules and regulations binding on the Company from time to time, including without limitation the applicable rules of any stock exchanges upon which the Company's shares are listed and the

requirements for independence and financial literacy under National Instrument 52-110 *Audit Committees* (“**NI 52-110**”) in Canada, Section 803A of the NYSE Amex Company Guide and Rule 10A-3 of the United States Securities Exchange Act of 1934, as amended (the “**Exchange Act**”). Furthermore, at least one member of the Audit Committee shall qualify as a “financial expert” as such term is defined in Item 407 of Regulation S-K under the Exchange Act.

### **PROCEDURAL MATTERS**

The Audit Committee:

- (a) Shall meet at least four times per year on a quarterly basis, either by telephone conference or in person. Any member of the Audit Committee may call such a meeting. A majority of the members appointed to the Audit Committee shall constitute a quorum. For clarity, quorum may be reached in person, or by telephone, video conference, or other communication facilities acceptable to the Board. Matters decided by the Audit Committee shall be decided by majority votes, and the Chair of the Audit Committee shall only have an ordinary vote with no additional tie-breaking powers.
- (b) May invite the Company's external auditor, the CFO, and such other persons as deemed appropriate by the Audit Committee to attend meetings of the Audit Committee. As part of its mandate to foster open communication, the Audit Committee shall meet at least annually with the CFO and the external auditor in separate sessions, and to that end the Audit Committee generally shall have as a standing agenda item an in-camera meeting with the external auditors for any meeting at which they attend.
- (c) Shall report material decisions and actions of the Audit Committee to the Board, together with such recommendations as the Audit Committee may deem appropriate, at the next Board meeting.
- (d) Shall review the performance of the Audit Committee on an annual basis and report the results of such review to the Nominating & Corporate Governance Committee.
- (e) Shall review and assess this Charter for the Audit Committee at least annually and submit any proposed revisions to the Board for approval.
- (f) Has the power to conduct or authorize investigations into any matter within the scope of its responsibilities. The Audit Committee has the right to engage independent counsel and other advisors as it determines necessary to carry out its duties, and the right to set and pay, without restriction, the compensation for any such counsel or advisors engaged by the Audit Committee.
- (g) Has the right to communicate directly with the CFO and other members of management who have responsibility for the audit process (“**Internal Audit Management**”), as well as directly with the external auditor.
- (h) Has the right to require payment of (i) compensation to any external auditor engaged for the purpose of preparing or issuing an audit report or performing audit, review or attest services for the Company and (ii) all ordinary expenses of the Audit Committee that are necessary or appropriate in carrying out its duties.

### **RESPONSIBILITIES**

Subject to the powers and duties of the Board, the Board hereby delegates to the Audit Committee the following powers and duties to be performed by the Audit Committee on behalf of and for the Board.

#### *Financial Reporting, Accounting and Financial Management*

The Audit Committee has primary responsibility for overseeing the actions of management in all aspects of financial management and reporting. The Audit Committee shall:

- (a) Review and recommend to the Board for approval the Company's annual and interim financial statements, annual and interim Management's Discussion and Analysis, Annual Information Form, annual report filed pursuant to the Exchange Act on Form 40-F (or such other form as may apply), future-oriented financial information or pro-forma information, and other financial disclosure in continuous disclosure documents, including within any annual or interim profit or loss press releases, and any certification, report, opinion or review rendered by the external auditor, before the Company publicly discloses such information. (See also "*Interim Financial Statements*" below.)
- (b) Ensure that it is satisfied that adequate procedures are in place for the review of the Company's public disclosure of financial information extracted or derived from the Company's financial statements (other than public disclosure referred to in subsection (a) immediately above) and periodically assess the adequacy of those procedures as necessary.
- (c) Review material financial risks with management, the plan that management has implemented to monitor and deal with such risks, and the success of management in following the plan.
- (d) Consult annually and otherwise as required with the Company's CEO and CFO respecting the adequacy of the internal controls and review any breaches or deficiencies.
- (e) Review as necessary the process with regard to certifications, and ensure certifications by the CEO and CFO attesting to disclosure controls and procedures and internal control over financial reporting are obtained and filed as required under National Instrument 52-109 *Certification of Disclosure In Issuers' Annual and Interim Filings* and the Exchange Act in connection with the Company's annual and interim financial reporting filings.
- (f) Review management's response to significant written reports and recommendations issued by the external auditor and the extent to which such recommendations have been implemented by management. Review such responses with the external auditor as necessary.
- (g) Review with management the Company's compliance with applicable laws and regulations respecting financial matters.
- (h) Review with management proposed regulatory changes and their impact on the Company.
- (i) Review with management and approve public disclosure of the Audit Committee Charter.

#### *External Auditor*

The Audit Committee has primary responsibility for the selection, appointment, dismissal, compensation and oversight of the external auditor, subject to the overall approval of the Board. For this purpose, the Audit Committee may consult with management, but the external auditor shall report directly to the Audit Committee. The specific responsibilities of the Audit Committee with regard to the external auditor are to:

- (a) Recommend to the Board annually:
  - (i) the external auditor to be nominated (whether the current external auditor or a suitable alternative) for the purpose of preparing or issuing an auditor's report or performing other audit, review, or attest services for the Company; and
  - (ii) the compensation of the external auditor.
- (b) Oversee the work of the external auditor engaged for the purpose of preparing or issuing an auditor's report or performing other audit, review or attest services for the Company.
- (c) Resolve disagreements, if any, between management and the external auditor regarding financial reporting. To resolve such disagreements, the Audit Committee shall query management and the external auditor and take other steps as necessary. The Audit

Committee shall provide the Board with such recommendations and reports with respect to the financial statements of the Company as it deems advisable.

- (d) Take reasonable steps to confirm the independence of the external auditor, including but not limited to ensuring receipt from the external auditor of a formal written statement delineating all relationships between the external auditor and the Company, actively engaging in a dialogue with the auditor with respect to any disclosed relationship or services and pre-approving any non-audit related services provided by the external auditor to the Company or the Company's subsidiaries, if any, with a view to ensuring independence of the auditor. If necessary, recommend to the Board to take appropriate corrective action to ensure the independence of the external auditor.
- (e) Review and pre-approve all audit and audit-related services and the fees related thereto, provided by the Company's external auditor.
- (f) Review and pre-approve all non-audit services to be performed by the Company's external auditor in accordance with any applicable regulatory requirements, including but not limited to NI 52-110, the Exchange Act and the requirements of any stock exchange upon which the Company's shares are listed. The Audit Committee may delegate pre-approval authority for non-audit services to one or more independent members of the Audit Committee provided that any such pre-approval decisions must be presented to the full Audit Committee at its next meeting thereafter. The Audit Committee may also satisfy this pre-approval requirement if it first adopts specific policies and procedures respecting same in accordance with NI 52-110 such that the pre-approval policies and procedures are detailed as to the particular service, the Audit Committee is informed of each such non-audit service, and the procedures do not include delegation of the Audit Committee's responsibilities to management.
- (g) Obtain from the external auditor confirmation that the external auditor is a 'participating audit' firm for the purpose of National Instrument 52-108 *Auditor Oversight* and is registered with the Public Company Accounting Oversight Board in the United States, and is otherwise in compliance with all applicable governing regulations.
- (h) Review and evaluate the performance of the external auditor.
- (i) Review and approve the Company's hiring policies regarding partners, employees and former partners and employees of the Company's present and former external auditors.

#### *Audit and Financial Reporting Process*

The Audit Committee has a duty to receive, review and make any inquiry regarding the completeness, accuracy and presentation of the Company's financial statements to ensure that the financial statements fairly present the financial position and risks of the organization and are prepared in accordance with the applicable generally accepted accounting principles. To accomplish this, the Audit Committee shall:

- (a) Review at least annually the Company's internal system of audit and financial controls, internal audit procedures and results of such audits, and receive regular, generally quarterly, updates from management on such controls, procedures and audit activities.
- (b) Prior to the annual audit by the external auditor, consider the scope and general extent of the external auditor's review, including its engagement letter. Review with management the external auditor's audit plan and intended template for financial statements.
- (c) Ensure the external auditor has full, unrestricted access to required information and has the cooperation of management.
- (d) Review with the external auditor, in advance of the audit, the audit process and standards, as well as regulatory or Company-initiated changes in accounting practices and policies and the financial impact thereof, and selection or application of appropriate accounting principles.

- (e) Review with the external auditor and, if necessary, legal counsel, any litigation, claim or contingency, including tax assessments, or significant judgments made by management that could have a material effect upon the financial position of the Company and the manner in which these matters are being disclosed in the financial statements. Review the appropriateness and disclosure of any off-balance sheet matters. Review disclosure of any related-party transactions.
- (f) Receive and review with the external auditor, the external auditor's audit report and the audited financial statements. Make recommendations to the Board respecting approval of the audited financial statements.
- (g) Review annually the integrity of the Company's internal and external financial reporting and accounting principles, including the clarity, completeness and accuracy of financial disclosure and the degree of conservatism or aggressiveness of the accounting policies and estimates, performance of Internal Audit Management, any significant disagreements or difficulties in obtaining information, adequacy of internal controls over financial reporting and the degree of compliance of the Company with prior recommendations of the external auditor. The Audit Committee shall direct management to implement such changes as the Audit Committee considers appropriate, subject to any required approvals of the Board arising out of the review.
- (h) Meet at least annually with the external auditor, independent of management, consider external auditor's judgments about the quality and appropriateness of the Company's accounting principles and practices, and report to the Board on such meetings.

#### *Interim Financial Statements*

Pursuant to its mandate, the Board shall generally approve the Company's annual and interim financial statements. Notwithstanding the foregoing, on an exceptions basis the Board may from time to time delegate to the Audit Committee the power to approve the Company's interim financial statements.

The Audit Committee shall:

- (a) Review on an annual basis the Company's practice with respect to review of interim financial statements by the external auditor.
- (b) Review the interim financial statements with the external auditor if the external auditor conducts a review of the interim financial statements.
- (c) Conduct all such reviews and discussions with the external auditor and management as the Audit Committee deems appropriate.
- (d) Review and, if such authority has been delegated to the Audit Committee by the Board, approve the interim financial statements.
- (e) If authority to approve the interim financial statements has not been delegated to the Audit Committee, make appropriate recommendation to the Board respecting approval of the interim financial statements.

#### *Code of Ethics*

The Audit Committee has primary responsibility for overseeing the application of, and compliance with, the Company's Code of Business Conduct and Ethics (the "**Code**"). The Audit Committee shall review at least annually:

- (a) the Code,
- (b) management's approach to business ethics and corporate conduct; and
- (c) programs used by management to monitor compliance with the Code.

## **COMPLAINTS UNDER WHISTLEBLOWER POLICY**

To ensure that the Company has adequate procedures in place for the confidential and anonymous (where permitted by law) receipt, retention, and treatment of complaints received by the Company regarding (a) accounting, internal accounting controls, or auditing matters, and (b) compliance with the Code and all applicable government laws, rules and regulations, the Committee has recommended and the Board has adopted a Company Whistleblower Policy. All such complaints shall be dealt with under the terms of that Policy.

### **Composition of the Audit Committee**

As at December 31, 2013 and the date of this AIF, the members of the Audit Committee are Terry Krepiakevich, George Brack and Michael Winn, with Mr. Krepiakevich serving as the Chair of the Audit Committee. All of these members are financially literate and independent for the purposes of National Instrument 52-110 ("**NI 52-110**").

Mr. Krepiakevich 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.

Mr. Krepiakevich 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. Krepiakevich 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. Krepiakevich 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. Krepiakevich was a senior officer in a number of private and public issuers. He is a Canadian qualified Chartered 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. Brack is a member of the Board of Directors of several publicly-listed companies since January 2009. Previously, Mr. Brack was Managing Director and Industry Head – Mining of Scotia Capital Inc. from December 2006 to January 2009. Prior to joining Scotia Capital, he held the position of President of Macquarie North America Ltd., an investment banking firm specializing in mergers and acquisitions as well as other advisory functions for North American resource companies. Mr. Brack has also held positions with Placer Dome as Vice President Corporate Development and with CIBC Wood Gundy where he was Vice President of the Investment Banking Group, and worked in Rio Algom's corporate development department. Mr. Brack holds an MBA from York University, a BAsC in Geological Engineering from the University of Toronto and the CFA designation. Mr. Brack is financially literate, possessing extensive experience in corporate finance and investment banking, particularly with respect to the mining sector.

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.

### **Reliance on Certain Exemptions**

At no time since the commencement of the Corporation's most recently completed financial year has the Corporation relied on the exemption in Section 2.4 of NI 52-110 (De Minimis Non-audit Services), Section 3.2 of NI 52-110 (Initial Public Offerings), Section 3.3(2) of NI 52-110 (Controlled Companies),



Section 3.4 of NI 52-110 (Events Outside Control of Member), Section 3.5 of NI 52-110 (Death, Disability or Resignation of Audit Committee Member), Section 3.6 of NI 52-110 (Temporary Exemption for Limited and Exceptional Circumstances) or Section 3.8 of NI 52-110 (Acquisition of Financial Literacy), or an exemption from NI 52-110, in whole or in part, granted under Part 8 of NI 52-110 (Exemptions).

### **Audit Committee Oversight**

At no time since the commencement of the Corporation's most recently completed financial year was a recommendation of the Committee to nominate or compensate an external auditor not adopted by the board of directors.

### **Pre-Approval Policies and Procedures**

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 the Corporation's independent auditors, PricewaterhouseCoopers LLP, Chartered Accountants. Any services provided by PricewaterhouseCoopers LLP 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. No fees paid to PricewaterhouseCoopers LLP in either of the fiscal years ended December 31, 2013 or 2012 were approved pursuant to the de minimus exception.

### **External Auditor Service Fees (By Category)**

PricewaterhouseCoopers LLP, Chartered Accountants, serve as the independent auditors for the Corporation and have acted as the Corporation's independent auditor for the years ended December 31, 2013 and 2012. The chart below sets forth the total amount billed the Corporation by PricewaterhouseCoopers LLP 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)**

<b>Financial Period</b>	<b>Audit Fees</b>	<b>Audit Related Fees</b>	<b>Tax Fees</b>	<b>All Other Fees</b>
Year ended December 31, 2013	\$343,400	\$84,200	\$9,500	\$Nil
Year ended December 31, 2012	\$395,000	\$81,000	\$Nil	\$Nil

"Audit Fees" are the aggregate fees billed by PricewaterhouseCoopers LLP 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 PricewaterhouseCoopers LLP 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, 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 PricewaterhouseCoopers LLP for tax compliance, tax advice on actual or contemplated transactions.

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

## **LEGAL PROCEEDINGS AND REGULATORY ACTIONS**

The Corporation is not a party to any legal proceedings involving a claim for damages in excess of ten percent of the Corporation's current assets, nor is a party to any regulatory actions, and is not aware of any such proceedings or actions known to be contemplated.

## **INTEREST OF MANAGEMENT AND OTHERS IN MATERIAL TRANSACTIONS**

The directors, executive officers and principal shareholders of the Corporation or any associate or affiliate of the foregoing have had no material interest, direct or indirect, in any transactions in which the Corporation has participated within the three most recently completed financial periods prior to the date of this AIF or in the current financial year, and do not have any material interest in any proposed transaction, which has materially affected or is reasonably expected to materially affect the Corporation, except as set out elsewhere in this AIF or as follows:

Certain directors and/or officers of the Corporation have subscribed for common shares of the Corporation pursuant to the public and private placement financings of the Corporation.

During the year ended December 31, 2012, the Corporation rented certain office space under an agreement with Access Field Services, a company owned by certain individuals who were at certain times executive officers of the Corporation and its subsidiary Access. On May 31, 2012, the Corporation purchased the rental office space from Access Field Services for its appraised fair market value of \$1,205,000. During period from January 1, 2012 to May 31, 2012, the Corporation incurred rent expenses of \$57,127.

## **TRANSFER AGENTS AND REGISTRARS**

The registrar and transfer agent for the common shares of the Corporation in British Columbia and Ontario is Computershare Investor Services Inc., Vancouver, British Columbia.

## **MATERIAL CONTRACTS**

The only material contracts entered into by the Corporation within the year ended December 31, 2013 or before such time that are still in effect, other than in the ordinary course of business, are as follows:

1. The Silver Wheaton silver streaming interest agreement, as amended, described under "General Development of the Business – Three Year History and Significant Acquisitions" in this AIF.

The agreement and subsequent amendments are available on the SEDAR website at [www.sedar.com](http://www.sedar.com) under the Corporation's profile.

## **INTERESTS OF EXPERTS**

### **Names of Experts**

The following are the named persons responsible for the preparation of the EKHSD PEA (see "Description of Business – Eastern Keno Hill Silver District – EKHSD PEA"), and at the date of that report were "qualified persons", and where indicated were independent, as then defined in NI 43-101:

#### Independent

Gilles Arseneau, Ph.D., P.Geo., of SRK Consulting (Canada) Inc.  
Ken Reipas, P.Eng., of SRK Consulting (Canada) Inc.  
Bruce Murphy, FSAIMM, of SRK Consulting (Canada) Inc.  
Adrian Dance, P.Eng., of SRK Consulting (Canada) Inc.  
Kelly Sexsmith, P.Geo., of SRK Consulting (Canada) Inc.  
Stephen Taylor, P.Eng., of SRK Consulting (Canada) Inc.  
David Farrow, Pr.Sci.Nat,P.Geo., of GeoStrat Consulting Services Inc.  
James Richard Trimble, P.Eng., of Tetra Tech EBA (formerly EBA Engineering Consultants Ltd.)

### Non-Independent

Alan McOnie, FAusIMM, Vice President, Exploration, Alexco  
Laura Battison, P.Geo., Geologist, Alexco (no longer employed with Alexco)

The named person responsible for the preparation of the Onek Technical Report and the Bermingham Technical Report (see "Description of Business – Other Keno Hill District Properties" with respect to the "Onek Property" and the "Bermingham Property") is Gilles Arseneau, Ph.D., P.Geo., of SRK Consulting (Canada) Inc., who at the date of each report was both independent and a "qualified person" as then defined in NI 43-101.

The following are the named persons responsible for the preparation of the Elsa Tailings Technical Report (see "Description of Business – Mineral Exploration and Development – Elsa Tailings Property"), and at the date of that report were both independent and "qualified persons" as then defined in NI 43-101:

G. David Keller, P.Geo. (formerly of SRK Consulting (Canada) Inc.)  
Lars Weiershäuser, Ph.D, P.Geo., of SRK Consulting (Canada) Inc.

The Corporation's current Vice President, Exploration is, and has been through its most recently completed financial year, Alan McOnie, FAusIMM, a "qualified person" as defined in NI 43-101. Through its most recently completed financial year and until October 2013, the Corporation's Bellekeno Mine Manager was Scott Smith, P. Eng., and from October 2013 and continuing through the date hereof Scott Smith has acted as a consulting engineer to the Corporation. Scott Smith is a "qualified person" as defined in NI 43-101. Except where specifically indicated otherwise, during its most recently completed financial year and through the date hereof, disclosures by the Corporation of scientific and technical information regarding exploration projects on Alexco's mineral properties have been approved by Alan McOnie, while those regarding mine development and operations have been approved by Scott Smith.

The audited financial statements of the Corporation have been subject to audit by PricewaterhouseCoopers LLP, Chartered Accountants.

### **Interests of Experts**

Based on information provided by the other experts named above, other than with respect to Alan McOnie, Laura Battison and Scott Smith as described below, none of the experts named under "Names of Experts", when or after they prepared the statement, report or valuation, has received any registered or beneficial interests, direct or indirect, in any securities or other property of the Corporation or of one of the Corporation's associates or affiliates (based on information provided to the Corporation by the experts) or is or is expected to be elected, appointed or employed as a director, officer or employee of the Corporation or of any associate or affiliate of the Corporation.

At the time of the preparation of the EKHSD PEA, Alan McOnie was the Corporation's Vice President, Exploration, and Laura Battison was a Geologist for the Corporation, and accordingly neither was considered independent as defined in NI 43-101. Alan McOnie is currently an executive officer and Scott Smith was formerly the Bellekeno Mine Manager and is currently a consulting engineer of the Corporation, as described above. All of Alan McOnie, Laura Battison and Scott Smith have been granted stock options of the Corporation through the course of their respective employments; however, the individual interests held by each of them throughout their respective employment terms at all times represented less than one percent of the issued and outstanding common shares of the Corporation.

PricewaterhouseCoopers LLP, Chartered Accountants, as auditors of the Corporation, report that they are independent with respect to the Corporation within the meaning of the Rules of Professional Conduct of the Institute of Chartered Accountants of British Columbia, Canada. PricewaterhouseCoopers LLP is registered with the Public Company Accounting Oversight Board.

### **ADDITIONAL INFORMATION**

Additional information relating to the Corporation may be found on SEDAR at [www.sedar.com](http://www.sedar.com), as well as at the Corporation's web site at [www.alexcoresource.com](http://www.alexcoresource.com).

Additional information, including directors' and officers' remuneration and indebtedness, principal holders of the Corporation's securities, and securities authorized for issuance under equity compensation plans, where applicable, is contained in the Corporation's information circular for its most recent annual general meeting of securityholders that involved the election of directors.

Additional financial information is provided in the Corporation's consolidated financial statements and management's discussion and analysis for its most recently completed financial period, being the year ended December 31, 2013.