Lomiko Announces Positive Results on its Initial Metallurgical Test Programs at its La Loutre Graphite Project

written by Raj Shah | April 29, 2022

Results Indicate Purity of >99.9% C(t) of its Concentrate and Positive Response of Samples to Expanded Graphite for All Flake Sizes Tested

April 28, 2022 (Source) – **Lomiko Metals Inc.** (TSX.V: LMR) ("Lomiko Metals" or the "Company") is pleased to announce an update on the initial metallurgical programs conducted for the La Loutre graphite project. Lomiko has engaged three independent laboratories, Corem, ProGraphite and SGS Lakefield to support the value-added metallurgical testing of samples of the La Loutre graphite concentrate.

As part of the 2022 strategic objectives as previously announced on March 3, 2022, Lomiko is undertaking several metallurgical studies to further define the chemical and physical properties of La Loutre graphite concentrate. These studies have several goals, including (a) determining the upgrading potential of the graphite flotation concentrate for value-added processing, (b) confirming the plant flowsheet to aid in the plant design for the Pre-Feasibility Study the Company will be looking to complete in 2023, and (c) evaluating the production of spherical graphite for anode battery applications. This characterization work facilitates the development of Technical Data Sheets (TDS) to initiate customer partnership discussions.

The 2021 metallurgical program produced 1.8 kg of graphite

flotation concentrate (please see news release dated April 7, 2021 and referred to within the Company's Preliminary Economic Analysis ("PEA") which is available on the Company's website or on SEDAR). This concentrate was split into two samples and sent to each of Corem in Quebec and ProGraphite in Germany for characterization and purification testing.

Based on the characterization and purification tests performed by the two labs, the graphite from the La Loutre deposit would be suitable for a wide range of traditional markets such as refractories, fire retardants, crucible, and friction products, or expanded graphite markets. Further, the purification results suggest that the La Loutre graphite may be suitable for high-value anode battery applications which require ultra high purity graphite concentrate of 99.95%. It is important to note that these results are preliminary, and that further testing will be required to confirm with greater certainty product suitability and potential. The evaluation of the full processing sequence from flake graphite to battery trials is scheduled for the second half of 2022.

Belinda Labatte, CEO and Director, stated: "Our team is pleased to have received excellent results from two independent specialized laboratories, on the first of many trials to examine the purity of the La Loutre graphite concentrates for industrial use, including for anode battery-grade quality. The tests on the expanded graphite have shown that all the flake sizes tested are showing excellent results for our concentrates in a wide range of industrial applications, an important step to developing the graphite market in North America. The findings from this initial program will better define the parameters for the metallurgical optimization program that will commence in the spring of 2022 to support the project development. We are looking forward to working with Quebec institutions, local communities, and First Nations to further develop our La Loutre graphite project as we

move forward with future studies of this project. As mentioned in our press release dated April 22, 2022, we are looking forward to beginning our La Loutre infill and step-out drilling program which will start as soon as the ground conditions allow in mid-May. We are working toward becoming an integral and vital part of the supply chain, including the creation of new-economy job prospects in the development of our project to be used in battery production for Quebec, Canadian, and North American solutions."

Corem upgrading process reveals high purity concentrate and low level of impurities

Corem subjected the 2021 flotation concentrate to initial chemical purification trials to assess the amenability of the La Loutre graphite concentrate to chemical upgrading. Using a chemical purification method, the graphite concentrate was successfully upgraded from 98.4% C(t) to >99.9% C(t). The upgrading process employed a caustic bake using sodium hydroxide (NaOH) followed by an acid leach with hydrochloric acid (HCl), which is considered one of the standard chemical treatment processes for graphite concentrates in place today and employs a milder reagent regime compared to the hydrofluoric acid (HF) treatment used in many Chinese operations currently.

The final product was subjected to a size fraction – commonly referred to as flake size – analysis and each product was submitted for an ICP (Inductively coupled plasma) scan. The results of an ICP scan reveal the total carbon analysis, ash content, and sulfur grade of the flotation concentrate feedstock, the intermediate product after caustic bake, and the final product after the leaching step. The concentration of most elements met the requirements for battery anode grade material and only iron and silica displayed slightly elevated levels. It should be noted that the purification trials were preliminary in

nature and that the initial concentration target of 99.5% was exceeded for each size fraction.

ProGraphite concentrate reveals favourable results and excellent crystallographic properties

The second sample sent to ProGraphite was classified into various fractions (+50, +80, +100, +150, +200, -200, -100 mesh). Graphite from these fractions was used to perform several chemical and physical characterization tests and purification trials. The results were generally favourable and physical and chemical properties are outlined below, and detailed results are provided on the Lomiko website at www.lomiko.com:

- Well-balanced size distribution (50% >100 mesh, 50% -100 mesh). The -100-mesh size fraction is the typical feed material for anode material for lithium-ion batteries. This is consistent with the results provided in the Preliminary Economic Assessment (PEA) analysis, also available on SEDAR and on the Company's website at www.lomiko.com and published on September 10, 2021.
- Degree of graphitization of over 98%, which is very close to the ideal graphite and a key requirement for high-end battery applications.
- High tap densities of >0.7 kg/l for large fractions but below average tap density of 0.47 kg/l for -200 mesh size fraction. Optimization strategies have been identified to improve tap densities of fines.
- The results for the electrical conductivity are within the normal range for their respective fractions. The electric conductivity determines the amenability of graphite for energy storage applications.
- Achieves low levels of volatiles across all size fractions (0.13-0.38%) showing its suitability for high-temperature applications such as refractories.

- Achieves low springback in all size fractions (1.6 – 3.1%), which is critical for all applications where pressure forms, such as with friction products or refractories.
- The oxidation resistance of the larger flakes was excellent (<10% for +80 mesh), while the smaller flakes produced average oxidation behaviour compared to other graphite sources (up to 40% for -200 mesh). Oxidation resistance is an important factor for high-temperature applications.
- Low specific surface area (BET) for all size fractions. Achieving a low BET value is an important factor for battery anode material application.
- Expansion tests identified expansion rates of 350 ml/g for the +80 mesh size fraction and 390 ml/g for the +50 mesh size fraction, which were better than standard values.

These characteristics support the wide use of the La Loutre graphite in both expanded markets and the potential for further purification into battery anode material.

ProGraphite evaluated alkaline and acid purification methods, the two most common methods in use today. The trials using sodium hydroxide (NaOH) treatment followed by sulphuric acid (H_2SO_4) leach produced superior purities with ash contents of only 0.04% and 0.11% in the+80 mesh and -100 mesh size fractions, respectively. Concentrations of deleterious elements were below typical threshold values for battery anode material.

The preliminary purification tests performed by ProGraphite complement the results obtained by Corem and indicate that the La Loutre graphite can be upgraded to battery anode purity levels without aggressive leach using hydrofluoric acid (HF). Further work is planned to optimize purification conditions and complete the full battery anode value-add process, including

battery trials.

Update on Metallurgical Process Optimization at SGS Lakefield

Approximately 1,000kg of core sample from the La Loutre graphite project was carefully selected to represent mine plan, domain and grade composites and shipped to SGS in Lakefield, Ontario to confirm and optimize the test results achieved in the 2021 metallurgical testing program. This will further define the process flowsheet to aid in the plant design, which will be developed during the Pre-Feasibility Study.

Next steps in La Loutre metallurgical studies

Corem and ProGraphite have identified opportunities for optimization, and these will be evaluated in the upcoming months. Results from the SGS lab testing are expected to be available in the Fall and the Company will continue to move forward with and update the market on further testing for battery grade material in 2022.

About Lomiko Metals Inc.

Lomiko Metals has a new vision and a new strategy in new energy. Lomiko represents a company with purpose: a people-first company where we can manifest a world of abundant renewable energy with Canadian and Quebec critical minerals for a solution in North America. Our goal is to create a new energy future in Canada where we will grow the critical minerals workforce, become a valued partner and neighbour with the communities in which we operate, and provide a secure and responsibly sourced supply of critical minerals.

The Company holds a 100% interest in its La Loutre graphite development in southern Quebec. The La Loutre project site is located within the Kitigan Zibi Anishinabeg (KZA) First Nations

territory. The KZA First Nations are part of the Algonquin Nation and the KZA territory is situated within the Outaouais and Laurentides regions. Located 180 kilometres northwest of Montreal, the property consists of one large, continuous block with 48 minerals claims totaling 2,867 hectares (28.7km^2). Lomiko Metals published a PEA on September 10, 2021 which indicated the project had a 15 year mine life producing per year 100,000 tonnes of graphite concentrate at 95% Cg or a total of 1.5Mt of graphite concentrate. This report was prepared as National Instrument 43-101 Technical Report for Lomiko . by Ausenco Engineering Canada Inc., Hemmera Envirochem Inc., Moose Mountain Technical Services, and Metpro Management Inc., collectively the Report Authors.

The Bourier project site is located near Nemaska Lithium and Critical Elements south-east of the Eeyou Istchee James Bay territory in Quebec which consists of 203 claims, for a total ground position of 10,252.20 hectares (102.52 km2), in Canada's lithium triangle near the James Bay region of Quebec that has historically housed lithium deposits and mineralization trends.

Mr. Mike Petrina, Project Manager, a Qualified Person ("QP") under National Instrument 43-101 – Standards of Disclosure for Mineral Projects, has reviewed and approved the technical disclosure in this news release. Oliver Peters of MetPro Management Inc. who is leading the metallurgical development programs of the La Loutre graphite project on Lomiko's behalf is acting as QP and has also reviewed and approved the technical disclosure in this news release.

For more information on Lomiko Metals, review the website at www.lomiko.com, contact Belinda Labatte at 647-402-8379 or email: info@lomiko.com.

Cautionary Note Regarding Forward-Looking Information

This news release contains “forward-looking information” within the meaning of the applicable Canadian securities legislation that is based on expectations, estimates, projections and interpretations as at the date of this news release. The information in this news release about the Company; and any other information herein that is not a historical fact may be “forward-looking information” (“FLI”). All statements, other than statements of historical fact, are FLI and can be identified by the use of statements that include words such as “anticipates”, “plans”, “continues”, “estimates”, “expects”, “may”, “will”, “projects”, “predicts”, “proposes”, “potential”, “target”, “implement”, “scheduled”, “intends”, “could”, “might”, “should”, “believe” and similar words or expressions. FLI in this new release includes, but is not limited to: the suitability of the Company’s graphite flotation concentrate from its La Loutre project, timing for the completion of the Pre-Feasibility Study, the Company’s objective to become a responsible supplier of critical minerals, exploration of the Company’s projects, including expected costs of exploration and timing to achieve certain milestones, including timing for completion of exploration programs; the Company’s ability to successfully fund, or remain fully funded for the implementation of its business strategy and for exploration of any of its projects (including from the capital markets); any anticipated impacts of COVID-19 on the Company’s business objectives or projects, the Company’s financial position or operations, and the expected timing of announcements in this regard. FLI involves known and unknown risks, assumptions and other factors that may cause actual results or performance to differ materially. This FLI reflects the Company’s current views about future events, and while considered reasonable by the Company at this time, are inherently subject to significant uncertainties and contingencies. Accordingly, there can be no certainty that they will accurately reflect actual results. Assumptions upon

which such FLI is based include, without limitation: the results of the characterization and purification tests performed by Corem and ProGraphite, current market for critical minerals; current technological trends; the business relationship between the Company and its business partners; ability to implement its business strategy and to fund, explore, advance and develop each of its projects, including results therefrom and timing thereof; the ability to operate in a safe and effective manner; uncertainties related to receiving and maintaining exploration, environmental and other permits or approvals in Quebec; any unforeseen impacts of COVID-19; impact of increasing competition in the mineral exploration business, including the Company's competitive position in the industry; general economic conditions, including in relation to currency controls and interest rate fluctuations.

The FLI contained in this news release are expressly qualified in their entirety by this cautionary statement, the "Forward-Looking Statements" section contained in the Company's most recent management's discussion and analysis (MD&A), which is available on SEDAR at www.sedar.com, and on the investor presentation on its website. All FLI in this news release are made as of the date of this news release. There can be no assurance that such statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, readers should not place undue reliance on forward-looking information. The Company does not undertake to update or revise any such forward-looking statements or forward-looking information contained herein to reflect new events or circumstances, except as may be required by applicable securities laws.

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accuracy of this news release. No stock exchange, securities commission or other regulatory authority has approved or disapproved the information contained herein.

On behalf of the Board,
Belinda Labatte
CEO and Director, Lomiko Metals Inc.

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