

# BuchansResources

## **MANAGEMENT DISCUSSION AND ANALYSIS**

**For the year ended December 31, 2018**

Dated April 29, 2019

(Form 51-102F1)

**BUCHANS RESOURCES LIMITED**  
**Management Discussion and Analysis**  
**For the year ended December 31, 2018**

*Date: April 29, 2019*

**GENERAL**

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The following management discussion and analysis (“MD&A”) of financial condition and results of operations of Buchans Resources Limited (“Buchans” or the “Company”), should be read in conjunction with the audited consolidated financial statements and the notes thereto for the year ended December 31, 2018, which have been prepared in accordance with International Financial Reporting Standards (“IFRS”). All dollar amounts are stated in Canadian dollars, unless otherwise noted.

**COMPANY OVERVIEW**

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Buchans Resources Limited was incorporated on May 8, 2015 under the laws of the Province of Ontario, Canada. The Company’s head office is located at 55 University Ave, Suite 1805, Toronto, Ontario, M5J 2H7.

Buchans has interests in zinc-lead-silver properties located in Canada, Ireland and the United Kingdom; gold properties in Newfoundland and Labrador; nickel-copper-cobalt properties in Labrador; a battery metal manganese project in New Brunswick; and, indirectly through its 22% shareholding in Xtierra Inc. (TSXV: “XAG”), in base metal and silver projects in Mexico.

*Newfoundland – Base Metals*

Buchans holds an extensive mineral land package in the Buchans district of central Newfoundland with interests in four undeveloped base metal deposits, including the large, lower grade, Lundberg stockwork sulphide deposit, as well as three smaller, higher grade, volcanogenic massive sulphide (“VMS”) “satellite” deposits, each with excellent exploration potential.

*Lundberg Deposit – New Mineral Resource Estimate*

On March 1, 2019 Buchans announced a new updated pit-constrained Mineral Resource Estimate for the Lundberg base metal deposit, located at the former Lucky Strike mine site, and a NI 43-101 Technical Report was filed on April 15, 2019. The new 2019 Mineral Resource Estimate, containing more than 1.25 billion pounds Zinc Equivalent, with 98.7% of the Mineral Resources in the Indicated category, demonstrates a significantly more robust project which provides compelling rationale to undertake a new updated Preliminary Economic Assessment, or a Preliminary Feasibility Study, to assess Lundberg as a stand-alone open-pit mineral resource development with a low strip ratio, optimally situated on a brownfields site with excellent infrastructure.

*8,000 metres of drilling in 38 holes - VMS exploration potential*

Buchans is confident that its Newfoundland mineral properties hold potential for discovery of new VMS deposits comparable to historically mined orebodies in the Buchans camp, where Asarco mined more than 16.2 million tonnes from five separate deposits, with a combined average grade of 14.51% Zn, 7.65% Pb, 1.33% Cu, 126 g/t Ag, and 1.37g/t Au, before mine closure in 1984.

In 2018, a total of 8,000 metres of drilling was completed in 38 holes exploring the Buchans and Tulks North base metal properties in central Newfoundland. Drilling in 2018 in four target areas within a radius of 3.5 kilometres of Lundberg/Lucky Strike returned favourable results warranting further exploration for additional higher-grade resources that could potentially complement Lundberg’s development or be developed as stand-alone mining projects.

At Tulks North, located 20 km south of Lundberg, drilling returned encouraging results highlighted by the intersection of semi-massive to massive sulphide mineralized intercepts down plunge of the Bobbys and Daniels deposits, both of which have mineral resource estimates supported by NI 43-101 technical reports, that indicate the zones remain open at depth.

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*Exploring for gold in Newfoundland and Labrador and nickel-copper-cobalt in Labrador*

Exploration programs were also undertaken on several of the Company's other base metal and gold properties in Newfoundland and Labrador in 2018, including the Lake Douglas gold property in Newfoundland, the Tasiuyak gold property in Labrador, and the South Voisey's Bay nickel-copper-cobalt property in Labrador.

*Zinc exploration in Ireland - Joint Ventures with Boliden*

In Ireland, Buchans is continuing exploration for zinc, both in joint venture with Boliden Tara Mines near Navan and on its own licences at Moate. Buchans also entered into a new exploration agreement with Boliden Tara Mines on six Prospecting Licences in Galway.

Buchans is participating at 20% in a joint venture with Boliden Tara Mines at 80% on Licence 1440R, which lies immediately adjacent to Boliden's large 130 million tonnes Tara zinc-lead mine at Navan. Buchans is also participating in a joint venture with Boliden Tara on Licence 3373, contiguous to the west with Licence 1440R, where Buchans can earn up to a 75% interest.

During 2018, Boliden Tara drilled one-hole of 1,225m on Licence 1440R, two kilometres to the north of the existing small Tatestown-Scallanstown deposit, and also completed an updated internal resource estimate for the Tatestown-Scallanstown deposit. On Licence 3373 Buchans completed two drill holes for a total of 636 metres. A follow-up drill hole is planned for spring 2019 to test one of four identified target areas.

*Battery Grade Manganese in New Brunswick*

In New Brunswick, Canadian Manganese Corporation, a wholly owned subsidiary of Buchans Resources, holds the Woodstock manganese property containing the Plymouth manganese-iron deposit that hosts a NI 43-101 Inferred Resource and on which a positive preliminary economic assessment ("PEA") technical report was completed in 2014.

Metallurgical development programs for Woodstock have focused on the production of high-grade electrolytic manganese metal and the intermediate production of purified manganese sulphate solution as an interim step, enabling the add-on production of manganese chemicals, manganese catalyst, battery grade manganese dioxide and high-purity manganese metal for electronics. Electrowinning tests consistently produced electrolytic manganese metal with a metallic manganese content of greater than 99.99% and a total manganese content ranging from 99.70% to 99.76% Mn.

Advancements in electric vehicle manufacturing are transforming the entire global automobile industry driving increased battery demand and NMC (nickel-manganese-cobalt) batteries are becoming the rechargeable battery of choice for next-generation automotive and industrial uses. Manganese is a key component in the formulations of the cathode material used in high-performance lithium-ion batteries and in utility bulk energy storage facilities, which are expected to create strong demand for high-purity manganese products.

*Dalradian Resources Inc.*

In June 2018, Dalradian Resources Inc. ("Dalradian") entered into an agreement with Orion Mine Finance whereby Orion acquired all the shares of Dalradian by way of a plan of arrangement for C\$1.47 per share. Buchans' remaining 2,372,666 shares of Dalradian were acquired by Orion for \$3,487,819 and a gain on disposal of \$344,037 was recorded. The arrangement with Orion deprived Dalradian shareholders of exposure to the Curraghinalt gold project in Ireland, as Dalradian continues its exploration and development activities, and cashed out shareholders at a price which Buchans believed did not properly reflect the underlying value and potential of the Curraghinalt gold deposit. The underlying value and potential of the Curraghinalt gold deposit were among the main reasons Minco recommended the scheme of arrangement whereby Minco disposed of its

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2% net smelter royalty on the Curraghinalt gold deposit to Dalradian and whereby Dalradian acquired all of the shares of Minco plc in 2017.

**FINANCIAL RESULTS**

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Buchans recorded no revenue in the years ended December 31, 2018 or December 31, 2017. For the year ended December 31, 2018, the Company recorded a loss of \$42,303, compared to a loss of \$5,010,599 for the year ended December 31, 2017.

During the year ended December 31, 2018, Buchans invested \$2,927,034 (2017 - \$1,013,209) on exploration of its mineral properties, of which the largest amounts were expended on the zinc-lead projects in central Newfoundland.

**LISTING OF BUCHANS SHARES**

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When shares of Buchans were distributed to Minco shareholders in August 2017 as part of the scheme of arrangement whereby Dalradian Resources Inc. acquired all of the shares of Minco plc, Buchans indicated that, subject to market and trading conditions and obtaining any necessary approvals, it was intended that Buchans would either make an application for its shares to be listed on a Canadian stock exchange or complete another transaction whereby Buchans would acquire or be acquired by a company listed on a Canadian stock exchange, as soon as reasonably practicable.

Unfortunately, throughout 2018 and to date market conditions in Canada for junior exploration companies have not been conducive to an initial public offering of the shares of a new listed company and, based on advice from the Company's brokers and financial advisors, it has been determined to postpone the planned listing of the Company's shares pending more favourable market conditions. Nevertheless, it is still intended to list the shares of Buchans at an appropriate time, subject to market conditions.

In the meantime, Buchans continues in good standing as a Reporting Issuer in the Provinces of British Columbia, Alberta, Nova Scotia and Newfoundland and Labrador, and in compliance with the requirements of the Securities Acts and Securities Regulations in Canada. All public filings of the Company may be inspected under the Company's profile on SEDAR at [www.sedar.com](http://www.sedar.com).

Shareholders who wish to transfer their shares to another party may do so by submitting appropriate transfer documentation in the usual manner to Computershare Investor Services in Vancouver or Toronto.

**QUALIFIED PERSON**

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*Paul Moore, P. Geo. is Buchans' Non-Independent Qualified Person for the purposes of National Instrument 43-101, Standards of Disclosure for Mineral Projects and has approved the technical disclosures on mineral projects in Canada in this MD&A. Historic mine production figures are derived from historic archived documents of the former operator, Asarco, and have not been independently verified.*

*Information on base metal properties in Ireland is derived from the Company's communication with Boliden Tara Mines Limited, Operator of the Tatetown-Scallanstown (Licence 1440R) and Kells (Licence 3373) joint ventures.*

**CENTRAL NEWFOUNDLAND BASE METAL PROJECTS**

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In 2018, Buchans completed an 8,000-metre drilling program within its Buchans and Tulks North Properties in central Newfoundland.

**Lundberg Deposit -Technical Report**

On April 15, 2019 – Buchans filed a National Instrument 43-101 Technical Report regarding the updated pit-constrained Mineral Resource Estimate for its Lundberg base metal deposit.

The Technical Report entitled “*NI 43-101 Technical Report and Mineral Resource Estimate on the Lundberg Deposit, Buchans Area, Newfoundland and Labrador, Canada*”, and dated April 15, 2019, was prepared by: Michael Cullen, P. Geo., Matthew Harrington, P. Geo., and Shaun O’Connor, P. Geo. of Mercator Geological Services Limited (“Mercator”), Timothy McKeen, P. Eng., of Stantec Consulting Ltd. (Stantec), and Douglas Roy, P. Eng., of MineTech International Limited (MineTech), each of whom is an independent “Qualified Person” as defined under National Instrument 43-101 (NI 43-101), and Buchans employees Paul Moore, P. Geo., Vice President of Exploration and David Butler, P. Geo, Exploration Manager, who are non-independent “Qualified Persons” as defined under NI 43-101 and as allowed under section 5.3(3) of NI 43-101. The Technical Report is filed under the Company’s profile on SEDAR at [www.sedar.com](http://www.sedar.com).

*The information in the following sections of this MD&A has been extracted from the Technical Report. For readers to understand the technical information in this MD&A they should read the Technical Report in its entirety, including all qualifications, assumptions and exclusions therein.*

The Technical Report covers the results of a new and updated pit-constrained Mineral Resource Estimate prepared by Mercator for Buchans’ Lundberg base metal deposit located at the former Lucky Strike mine site, adjacent to the town of Buchans, in central Newfoundland, Newfoundland and Labrador, Canada.

The Lundberg deposit surrounds the former Lucky Strike mine site, where Asarco operated a near-surface underground and glory hole mining operation until mine closure in 1984. The Lundberg deposit is mainly comprised of stockwork mineralization surrounding and lying below the former Lucky Strike orebody but includes some massive sulphide mineralization remaining unmined in the former operations.

The current Mineral Resource Estimate, effective February 28, 2019, includes In-pit Indicated Mineral Resources of 16,790,000 tonnes grading 1.53% Zn, 0.64% Pb, 0.42% Cu, 5.69 g/t Ag and 0.07 g/t Au (3.38% Zn Eq) [Zinc Equivalent see Note 5 to Table below] and In-pit Inferred Mineral Resources of 380,000 tonnes grading 2.03% Zn, 1.01% Pb, 0.36% Cu, 22.35 g/t Ag and 0.31 g/t Au (4.46% Zn Eq), reported at a cut-off grade of US\$20/t NSR within an optimized pit shell, and is considered to reflect reasonable prospects for economic extraction in the foreseeable future using conventional open-pit mining methods.

The Mineral Resource Estimate was prepared by incorporating 21,203 metres of drilling by Buchans in 144 surface drill holes, including 91 holes totaling 13,145 metres drilled since the historic 2011 PEA, and including 17 holes totaling 2,205 metres drilled in 2018. In addition, the Mineral Resource Estimate incorporated information collected through systematic relogging of approximately 28,000 metres of core from 280 archived surface and underground drill holes from the former Lucky Strike mine. In total, the Lundberg deposit is defined by 7,972 core samples from 263 diamond drill holes within the limits of the current Mineral Resource Estimate.

The Lundberg 2018 drilling program included drilling 2,200 metres in 17 holes and was designed to upgrade portions of the previous resource from the Inferred to Indicated categories, as well as further delineate the limits of the Lundberg deposit. The drilling at Lundberg enabled estimation of a new In-Pit constrained resource estimate.

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The 2019 Mineral Resource Estimate was prepared by Mercator Geological Services Limited. The pit shell was developed and optimized by MineTech International Limited. Projected metal recoveries are based on the previous Central Milling Facility Assessment by Thibault & Associates Ltd and the net smelter return (“NSR”) calculator as prepared by Stantec Consulting.

The 2019 Mineral Resource Estimate is constrained by an optimized pit shell that incorporates NSR cut-offs reflecting metal price assumptions of US \$1.20/lb Zn, \$1.00/lb Pb, \$3.00/lb Cu, \$1,250/oz Au, and \$17/oz Ag and costs and recovery parameters determined through continued assessment of the project, comprising multiple, past studies such as the positive Preliminary Economic Assessment completed by Tetra Tech in August of 2011 and the Mineral Resource Estimate completed by Mercator in February 2013, as well as several metallurgical investigations, including bench-scale studies completed by Thibault & Associates Inc. in 2017, and additional definition drilling undertaken by the Company in 2018.

**Lundberg Deposit In-Pit Mineral Resource Estimate – Effective February 28, 2019**

NSR Cut-off (USD/t)	Category	Tonnes	Zn %	Pb %	Cu %	Ag g/t	Au g/t	Zn Eq. %	NSR (USD/t)	Strip Ratio
20	Indicated	16,790,000	1.53	0.64	0.42	5.69	0.07	3.38	54.98	2.9
	Inferred	380,000	2.03	1.01	0.36	22.35	0.31	4.46	72.95	

1. Mineral Resource tonnages have been rounded to the nearest 10,000. Totals may vary due to rounding.
2. Price assumptions used were US \$1.20/lb Zn, \$1.00/lb Pb, \$3.00/lb Cu, \$1,250/oz Au, and \$17/oz Ag.
3. Metallurgical recoveries to concentrates are based on the Central Milling Facility Assessment (Thibault & Associates Ltd., 2017). Metal recoveries are 83.0% Cu, 13.3% Au, and 7.84% Ag in the copper concentrate, 84.3% Pb, 10.5% Au, and 50.3% Ag in the lead concentrate, and 87.2% Zn, 8.28% Au, and 14.8% Ag in the zinc concentrate.
4. Net Smelter Return (NSR) USD/t values were determined by calculating the value of each Mineral Resource model block using an NSR calculator prepared by Stantec Consulting. The NSR calculator uses the stated metal pricing, metallurgical recoveries to concentrates, concentrate payable factors and current shipping and smelting terms for similar concentrates.
5. Zinc Equivalent metal grade (Zn Eq. %) was calculated as follows using metal pricing, metallurgical recoveries to concentrates, and concentrate payable factors as applied in the NSR calculator:  $Zn\ Eq.\ \% = Zn\ \% + ((Cu\ \% \times 22.046 \times 0.8020 \times 3) + (Pb\ \% \times 22.046 \times 0.8010 \times 1) + (Au\ g/t / 31.10348 \times 0.2198 \times 1250) + (Ag\ g/t / 31.10348 \times 0.6514 \times 17)) / (1.20 \times 22.046 \times 0.7412)$ .
6. The Mineral Resource pit shell was developed and optimized by MineTech International Limited. Optimization parameters include: mining at US \$3 per tonne, processing at US \$15 per tonne, and G&A at US \$2 per tonne (total US \$20).
7. A cut-off value of \$20 USD/t NSR within the optimized pit shell was used to estimate Mineral Resources.
8. Mineral Resources were interpolated using Inverse Distance Squared methods applied to 1.5 metre downhole assay composites.
9. Results of an interpolated Inverse Distance Squared bulk density model ( $g/cm^3$ ) were applied.
10. Mineral Resources are considered to reflect reasonable prospects for economic extraction in the foreseeable future using conventional open pit mining methods.
11. Mineral Resources do not have demonstrated economic viability.
12. This estimate of Mineral Resources may be materially affected by environmental, permitting, legal title, taxation, socio-political, marketing, or other relevant issues.

In summary, the Lundberg deposit is now estimated to host In-pit Indicated Mineral Resources containing 1.25 billion pounds Zinc Equivalent as well as In-pit Inferred Mineral Resources containing 0.037 billion pounds Zinc Equivalent using an NSR cut-off at US\$20 per tonne. These resources are contained within an optimized model pit shell measuring 860 metres by 650 metres and extends to a maximum depth of 240 metres. The In-Pit constrained resource has a strip ratio of 2.9 of which approximately 98.7% of the resources are assigned to the Indicated category resources.

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While the 2019 Mineral Resource Estimate excludes significant volumes of mineralization within the Lundberg deposit from classification as Mineral Resources, it should be noted that much of the excluded volume lies beneath the bottom of the current pit shell and has potential to be included in future optimized pit shells subject to changes in metal prices or other parameters defined for future optimization and mineral resource estimation.

The new 2019 Mineral Resource Estimate updated the Lundberg deposit to a more robust, pit-constrained resource, that is exemplified by its large inventory of Indicated category resources and represents a significant improvement over previous resource estimates. Through completion of a large amount of additional infill core drilling, extensive relogging of archived drill core, database upgrading and detailed deposit model studies in the intervening years, the 2019 Mineral Resource Estimate reflects a 97.8% conversion of 2011 PEA Ultimate Pit Design Inferred Mineral Resources to Indicated Mineral Resources at comparable grades and a slightly lower strip ratio.

**Recommendations from Technical Report**

Based on work carried out for the 2019 Mineral Resource estimation project, Mercator is of the opinion that the Lundberg deposit has been sufficiently delineated by drilling to support Pre-feasibility (PFS) or Feasibility level studies, and that additional infill resource delineation drilling is not required for this purpose.

Mercator's primary recommendation arising from the current Mineral Resource Estimate program is that an updated assessment of the Lundberg deposit's economic potential be completed as the next phase of project evaluation. This could take the form of a new Preliminary Economic Assessment or an internal economic study leading to a decision to proceed directly to a PFS assessment of Lundberg Deposit economics.

Additional metallurgical testing would be required to support a future Preliminary Economic Assessment or Pre-Feasibility Study Assessment. Pre-concentration using dense media separation or ore sorting will improve mill feed grades, reduce the size of the milling facility or reduce mill feed transportation requirements should an off-site milling facility be considered. Future economic studies are therefore recommended to determine any potential savings with pre-concentration versus metal loss from the upgrading process.

With favorable open circuit test results and simulation results, the sequential flotation flowsheet is expected to produce improved results compared to the bulk Cu/Pb flowsheet. Therefore, continued development of the sequential flotation flowsheet for the Lundberg and Engine House deposits is recommended to confirm the metallurgical performance.

**New Preliminary Economic Assessment Planned**

The new 2019 Mineral Resource Estimate demonstrates a significantly more robust project and, coupled with enhanced parameters determined by the Company's continued assessments, including updated costs, metallurgical and metal pricing parameters, and significantly improved prevailing currency exchange rates (compared to rates used by the 2011 PEA), could result in significantly improved outcomes in future economic analyses and provides compelling rationale to undertake a new updated PEA, or a Preliminary Feasibility Study, to assess the Lundberg project as a stand-alone open-pit mineral resource development.

Buchans believes re-evaluation of Lundberg using the higher confidence 2019 Mineral Resource Estimate, updated costs, metallurgical and metal pricing parameters, and significantly improved prevailing currency exchange rates (compared to rates used by the 2011 PEA), could result in significantly improved outcomes in future economic analyses of the project.

The 2011 PEA was undertaken during a period of prevailing high Canadian:US currency exchange rates (2011 PEA assumed one Canadian dollar valued at US\$ 0.988) and the Company feels that assessment of this factor at lower exchange rates indicative of long-term trends could, in combination with other updated parameters, positively influence future analysis of Lundberg deposit economic viability.

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The In-Pit-constrained Mineral Resource in the 2019 Mineral Resource Estimate (“MRE”) reflects an NSR US\$20 per tonne cut-off. A range of cut-off values were also assessed for sensitivity which illustrate that a high proportion of the contained metal is retained at higher cut-off thresholds (to \$50 US/t) and indicates that both lower grade - higher tonnage and higher grade - lower tonnage mining scenarios should be assessed in future economic studies. For example, using a 100% higher cut-off at US\$40NSR per tonne results in an Indicated Mineral Resource tonnage of 9.2 million tonnes at a Zinc Equivalent grade of 4.67%. At the even higher cut-off threshold of US\$50NSR, the 2019 Mineral Resource Estimate In-Pit Mineral Resource Indicated tonnage is estimated at 7 million tonnes at a Zinc Equivalent grade of 5.32%. Comparing these sensitivities in respect of their contained metal, the Indicated tonnage at the US\$30NSR threshold contains more than one billion pounds Zinc Equivalent. At the higher threshold of US\$50NSR, the Indicated tonnage contains more than 800 million pounds Zinc Equivalent.

The Lundberg deposit is favourably situated on a brownfields site with excellent infrastructure, including access by provincially maintained paved roads, power, water and other infrastructure. The Lundberg project is located in the Province of Newfoundland and Labrador, one of the top mining jurisdictions in Canada, and the Company has established a positive and cooperative relationship with the immediately adjacent, former mining town of Buchans.

**Geophysical Surveys Completed**

During 2018, in addition to 8,000 metres of drilling in 38 holes, Buchans also undertook property-wide, state-of-the-art, SkyTEM airborne geophysical surveys over its Buchans and Tulks North properties. The surveys included more than 1,000-line kilometres, providing coverage over the Company’s key exploration prospects, deposits, and historic mine sites.

The objective of the 2018 airborne geophysical surveys was to further enhance understanding of several key exploration target areas, as some target areas have not been surveyed with airborne geophysical surveys since the 1980’s.

The Company also completed borehole geophysical surveying over select target areas at both the Buchans and Tulks North properties, including surveying 7 holes at the Clementine, Sandfill and Middle Branch breccia sulphide prospects and 7 additional holes at the Daniels and Bobbys deposits within the Tulks North property.

These results of the airborne and borehole geophysical surveys are under review and will provide information to be considered for future targeting within the Buchans and Tulks North properties.

**CENTRAL NEWFOUNDLAND VMS Target Areas – Buchans Mining Camp**

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Buchans controls mineral rights covering 116 km<sup>2</sup> (11,600 hectares) considered prospective for VMS Zn-Pb-Cu-Ag-Au base metal deposits within the Buchans district of central Newfoundland.

Buchans' extensive land package includes several undeveloped deposits including the large, lower grade, Lundberg stockwork deposit located beneath the former Lucky Strike massive sulphide orebody, as well as several smaller "satellite deposits", composed of higher-grade, volcanogenic massive sulphide mineralization. The latter include the Company's Daniels and Bobbys deposits, each with excellent exploration potential and located within the Company's Tulks North property, 20 km south of Lundberg.

Buchans' exploration strategy in Newfoundland is to continue to build on its existing resource base with the aim of developing either a stand-alone open pit mine centred on the larger lower grade Lundberg stockwork deposit, or a number of smaller higher grade VMS deposits that could be developed simultaneously and processed in a central milling facility, similar to past-producing mines at Buchans or Duck Pond.

Buchans is optimistic that its Newfoundland mineral properties hold potential for discovery of new VMS deposits comparable to historically mined orebodies in the Buchans camp, where Asarco mined more than 16.2 million tonnes from five separate deposits, with a combined average grade of 14.51% Zn, 7.65% Pb, 1.33% Cu, 126 g/t Ag, and 1.37g/t Au, before mine closure in 1984. In 2018, a total of 8,000 metres of drilling was completed in 38 holes exploring the Buchans and Tulks North base metal properties in central Newfoundland.

Drilling in 2018 in four target areas within a radius of 3.5 kilometres of Lundberg/Lucky Strike returned favourable results warranting further exploration for additional higher-grade resources that could potentially complement Lundberg's development, or be developed as stand-alone mining projects.

Highlight results for these targets areas include:

- The Two Level (Lucky Strike) area, where hole H-18-3524 intersected **9.48% combined base metals** (Cu%+Pb%+Zn%; or "CBM") as 0.76% Cu, 3.15% Pb, 5.57% Zn, 90.5 g/t Ag and 0.37 g/t Au **over 1.8 metres**, including 1.0 metre assaying 14.83% CBM as 1.26% Cu, 4.87% Pb, 8.70% Zn, 133.2 g/t Ag and 0.47 g/t Au. (see Buchans news release dated November 19, 2018)

This hole was drilled near the end of the 2018 program and extends mineralization 70 m north of historic underground workings at the Lucky Strike (Two Level) deposit, immediately north of the current Lundberg resource. This intercept indicates the deposit extends northwards, where potential remains to identify additional higher grade mineralization similar in size and grade to the former Two Level orebody where Asarco is reported to have mined 300,000 tonnes averaging 0.50% Cu, 4.56% Pb, 8.02% Zn, 125 g/t Ag and 1.6 g/t Au as part of its Lucky Strike mining operation.

- The Sandfill prospect, where hole H-18-3513 intersected multiple sections of transported breccia mineralization, including: **7.0 m averaging 7.4% CBM** (including 1.0 m of 23.6% CBM), as well as a lower section of **3.10 m averaging 6.4% CBM** (including 1.0 m assaying 17.5% CBM). A subsequent hole, H-18-3525, drilled 170 m west of H-18-3513, returned a best assay of **0.30 m of 2.31% CBM** as 0.04% Cu, 0.34% Pb, 1.93% Zn, 75.8 g/t Ag and 0.242 g/t Au at a depth of 420 m. Borehole geophysical surveys have since been completed in both holes and results require further review prior to proposing additional drilling in this area. Buchans remains optimistic that this area, located 2.5 km northeast of Lundberg, holds potential for discovery of transported-breccia sulphide deposits comparable to several of the historically mined orebodies at Buchans, including the Rothermere and MacLean orebodies where together, Asarco mined more than 7 million tonnes of transported breccia ore with head grades exceeding 21% CBM before mine closure in 1984.

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- The Middle Branch prospect, where hole H-18-3522 was drilled to test this transported breccia sulphide prospect located 3.5 km northeast of the Lundberg deposit. This hole collared 25 m west of historic hole H-1910 that reported a historic 1.8 m intercept of 0.4% Cu, 3.1% Pb, 4.8% Zn, 48 g/t Ag & 0.7 g/t Au. Buchans' new hole intersected approximately 33 m of ore-horizon rocks starting 533 m down the hole, including a **0.30 m section assaying 0.07% Pb, 0.16% Zn, 162.80 g/t Ag and 0.054 g/t Au.**

The Company is currently reviewing results of its 2018 programs and intends to formulate plans for additional drilling and exploration activities in 2019 within its Buchans and Tulks North properties.

**Tulks North Targets (Daniels and Bobbys deposits)**

At Tulks North, located 20 km south of Lundberg, drilling returned encouraging results highlighted by the intersection of semi-massive to massive sulphide mineralized intercepts down plunge of the Bobbys and Daniels deposits, both of which have mineral resource estimates supported by NI 43-101 technical reports, that indicate the zones remain open at depth.

Highlights from this drilling are discussed below.

**Bobbys Deposit Drilling:**

At the Bobbys deposit, hole BP-18-41B intersected **0.85 m of 17.02% CBM** as 0.50% Cu, 0.02% Pb, 16.50% Zn, 28.4 g/t Ag and 0.306 g/t Au (see Buchans news release dated December 21, 2018). This mineralization remains open below 475 m depth, and is correlated with other historic high-grade intersections nearby, including **1.75 m assaying 29.09% CBM** as 3.25% Cu, 2.51% Pb, 23.33% Zn, 88.1 g/t Ag and 0.153 g/t Au (hole MOA-08-34) and two closely spaced zones in hole MOA-08-35 that intersected **14.1% CBM over 1.0 m** assaying 2.31% Cu, 2.70% Pb, 9.10% Zn, 53.8 g/t Ag and 0.049 g/t Au; and **20.34% CBM over 1.35 m** assaying 3.52% Cu, 3.09% Pb, 13.73% Zn, 72.8 g/t Ag and 0.100 g/t Au.

Based on drilling completed prior to 2018, the Bobbys deposit is estimated to host Indicated resources totaling 1,095,000 tonnes averaging 0.86% Cu, 0.44% Pb, 4.61% Zn, 16.56 g/t Ag and 0.20 g/t Au, as well as Inferred resources of 1,177,000 tonnes averaging 0.95% Cu, 0.27% Pb, 3.75% Zn, 10.95 g/t Ag and 0.06 g/t Au using a 1.1% copper equivalent cut-off [Technical report dated July 31, 2008 entitled "*Technical Report on the Bobbys Pond Cu-Zn Deposit, Newfoundland and Labrador, Canada*" by Hrayr Agnerian, M.Sc. (Applied), P.Geo. of Scott Wilson Roscoe Postle Associates Inc].

**Daniels Deposit Drilling:**

At the Daniels deposit, 2018 drilling extended mineralization below the known resource to vertical depths of 472 m. Highlights include hole DN-18-131 that intersected **8.80 m of pyritic massive sulphides averaging 1.96% CBM** as 0.23% Cu, 0.18% Pb, 1.55% Zn, 12.09 g/t Ag and 0.658 g/t Au. This lobe of massive sulphides remains open at depth, where potential remains for discovery of additional accumulations of higher grade massive sulphides.

Based on exploration completed prior to 2018, the Daniels deposit is estimated to host Indicated resources totaling 929,000 tonnes averaging 0.34% Cu, 2.50% Pb, 5.13% Zn 101.4 g/t Ag and 0.63 g/t Au as well as Inferred resources of 332,000 tonnes averaging 0.30% Cu, 2.13% Pb, 4.61% Zn, 85.86 g/t Ag and 0.53 g/t Au, at a 2% Zn cut-off [Technical report dated June 13, 2008 and entitled "*Revised Technical Report on the Daniels Pond Deposit and Property Holdings of Royal Roads Corp., Red Indian Lake Area, Newfoundland, Canada*" by Peter C, Webster, B.Sc., P.Geo., P. James F. Barr, B.Sc., and Rafael Cavalcanti de Albuquerque, B.Sc. of Mercator Geological Services Limited].

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**LAKE DOUGLAS GOLD, NEWFOUNDLAND**

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Buchans owns 100% interest in the 2,075-hectare Lake Douglas gold project in central Newfoundland. This property is located 40 km south-southeast of Buchans and 20 km southeast of the Company's Daniels and Bobbys deposits. Buchans' Lake Douglas property is located 15 km northeast along strike of Marathon Gold Corporation's Valentine Lake project that covers a 20-kilometre long system of gold bearing veins including four near-surface deposits with Measured and Indicated resources totaling 2.69 million ounces of gold at 1.85 g/t and Inferred resources totaling 1.53 million ounces of gold at 1.77 g/t as reported by Marathon Gold.

Since staking the property in 2016, Buchans has conducted preliminary reconnaissance work including a compilation of previous work from historic assessment files. This work confirms the presence of unexplored favourable hosts rocks on the Lake Douglas property that are akin to the rocks hosting gold mineralization on adjacent properties. Results from limited prospecting include one anomalous gold assay from quartz float assaying 913 ppb Au (0.9 g/t Au). In July 2018, Buchans completed soil geochemical surveys over a portion of the property covering favourable geology and structure. Results include detection of a 200 m long anomaly with values up to 137 pb Au and a second anomaly defined as a single line, 3-station anomaly with values up to 317 pb Au.

Given these positive results, the Company is considering additional work for this project in 2019.

**TASIUYAK GOLD PROPERTY, LABRADOR**

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In July 2018, Buchans undertook a limited prospecting and sampling program on its Tasiuyak gold property in Labrador. This 100% Buchans-owned property, located 10 km south of Vale's Voisey's Bay nickel-copper-cobalt mine, includes mineral rights to 11.5 km<sup>2</sup> covering a historic gold prospect discovered by previous explorers, while exploring for nickel during the Voisey's Bay exploration rush in the mid-1990s.

The prospect, known as the VBE2 gold prospect, consists of a 90 m long bedrock exposure of sulphide-rich iron formation and has returned historic sampling results that include chip samples assaying up to 18.9 grams per tonne gold over 1 metre, as well as drilled intercepts over a 275 metre strike that include 5.5 g/t Au over 2.1 m, 4.2 g/t Au over 3.0 m, and 4.1 g/t over 2.1 m.

Bedrock sampling undertaken by Buchans at the VBE-2 gold prospect in 2018 returned positive results from the main outcrop exposure and along strike in both strike directions. Sawn bedrock channel samples collected from the main exposure returned assays averaging **8.51 g/t Au & 0.93 g/t Ag over 4.8 m, including 31.91 g/t Au over 0.85 m, as well as 15.83 g/t Au over 0.65 m**. These results exceed historic surface sample assays derived from chip sampling of the showing in the 1990's.

In addition, the VBE-2 prospect's favourable host paragneiss horizon has now been traced over a 3-kilometre strike where limited prospecting has returned anomalous assays, including sawn channel sample assays of up to 0.69 g/t Au over 0.50 m located 2 km south along strike of the main bedrock exposure.

Buchans believes this mineralization may be analogous to mineralisation at the former Homestake mine in South Dakota and believes the property represents an excellent exploration opportunity for discovery of new gold deposits in a frontier area. As such, the Company is considering additional work for this project in 2019.

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**LABRADOR NICKEL-COPPER-COBALT PROPERTIES**

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Since 2016, Buchans has opportunistically staked several properties in Labrador considered prospective for Voisey's Bay-style nickel-copper-cobalt deposits, including 36 claims (9 km<sup>2</sup>) covering prospective troctolitic gabbros of the Pants Lake Intrusive Suite at South Voisey's Bay, and 5 claims (1.25 km<sup>2</sup>) covering mineralized troctolite at Voisey's Bay itself.

**South Voisey's Bay:**

The South Voisey's Bay property is located 80 km south of Vale's Voisey's Bay mine and covers mineralized troctolitic gabbros comparable in age and composition to rocks hosting the Voisey's Bay mine.

Previous explorers identified several showings and prospects within Buchans' property, including drilled intercepts of **1.1 m of 11.9% Ni, 9.6% Cu, and 0.43% Co, 0.65 m of 1.93% Ni, 1.07% Cu and 0.26% Co, and 15.7 m averaging 1.13% Ni, 0.78% Cu, 0.20% Co** drilled in the late 1990s.

Since acquiring this 9 km<sup>2</sup> property, Buchans has initiated a compilation of past work on the property, largely focused on assessing previous geophysical surveys within Buchans' claims and the surrounding area. This recently completed compilation was led by a leading consultant geophysicist. Results of the compilation indicate previous geophysical surveys detected geophysical anomalies warranting further follow-up as potential targets for buried Voisey's Bay style magmatic sulphide deposits.

Buchans South Voisey's Bay property is surrounded by a much larger, 292 km<sup>2</sup> property held by Fjordland Exploration Inc. under a joint venture with Commander Resources Ltd. The Fjordland-Commander property is currently subject to a strategic partnership agreement with an affiliate of privately-owned High Power Exploration Inc. Through this strategic partnership, HPX is a 29.5% shareholder in Fjordland and retains rights to earn up to 65% interest in the project by providing up to \$7.4 million in expenditures and \$290,000 in property payments.

To date, the joint venture/partnership has completed two drilling campaigns on the property and additional properties have been added to the project by Fjordland through three additional option agreements.

**Voisey's Bay (Luk):**

On December 14, 2018, Buchans announced acquisition by staking of five claims (1.25 km<sup>2</sup>) located approximately 8 km southwest of Vale's Voisey's Bay nickel-copper-cobalt mine in northern Labrador.

Known as the Luk Property, this property is reported to cover prospective troctolitic rocks of the same intrusive body that hosts the Voisey's Bay mine.

Historic information on the property indicate surface gossan samples collected within or immediately adjacent to Buchans' property returned **grab sample assays of up to 1.86% Ni, 0.95% Cu, 0.165% Co**, as well as drilled intercepts of up to **7.4 m averaging 0.45% Ni, 0.18% Cu, 0.03% Co** (historic assays not confirmed by Buchans).

Buchans' property is surrounded by mineral claims that comprise Vale's Voisey's Bay mine property, where Vale recently announced a \$US2 billion mine expansion to develop two additional deposits as underground mines adjacent to the currently operating Voisey's Bay Ovoid open pit mine.

Buchans plans to review available historic data on the Luk property prior to determining a strategy to advance this prospective nickel-copper-cobalt property.

**IRELAND - ZINC LEAD EXPLORATION**

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In Ireland, Buchans is continuing exploration for zinc, both in joint venture with Boliden Tara Mines near Navan and on its own licences at Moate. Buchans also entered into a new exploration agreement with Boliden Tara Mines on six Prospecting Licences in Galway.

**Zinc Exploration – Navan, County Meath – Joint Venture with Boliden on Licence 1440R**

Buchans, through a wholly owned subsidiary, holds a 20% interest in Licence 1440R (Tatestown), which is being explored under a Joint Venture with Boliden Tara Mines Limited (80%), and which hosts part of the small Tatestown–Scallanstown zinc-lead mineral deposit. Licence 1440R is located immediately adjacent to Boliden’s large 130 million tonnes Tara zinc-lead mine at Navan, County Meath, about 50 km northwest of Dublin.

During 2017, Tara Boliden, Operator of the JV, completed an infill drilling programme of four drill holes between and peripheral to existing resource blocks on Licence 1440R, with all four holes intersecting economic grade mineralisation over widths between two and nine metres. The drilling added approximately 500,000 tonnes to the deposit, confirmed the continuity of the deposit, the very widespread nature of mineralisation in this area and the potential for extensions.

An updated internal estimate of the Tatestown- Scallanstown deposit was completed by Boliden Tara in 2018 suggesting inferred resources of approximately 2 million tonnes\* at marginal economic grades, of which approximately 1 million tonnes is located on Licence 1440R (Tatestown). The Tatestown–Scallanstown deposit straddles the Blackwater River, which forms the licence boundary between Licences 1440R and 1496. The Scallanstown portion of the deposit is located on Licence 1496 wholly-owned by Boliden Tara. *\*This internal estimate is preliminary in nature and comprises inferred resources that are considered too speculative geologically to have economic considerations applied to them. It is uncertain if further exploration will result in the deposit being delineated as a formal mineral resource.*

The Tatestown-Scallanstown deposit is centered on the east-west Tatestown Fault and lies within a well-defined, two-kilometre wide, north-south trending, zone of mineralisation, which is a peripheral extension of the large Navan mineralised system. Traced by drilling, this zone extends north-south for four kilometres, terminated to the south by the Randalstown Fault, which separates it from the main body of the Navan mineralisation, and to the north by the Boolies Fault, a major reverse fault with a throw of around 400m identified by seismic surveying. The northern two kilometres of the north-south trending zone remains essentially unexplored on Licence 1440R, with just four, widely spaced intercepts comparable to those peripheral to the known deposit.

At the end of 2018 Boliden Tara drilled one-deep hole of 1,225 metres on Licence 1440R, approximately two kilometres to the north of the Tatestown-Scallanstown deposit. The hole intersected the Navan Pale Beds between 1,000 and 1,200 metres down hole which were extensively calcite veined and brecciated with pervasive low-grade mineralization of sphalerite-galena common throughout. The encouraging results of this deep hole supports the concept of a continuous mineralized corridor extending north-northwest from Tatestown, which, in turn, might reflect a larger property scale northwest-southeast trend extending through the main Navan Mine area to the new Tara Deep deposit in the southeast.

The adjacent Navan orebody was discovered in late 1970 and has been in production since 1977 at rates of up to 2.6 million tonnes per year and is currently the largest zinc mine in Europe and one of the larger zinc mines in the world. It is a world-class carbonate-hosted Zn-Pb deposit comprising a series of complex tabular lenses within Lower Carboniferous Limestones which including volumes mined to date and remaining reserves, would measure over 130 million tonnes in size.

Boliden reported in 2017 that successful exploration had resulted in the discovery of the new Tara Deep deposit, lying approximately two kilometres east of the main orebody, with an initial inferred mineral resource of 10 million tonnes with a zinc grade of 8.5% and a lead grade of 1.8%. Boliden has recently reported that the bulk of Tara’s exploration activities in 2018 focused on surface drilling at Tara Deep. Boliden’s current estimation for Tara Deep is 18.2 million tonnes, in the inferred category, grading 7.6% Zn and 1.6% Pb which represents an additional 5.2

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million tonnes at 6.5% Zn and 1.4% Pb of new inferred resources added during the past year. The mineralisation resembles Tara's main ore body, has a more complicated structure, is at a greater depth of between 1,200 and 2,000 metres, and is believed to have significant exploration potential.

**Joint Venture with Boliden on Licence 3373 (Kells) Adjacent to Tara Mine**

Buchans, through its wholly owned subsidiary Minco Ireland Limited, has entered into a joint venture agreement with Boliden Tara Mines on Licence 3373, contiguous to the west with Licence 1440R. Under terms of this agreement, Buchans can earn a 75% interest through expenditure of €250,000 in staged programmes, by March 1, 2024. Boliden has the right of off-take to purchase or toll process all ore that may be produced from the Licence area.

Licence 3373, located approximately 10 km northwest of the Navan orebody covers an area of approximately 30 square km and constitutes the north-western quadrant of a contiguous block of ground currently being explored by Boliden Tara Mines. Exploration on Licence 3373 has focused on the search for zinc-lead mineralization within the Navan Group (Pale Beds).

Seismic surveying undertaken in 2011 and 2012 by Boliden Tara identified a major east-west fault extending across Licence 3373 and the western part of Licence 1440R. Four structurally defined drill targets with potential for late-epigenetic mineralization have been identified on Licence 3373, located along a line which runs from eight to fifteen kilometres west of the Tara Mine, lying parallel and to the south of this major east-west fault and offset by a series of north east striking faults.

Buchans, through Minco Ireland, completed two diamond drill holes in 2018 to depths of 283 metres and 346 metres, respectively. The objective of the drilling was to better constrain the location of the main extension fault controlling the boundary of the major east-west fault.

These four structurally defined drill targets with potential for late epigenetic mineralisation, comparable to that at Tatestown-Scallanstown, have been identified lying to the south of the Boundary Fault where offset sinisterly by a series of north east striking faults located eight to fifteen kilometres west of the Tara Mine, at estimated depths of 550 to 800 metres below surface.

Four new target areas will provide focus for continued exploration during 2019. Proposed work programs will focus on the four target areas and include re-interpretation of previous seismic survey data based on 2018 drilling, soil geochemistry, diamond drilling to define geology and test targets and integration of new geological re-interpretation with that of Boliden's on adjacent Licence 1440R to the east, to create a large "Boundary Fault Corridor" targeting project.

**Lead-Zinc Exploration, Moate, County Westmeath, Ireland**

Through its wholly owned subsidiary, Minco Ireland Limited, Buchans holds three Licences, 1228, 1229 and 3981, at Moate in County Westmeath, centered on a specific geological target identified by Minco Ireland, with potential for zinc-lead mineralization of Tynagh Mine type.

The primary target horizon remains reef derived breccia systems developed along the reef margin. A second phase of drilling (comprising 13 holes for a total of 2,600 metres) has been recommended to explore these targets.

Elsewhere in Ireland, through its wholly owned subsidiary Minco Ireland Limited, and based on almost 50 years of history and experience exploring in Ireland, the Company continues to evaluate other areas of specifically geologically targeted mineral exploration potential, with a view to acquiring other or new licences, when available, or entering into new joint venture agreements with other operators.

**WOODSTOCK MANGANESE PROJECT – BATTERY GRADE METAL**

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Canadian Manganese Corporation, a wholly owned subsidiary of Buchans Resources Limited, holds the Woodstock manganese property in New Brunswick, containing the Plymouth Mn-Fe deposit, which hosts an Inferred Resource and on which a positive Preliminary Economic Assessment (PEA) was completed in 2014.

The Plymouth Mn-Fe deposit is located 5 km west of the town of Woodstock, in west-central New Brunswick, near the junction of the Trans Canada and US Interstate I-95 highways, and approximately 9 km from the border with the state of Maine, USA.

In 2014 a PEA was completed by Tetra Tech and Thibault & Associates Inc. in compliance with National Instrument 43-101 based on an updated mineral resources estimate prepared by Mercator Geological Services. The PEA Technical Report is filed on SEDAR at [www.sedar.com](http://www.sedar.com).

Metallurgical development programs for Woodstock have focused on the production of high-grade electrolytic manganese metal, and the intermediate production of purified manganese sulphate solution as an interim step, enabling the add-on production of manganese chemicals, manganese catalyst, battery grade manganese dioxide and high-purity manganese metal for electronics.

Advancements in electric vehicle manufacturing are transforming the entire global automobile industry driving increased battery demand and NMC (nickel/manganese/cobalt) batteries are becoming the rechargeable battery of choice for next-generation automotive and industrial uses. Manganese is a key component in the formulations of the cathode material used in high-performance lithium-ion batteries, and in utility bulk energy storage facilities, which are expected to create strong demand for high-purity manganese products.

*Metallurgy & Processing:*

At Woodstock, manganese in the Plymouth mineral resource occurs predominately as a manganese carbonate (rhodochrosite) as a reduced form of manganese (Mn with an oxidation state of II) and provides a competitive edge for production of high-purity manganese metal relative to high-grade manganese oxide feed material (Mn with an oxidation state of III or IV). Many manganese resources around the world are of the oxide type and are not readily soluble in acid, thus requiring high cost roasting, reduction and environmental processing technologies to reduce manganese and form manganese sulphate in solution as is required for high-purity manganese production. The Plymouth deposit material is readily soluble in sulphuric acid, forming a solution containing manganese sulphate with a minimal amount of heavy metal impurities.

An extensive bench scale metallurgical test program completed by Thibault over the three years, 2011 to 2014, defined a technically viable hydrometallurgical process technology for the production of commercial grade electrolytic manganese metal, containing between 99.70% to 99.76% Mn. The process development program was focused on the assessment of competitive processing methods with measures to minimize the environmental impact based on commercially proven processing technologies.

The process technology defined for processing of the Plymouth mineralization is based on technology to achieve an ultra-pure solution of manganese sulfate. With various tests to optimize the electrowinning cell performance relative to current efficiency and metal quality, the electrowinning tests consistently produced electrolytic manganese metal with a metallic manganese content (based on trace metal analysis) of greater than 99.99% and a total manganese content (base on trace metals and non-metallic trace elements such as oxygen, nitrogen and hydrogen) ranging from 99.70% to 99.76% Mn.

The Woodstock 2014 Preliminary Economic Assessment-base case indicates a long project life of 40 years, with an average production of 80,000 tonnes of manganese metal per year, over the life of the project. The PEA was prepared by Tetra Tech with specific focus on mine design, infrastructure (including tailings storage facility) and environmental parameters. The metallurgy and process design sections were completed by Thibault. & Associates.

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**EXPLORATION AND EVALUATION ASSETS**

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	December 31 2018 \$	Additions \$	December 31 2017 \$	Impairment \$	Additions \$	December 31 2016 \$
Buchans	12,142,305	2,593,004	9,549,301	-	635,312	8,913,989
Woodstock	4,637,333	14,447	4,622,886	-	184,657	4,438,229
Ireland	1,111,957	319,583	792,374	-	193,240	599,134
UK	-	-	-	(2,842,933)	-	2,842,933
Total	17,891,595	2,927,034	14,964,561	(2,842,933)	1,013,209	16,794,285

**XTIERRA INC.**

Buchans holds 30 million shares in Xtierra Inc. ("Xtierra"), a company listed on the TSX Venture Exchange under the symbol "XAG", now representing an approximate 22% interest. The market value of the Xtierra shares at December 31, 2018 based on the market price of Xtierra shares on the TSX Venture Exchange was \$1,800,000.

Xtierra holds the Bilbao polymetallic sulphide and oxide replacement silver-lead-zinc-copper property, located in the Central Mineral Belt of Mexico, in the southeastern part of the State of Zacatecas, approximately 500 km northwest of Mexico City.

At December 31, 2018, the Company held secured Notes receivable from Xtierra in the amount of US\$766,477 (\$1,044,713).

On February 14, 2018, in consideration of the issue to Buchans of 13 million, non-transferable warrants, each warrant entitling Buchans to purchase one common share of Xtierra for \$0.05 per share for a term of two years, the Company entered into a two-year Support and Standstill Agreement ("Support Agreement") to defer repayment of principal and accrued interest of the Notes, and also to provide additional financial support of up to US\$100,000, on the following terms:

- The Notes, including the additional advances, remain secured by a pledge to Buchans of the shares of Orca Minerals Limited, which indirectly holds Xtierra's mineral properties in Mexico (the "Secured Property");
- Accrual of interest is suspended during the term of the Support Agreement;
- Buchans has the option at any time, upon 60 days written notice, to require the transfer of the Secured Property to Buchans in full satisfaction of the Notes, including accrued interest, unless during that 60-day period the debt is repaid in full, in cash;
- Xtierra has the right to repay the Notes, including accrued interest in cash at any time;
- Upon expiry of the term of the Support Agreement, Xtierra may discharge the debt in full by transferring the Secured Property to Buchans.

During the period from February 14, 2018 to December 31, 2018, the Company advanced an additional US\$75,000 (\$94,920) to Xtierra. Subsequent to December 31, 2018, the remaining amount totaling US\$25,000 (\$34,075) was advanced.

The value of the 13 million Xtierra warrants issued to the Company was estimated to be \$464,377 at February 14, 2018 and is included in finance income in the Statement of Loss and Comprehensive Loss. At December 31, 2018 the fair value of the warrants was estimated to be \$406,912. The change in estimated fair value in the amount of \$57,465 is recorded as change in fair value of investments in the Statement of Loss and Comprehensive Loss.

## **OUTLOOK AND METAL PRICES**

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Metal Prices are a key factor in the future outlook for the mining and mineral exploration industry as a whole.

The metal price assumptions used in preparation of the February 2019 Mineral Resource Estimate on Buchans Lundberg deposit were: US\$1.20 per pound (US\$2,645/tonne) Zinc; US\$1.00 per pound (US\$2,205/tonne) Lead; US\$3.00 per pound (US\$6,615/tonne) Copper; US\$1,250/oz Gold; and US\$17/oz Silver.

The improvement in base metal prices which began in late 2016, continued throughout 2017 and into the first half of 2018, but stalled mid-year as the optimism provided by shrinking metal inventories and generally declining mine production was overshadowed by the growing threat of a US-China trade war, tariffs, potential interest rate hikes in the US, uncertainty in Europe and a general slowdown in the global economy. These conditions caused most metal prices to retreat in the second half of 2018, before stabilizing towards year end.

After having risen consistently for almost two years, the prices of zinc and copper began falling in mid-2018; however, the average prices remained virtually unchanged compared to 2017. The silver price was negative from mid-2018 onwards, although the price of gold remained stable.

### **Zinc**

The zinc price in 2018 averaged US\$2,920/tonne in 2018, an increase from US\$2,895/tonne in 2017. The price of zinc was affected by the economic issues and an increase of mine supply in 2018. After rising to US\$3,600/tonne in February, its highest level since 2007, the price declined over 30% to the US\$2,284/tonne level, a 22-month low, in August, and to a 52-week low of US\$2,314/tonne in late September

Prices in the fourth quarter of 2018 averaged US\$2,630/tonne, softening throughout the quarter in response to the US/China trade conflict and concerns of slowing global economic growth. Several large new zinc mines opened new sources of mined zinc and negatively impacted the price, including the start-up of the Century tailings project, the ramp-up of MMG's Dugald River project and the restart of some of the idled Glencore capacity.

Zinc concentrate supplies increased in the second half of the year, with mine production increasing while smelters in China continue to face increased environmental regulation. The surplus concentrate market moved spot treatment charges upwards from historical lows. Metal production declined at China's zinc smelters, and metal supply continued to fall short of demand, despite the increase in smelter production elsewhere in the world.

Global zinc inventories on the London Metal Exchange, Shanghai and COMEX peaked at 370,000 tonnes in 2018, but dropped by almost 60% to around 150,000 tonnes in March 2019 and to 50,425 tons in April, the lowest level of LME inventories since late 2007 and the equivalent of only two day's global consumption.

The expectations for supply and demand fundamentals are positive for 2019. In the first quarter zinc prices steadily increased as LME inventories continued to be drawn down to historically low levels not seen since 1990. The zinc price improved through the first quarter of 2019 and reached US\$1.37 per pound (US\$3,020/tonne) in mid-April, the highest level since June 2018. LME zinc prices averaged US\$1.23 per pound (US\$2,712/tonne) in the quarter, an increase of 3% over the previous quarter, but down 21% over the same quarter last year.

According to the International Lead and Zinc Study Group global demand for refined zinc metal is expected rise in 2019, and the expectation is that global demand for refined zinc will exceed global supply, drawing down stocks. Demand for zinc in China remains strong.

### **Lead**

The price of lead averaged US\$2,242/tonne for 2018. Global demand for lead increased slightly year on year as demand for batteries for the new vehicle market increased. Demand for lead in China remained unchanged, year on year, while elsewhere increased by around 2%. Metal production fell short of metal demand, with the shortfall balanced by stocks. The lead price declined in the early months of 2019, touching US\$1,900/tonne in mid-April.

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**Copper**

The price of copper improved in the first half of 2018, reaching a four year high of US\$7,331/tonne in June, due to economic growth and supply tightness, before retracing to a 14-month low of US\$5,760/tonne in August as the macroeconomic environment began to turn, and averaged US\$6,527/tonne for the year, up from an average of US\$6,173/tonne in 2017.

The copper market has seen an improvement in prices during the first four months of 2019 as the price increased towards US\$6,450/tonne. LME copper prices traded above US\$3.00 per pound (US\$6,614/tonne) during the first quarter of 2019 and averaged US\$2.82 per pound (US\$6,217/tonne), up 1% from the fourth quarter of 2018 but down 11% from the same quarter a year ago.

The growth in demand for copper continued to be strong. There were few disruptions to production in copper mines, and concentrate supplies increased. Global production by copper smelters increased and metal supplies were balanced by demand. Metal stocks on the LME remain below long-term average levels. The limited new mine supply is expected to keep the metal market in deficit. The outlook for 2019 is for the copper price to trend upward towards US\$7,000/tonne.

**Silver**

The silver price also fell during 2018, remaining around the US\$17/oz. level for the first half of 2018 and then falling to the US\$14/oz. level in the third quarter, before staging a rally to end the year around US\$15.50/oz. The average price of silver for 2018 was lower than the previous year and despite the increased uncertainty in financial markets the silver price followed the downward trend in base metal prices during the latter half of the year.

According to the Silver Institute, the use of silver in photovoltaic applications will continue to rise as demand for solar power increases. Industrial fabrication accounts for 60% of the end usage for silver and more diverse applications in water purification, LED lighting, flexible electronics and screens as well as anti-microbial applications in textiles will increase demand.

**RESULTS OF OPERATIONS**

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The Company recorded no revenue in the years ended December 31, 2018 or December 31, 2017.

For the year ended December 31, 2018, the Company recorded a loss of \$42,303, compared to a loss of \$5,010,599 for the year ended December 31, 2017. The loss for the year ended December 31, 2018 included income of \$464,377 representing the fair value of warrants received, a charge in the amount of \$57,465 in the estimated fair value of investment and a gain on disposal of marketable securities of \$344,037. The loss for the year ended December 31, 2017 included a loss in market value of marketable securities in the amount of \$1,287,727 and an impairment provision against exploration assets in the amount of \$2,842,933. Administrative expenses, excluding foreign exchange, for the year ended December 31, 2018 amounted to \$877,426 compared to \$699,096 for the year ended December 31, 2017.

For the three-month period ended December 31, 2018, the Company recorded a gain of \$279,687, compared to a loss of \$3,035,317 for the same period ended December 31, 2017. The gain for the three-month period ended December 31, 2018 included an audit adjustment in the amount of \$406,912 recording the fair value as at December 31, 2018 of the Xtierra warrants received in February 2018. The loss for the three-month period ended December 31, 2017 included an impairment provision against exploration assets in the amount of \$2,842,933.

During the year ended December 31, 2018, Buchans invested \$2,927,034 (2017 - \$1,013,209) on exploration of its mineral properties, of which the largest amounts were expended on the Buchans zinc lead project in central Newfoundland.

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**SELECTED ANNUAL INFORMATION**

The following selected annual information has been derived from the financial statements of the Company, which have been prepared in accordance with International Financial Reporting Standards.

Expressed in \$000's, Except for per share amounts	Year ended Dec. 31, 2018 \$	Year ended Dec. 31, 2017 \$	Year ended Dec. 31, 2016 \$
Loss before taxation and other items	(26)	(4,988)	(937)
Net loss for the period	(42)	(5,011)	(1,051)
Net loss per common share	(0.00)	(0.10)	(0.02)
Total assets	22,455	22,541	20,697
Cash and cash equivalents	2,895	3,426	3,003
Shareholders equity	22,104	22,146	20,342

**SUMMARY OF QUARTERLY RESULTS**

Expressed in \$000's, Except for per share amounts	Dec. 31 2018 \$	Sept. 30 2018 \$	June 30 2018 \$	March 31 2018 \$	Dec. 31 2017 \$	Sept. 30 2017 \$	June 30 2017 \$	March 31 2017 \$
Net (loss) gain	280	(102)	943	(1,163)	(3,036)	(1,462)	(296)	(217)
Net (loss) gain per share - basic and diluted	0.005	(0.002)	0.017	(0.023)	(0.065)	(0.031)	(0.006)	(0.005)
Total assets	22,455	22,521	22,297	21,506	22,541	24,992	20,212	20,507
Working capital	2,761	4,142	5,355	4,780	6,318	4,705	1,703	2,413

- The loss for the quarter ended June 30, 2017 included a foreign exchange loss of \$83,741
- The loss for the quarter ended September 30, 2017 included a loss in market value of marketable securities of \$1,189,136 and foreign exchange loss of \$85,438
- The loss for the quarter ended December 31, 2017 included an impairment provision against exploration assets in the amount of \$2,842,933.
- The loss for the quarter ended March 31, 2018 included a loss in market value of marketable securities of \$866,023.
- The gain for the quarter ended June 30, 2018 included a gain in market value of marketable securities of \$1,053,879.
- The loss for the quarter ended September 30, 2018 included a gain on disposal of marketable securities of \$156,180.
- The gain for the quarter ended December 31, 2018 included an audit adjustment recording the fair value of warrants received in February 2018 in the amount of \$406,912.

**LIQUIDITY AND CAPITAL RESOURCES**

At December 31, 2018, Buchans held \$2,895,188 (December 31, 2017- \$3,426,194) in cash and cash equivalents and marketable securities of \$Nil (December 31, 2017-\$3,143,782) and had a working capital surplus of \$2,760,648, compared to a working capital surplus of \$6,318,009 at December 31, 2017.

At December 31, 2018, Buchans held mineral properties with a combined book value of \$17,891,595. The balance sheet values for these assets may not represent that which could be obtained if the assets were to be offered for sale.

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**RELATED PARTY TRANSACTIONS**

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No fees were paid by the Company to directors for their services as directors of the Company in the periods ended December 31, 2018 or 2017.

During the year ended December 31, 2018, the Company paid or accrued \$28,182 to Steenberglaw Professional Corporation, a corporation controlled by Neil Steenberg, Secretary of the Company, for legal services. Included in accounts payable and accrued liabilities at December 31, 2018 is \$7,546 payable to Steenberglaw Professional Corporation for legal services.

**COMMITMENTS**

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In connection with the private placement completed in December 2017, Buchans entered into an Investor Rights Agreement to provide certain liquidity and anti-dilution rights to the Funds which acquired the placement shares. If the Company's shares have not been listed on a recognized stock exchange by June 30, 2018, the Funds shall be issued an additional 0.10 of a share for each Placement share at no additional cost and similarly at the end of each successive quarterly interim period after June 30, 2018. A total of 1,336,000 shares were issued to the Funds pursuant to this agreement in 2018 and an additional 1,336,000 shares were issued to the Funds subsequent to year-end.

The Company has entered into a lease for its office premises, which expires on January 31, 2022. The yearly rental payments amount to approximately \$286,000, approximately half of which the Company expects to recover from other corporations with some common directors and officers that share part of the office premises.

**CRITICAL ACCOUNTING ESTIMATES**

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The Company's financial statements are prepared in accordance with IFRS and require management to make estimates and assumptions about future events that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities, if any, at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Such estimates and assumptions affect the carrying value of assets, impact decisions as to when exploration and development costs should be capitalized or expensed and affect estimates for asset retirement obligations and reclamation costs. Other significant estimates made by the Company include factors affecting valuation of tax accounts. The Company regularly reviews its estimates and assumptions; however, actual results could differ from these estimates and these differences could be material.

**Adoption of New Accounting Standards**

The standards and interpretations within IFRS are subject to change. For further details, please refer to Note 4 of the December 31, 2018 audited consolidated financial statements.

**PRINCIPAL RISKS AND UNCERTAINTIES**

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The realization of mineral exploration assets is dependent on the development of economic ore reserves and is subject to a number of significant potential risks including:

**Exploration, Development and Operating Risk**

Resource exploration and development is a speculative business, characterized by a number of significant risks including, among other things, unprofitable efforts resulting not only from the failure to discover mineral deposits but also from finding mineral deposits that, though present, are insufficient in quantity and quality to return a profit from production. The marketability of minerals acquired or discovered by Buchans may be affected by

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numerous factors that are beyond the control of Buchans and that cannot be accurately predicted, such as market fluctuations, the proximity and capacity of milling facilities, mineral markets and processing equipment, and such other factors as government regulations, including regulations relating to royalties, allowable production, importing and exporting minerals and environmental protection, the combination of which factors may result in Buchans not receiving an adequate return of investment capital. Many of the properties in which Buchans holds an interest are in the exploration stage only and are without a known body of commercial ore. Development of the subject mineral properties would follow only if favourable exploration results are obtained and a positive feasibility study is completed.

The business of exploration for minerals and mining involves a high degree of risk. Few properties that are explored are ultimately developed into producing mines. There is no assurance that Buchans' mineral exploration and development activities will result in any discoveries of commercial bodies of ore. The long-term profitability of Buchans' operations will in part be directly related to the costs and success of its exploration and development programs, which may be affected by a number of factors.

Substantial expenditures are required to establish reserves through drilling and to develop the mining and processing facilities and infrastructure at any site chosen for mining. Although substantial benefits may be derived from the discovery of a major mineralized deposit, no assurance can be given that minerals will be discovered in sufficient quantities to justify commercial operations or that funds required for development can be obtained on a timely basis and at an acceptable cost.

In addition to the above, there can be no assurance that current exploration programs will result in profitable mining operations. The recoverability of the carrying value of interests in mineral properties and Buchans' continued existence is dependent upon the preservation of its interests in the underlying properties, the discovery of economically recoverable reserves, the achievement of profitable operations, or the ability of Buchans to raise additional financing, if necessary, or alternatively upon Buchans' ability to dispose of its interests on an advantageous basis. Changes in future conditions could require material write-downs of the carrying values.

#### **No Assurance of Production**

Buchans has limited experience in placing resource properties into production, and its ability to do so will be dependent upon using the services of appropriately experienced personnel or entering into agreements with other major resource companies that can provide such expertise. There can be no assurance that Buchans will have available to it the necessary expertise when and if Buchans places its resource properties into production and whether it will produce revenue, operate profitably or provide a return on investment in the future.

#### **Fluctuating Mineral Prices**

Metal prices are subject to significant fluctuation and are affected by a number of factors which are beyond the control of Buchans. The principal factors include: diminished demand which may arise if economic growth in North America, Europe and/or China are not sustained; supply interruptions due to changes in government policies in base and precious metals, war, or international trade embargos; increases in supply resulting from the alleviation of professional and skilled labour shortages experienced by the world's largest producers; and, increases in supply resulting from the discovery and the development of new sources of base and precious metals. The effect of these factors on Buchans' operations cannot be predicted.

#### **Factors beyond Buchans' Control**

The exploration and development of mineral properties and the marketability of any minerals contained in such properties will be affected by numerous factors beyond the control of Buchans. These factors include government regulation, high levels of volatility in market prices, availability of markets, availability of adequate transportation and refining facilities and the imposition of new or amendments to existing taxes and royalties. The effect of these factors cannot be accurately predicted.

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**Failure to Obtain Additional Financing**

While Buchans has sufficient financial resources necessary to undertake its currently planned activities, there can be no assurance that Buchans will be successful in obtaining any additional required funding necessary to conduct additional exploration or evaluation, if warranted, on Buchans' current exploration properties or any properties that may be acquired or to develop mineral resources on such properties, if commercially mineable quantities of such resources are located thereon. Failure to obtain additional financing on a timely basis could cause Buchans to forfeit its interest in such properties. If additional financing is raised through the issuance of equity or convertible debt securities of Buchans, the interests of shareholders in the net assets of Buchans may be diluted.

**Environmental Risks and Hazards**

Buchans' operations are subject to environmental regulations in the various jurisdictions in which it operates. Environmental legislation provides for restrictions and prohibitions on spills, releases or emissions of various substances produced in association with certain mining industry operations, such as seepage from tailings disposal areas, which would result in environmental pollution. A breach of such legislation may result in the imposition of fines and penalties. In addition, certain types of operations require the submission and approval of environmental impact assessments. Environmental legislation is evolving in a manner that means standards are stricter, and enforcement, fines and penalties for non-compliance are more stringent. Environmental assessments of proposed projects carry a heightened degree of responsibility for companies and directors, officers and employees. The cost of compliance with changes in governmental regulations has a potential to reduce the profitability of operations.

**Competition**

The mining industry is intensely competitive in all its phases, and Buchans competes with other mining companies in connection with the acquisition of properties producing or capable of producing, precious and base metals. Many of these companies have greater financial resources, operational experience and technical facilities than Buchans. Competition could adversely affect Buchans' ability to acquire suitable properties or prospects in the future. Consequently, Buchans' operations and financial condition could be materially adversely affected.

**Management**

The success of Buchans is currently largely dependent on the performance of its directors and officers. There is no assurance Buchans can maintain the services of its directors and officers or other qualified personnel required to operate its business. The loss of the services of these persons could have a material adverse effect on Buchans and its prospects. Some of the directors and officers also serve as directors and/or officers of other companies which are engaged and will continue to be engaged in the search for additional business opportunities on behalf of other companies, and situations may arise where these directors and officers will be in direct competition with Buchans. Conflicts, if any, will be dealt with in accordance with the relevant provisions of applicable corporate and securities laws.

Recruiting and retaining qualified personnel is critical to Buchans' success. The number of persons skilled in the acquisition, exploration and development of mining properties is limited and competition for such persons is intense. As Buchans' business activity grows, additional key financial, administrative and mining personnel as well as additional operations staff will be required. Although Buchans believes it will be successful in attracting, training and retaining qualified personnel, there can be no assurance of such success. If Buchans is not successful in attracting, training and retaining qualified personnel, the efficiency of operations could be affected.

## **FINANCIAL RISK MANAGEMENT**

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### **Fair value**

The carrying amounts for cash and cash equivalents, marketable securities amounts receivable and accounts payable and accrued liabilities on the consolidated statements of financial position approximate fair value because of the limited term of these instruments.

### **Interest rate risk**

Buchans finances its operations through the issue of equity shares and has no fixed interest rate agreements. Buchans had \$2,895,188 in cash and no cash equivalents at December 31, 2018. A one percent change in interest rates will result in a corresponding change in interest income of approximately \$Nil based on cash equivalent balances existing at December 31, 2018.

### **Liquidity risk**

Buchans' liquidity exposure is confined to meeting obligations under short term trade creditor agreements. This exposure is financed from a combination of cash, additional issues of ordinary equity shares and other financing arrangements.

### **Credit risk**

With respect to credit risk arising from financial assets of Buchans, which comprise of cash and cash equivalents, cash deposits give risk to credit risks on the amounts due from counter-parties. The Company controls and monitors the distribution of this exposure by ensuring that all financial instruments are held with reputable and financially secure institutions and that exposure to credit risk is distributed across a number of institutions. At December 31, 2018 all cash and short-term deposits had a maturity date of 30 days or less. Credit risk is actively managed across the portfolio of institutions by ensuring that material surplus funds are placed with counter-parties that have a credit rating of at least BBB-.

### **Foreign currency risk**

Buchans has exposure to currency exchange fluctuations and restrictions as Buchans' currencies are spread over Canadian Dollars (Cdn\$), US Dollars (US\$), Sterling Pounds (£), and Euro (€). Buchans seeks to minimize its exposure to currency risk by closely monitoring exchange rates. Buchans does not presently utilize swaps or forward contracts to manage its currency exposures, although such facilities may be used where appropriate in the future.

Further details of Buchans' financial risk management policies are set out in Note 18 and 19 of the December 31, 2018 audited financial statements.

## **OFF-BALANCE SHEET ARRANGEMENTS**

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There are no off-balance sheet arrangements.

## **FINANCIAL INSTRUMENTS**

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The Company has cash balances and no interest-bearing debt. The Company's current policy is to invest excess cash in investment-grade short-term deposit certificates issued by major banks. The Company periodically monitors the investments it makes and is satisfied with the credit ratings of its banks.

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The Company has designated its cash and cash equivalents as held-for-trading, which are measured at fair value. Fair value estimates of financial assets and liabilities are made at the balance sheet date, based on relevant market information and information about the financial instrument. These estimates involve uncertainties and are subjective in nature. Other financial instruments included in current assets are classified as loans and receivables, which are measured at amortized costs. Accounts payable and accrued liabilities are classified as other financial liabilities, which are measured at amortized cost. As at December 31, 2018, the carrying and fair value amounts of the Company's financial instruments were the same.

**OUTSTANDING SHARE CAPITAL**

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The Company has authorized an unlimited number of common shares.

At December 31, 2018 and April 29, 2019, 57,196,716 and 58,532,716 common shares, respectively, were issued and outstanding.

**ADDITIONAL INFORMATION**

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Additional information about the Company is available on the Company's website at [www.BuchansResources.com](http://www.BuchansResources.com).

**FORWARD-LOOKING STATEMENTS**

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*This management's discussion and analysis contains certain forward-looking statements relating to, but not limited to, the Company's expectations, intentions, plans and beliefs. Forward-looking information can often be identified by forward-looking words such as "anticipate", "believe", "expect", "goal", "plan", "intend", "estimate", "may" and "will" or similar words suggesting future outcomes, or other expectations, beliefs, plans, objectives, assumptions, intentions or statements about future events or performance. Forward-looking information may include reserve and resource estimates, estimates of future production, unit costs, costs of capital projects and timing of commencement of operations, and is based on current expectations that involve a number of business risks and uncertainties. Factors that could cause actual results to differ materially from any forward-looking statement include, but are not limited to, failure to establish estimated resources and reserves the grade and recovery of ore which is mined varying from estimates, capital and operating costs varying significantly from estimates, delays in obtaining or failures to obtain required governmental, environmental or other project approvals, delays in the development of projects changes in exchange rates, fluctuations in commodity prices, inflation and other factors. Forward-looking statements are subject to risks, uncertainties and other factors that could cause actual results to differ materially from expected results. Shareholders and prospective investors should be aware that these statements are subject to known and unknown risks uncertainties and other factors that could cause actual results to differ materially from those suggested by the forward-looking statements. Shareholders are cautioned not to place undue reliance on forward-looking information. By its nature, forward-looking information involves numerous assumptions, inherent risks and uncertainties, both general and specific, that contribute to the possibility that the predictions, forecasts, projections and various future events will not occur. The Company undertakes no obligation to update publicly or otherwise revise any forward-looking information whether as a result of new information, future events or other such factors which affect this information, except as required by law.*

Date: April 29, 2019