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Alba Mineral Resources plc
("Alba" or the "Company")

Alba Appoints Graphite Experts for Battery Testwork

Alba Mineral Resources plc (AIM: ALBA), the diversified mineral exploration and development company, is pleased to report the appointment of leading graphite experts, ProGraphite GmbH ("ProGraphite") for the next phase of testwork at our high-grade Amitsoq graphite project, in southern Greenland.

Whereas the last phase of the Company's testwork successfully focused on maximising the yield of higher-value large flakes, the focus of the new testwork will be on assessing the most efficient and optimised method for the production of material for lithium-ion battery ("LIB") anode testwork. The flake size of the graphite used to produce LIB anode material is less relevant, as the graphite is micronized to less than 30 micron prior to shaping and purification. Consequently, the recovery of larger flake graphite is not an objective for this testwork.

Highlights

- **The next phase of testwork at the high-grade Amitsoq Graphite Project will focus on the production of material for LIB anode testwork.**
- **Alba has secured the appointment of leading German graphite experts, ProGraphite, to conduct this phase of testwork.**
- **This testwork is distinct from the last phase of work, which confirmed the ability of Amitsoq graphite to produce a concentrate containing a significant proportion (36%) of flakes in the higher-value large, jumbo and super jumbo flake sizes.**

George Frangeskides, Executive Chairman, commented:

"I am delighted that we have been able to secure the expertise of Dr Christoph Frey and his team at ProGraphite in Germany to oversee the next phase of testwork at our high-grade Amitsoq graphite project."

"Given the premium prices attached to the spherical graphite that is used in battery applications (upwards of $3000 per tonne), it is certainly well worth assessing whether Amitsoq graphite is amenable to the production of a high purity product which can be used in lithium-ion batteries, as this will add another, increasingly important market for our product."

Description of LIB Testwork Programme

The testwork conducted by ProGraphite will have three distinct phases:

(1) *Flotation of ore*. This will involve:

(a) crushing, grinding and homogenising, to prepare feed material for the flotation;
(b) optical inspection of the feed material for flake sizes etc, carbon test of the ore;
(c) multistage flotation including several stages of grinding and/or attritioning; and
(d) quality checks (mainly carbon) during flotation.

(2) *Quality assessment of flotation concentrate*. This will involve:

(a) particle size distribution by sieving;
(b) Carbon% of concentrate and of sieve fractions;
(c) specific surface area;
(d) bulk density;
(e) XRF or ICP (for analysis of the impurities after flotation);
(f) XRD (analysis of gangue minerals and degree of graphitisation); and
(g) TGA (thermogravimetry for oxidation behaviour).

(3) *Analysis of LIB purity.* Using the concentrate obtained from flotation, the material's suitability for lithium-ion batteries by applying two different purification methods (the target being Carbon% of +99.9%):

(a) Standard HF (hydrofluoric acid) route (including ICP or XRF for the quantitative analysis of the remaining impurities); and
(b) Alkaline route (including ICP or XRF for the quantitative analysis of the remaining impurities).

A decision to proceed with the third phase above will follow the completion of the first and second phases. This work will enable Alba to refine its assessment of the possible applications of the graphite concentrate and specifically the suitability of Amitsoq material for the production of spherical graphite for LIB. Based on those results, the Company will make a determination regarding the implementation of a further phase of testwork targeting the production of spherical graphite, known as spheronization.

About Graphite

Graphite is a non-toxic, chemically inert material. Additional characteristics of graphite are its high electric and thermic conductivity, excellent lubricity and exceptional thermal shock resistance. These characteristics mean that graphite is widely used in a variety of industrial applications. However, graphite is also an essential component in certain critical technological advances that are at the forefront of the drive to reduce global CO_2 emissions. In particular, graphite is the anode material in lithium-ion batteries which are used to power electric vehicles and domestic electricity storage systems.

About High Purity Spherical Graphite for the Battery Metals Sector

According to Roskill, current global graphite demand is accounted for by the following product markets: electrodes (30%), refractories (18%), recarburising (12%), batteries (10%), lubricants (7%), foundries (6%), other (17%). However, Roskill have forecast that by 2029 batteries will account for 26% of the global demand for graphite. (*Roskill, "Battery and electric vehicle raw materials insights" presentation, London, 29 October 2019*).

To meet battery cell manufacturers' specifications for use as the anode in lithium-ion batteries, the natural flake graphite must be purified and shaped into small spheres, at which point the material is referred to a High Purity Spherical Graphite ("HPSG"). After shaping, the natural flake graphite is

purified by chemical leaching to remove impurities and raise the carbon content to above 99.95% C. HPSG is further processed by coating a single layer of carbon onto the spheres to produce spherical coated graphite. (*www.leadingedgematerials.com*)

According to Roskill, flake graphite concentrate typically commands a price of $650-850/t, whereas uncoated spherical graphite commands $3000-4000/t and coated spherical commands +$7000/t. (*Roskill presentation, 29 October 2019, as above*).

About ProGraphite

Headquartered in Germany, ProGraphite GmbH offers professional expertise in natural graphite and other carbon products, acquired during several decades of working in the graphite industry worldwide. ProGraphite's business activities include consulting, laboratory and mineralogical services. Additionally, due to its extensive experience in the graphite sector, ProGraphite supports customers and end users to evaluate the optimal graphite type and grade for their specific projects.

Glossary

ICP (inductively coupled plasma spectrometry): *ICP uses a plasma source to vaporise a sample so that it breaks down into its individual atoms or ions. This excites the sample so that the atoms or ions emit photons at specific frequencies/wavelengths. A detector measures the intensity of the emitted light and from this the quantity of each atom in the sample can be calculated.*

TGA (thermogravimetric analysis or thermal gravimetric analysis): *a method of thermal analysis in which the mass of a sample is measured over time as the temperature changes.*

XRD (x-ray diffraction): *a rapid analytical technique primarily used for phase identification of a crystalline material and can provide information on unit cell dimensions. The analysed material is finely ground, homogenized, and average bulk composition is determined.*

XRF (x-ray fluorescence): *an x-ray optical analysis technique which is based on spectroscopic detection of fluorescence of atoms which are excited by x-rays. It is an elemental analysis technique which is able to confirm the concentration of different elements in a sample.*

This announcement contains inside information for the purposes of Article 7 of EU Regulation 596/2014.

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Alba's Project and Investment Portfolio

Project (commodity)	Location	Ownership
Mining Projects		
Amitsoq (graphite)	Greenland	90%
Clogau (gold)	Wales	90%
Inglefield (copper, cobalt, gold)	Greenland	100%
Limerick (zinc-lead)	Ireland	100%
Melville Bay (iron ore)	Greenland	51%
TBS (ilmenite)	Greenland	100%
Oil & Gas Investments		
Brockham (oil)	England	5%
Horse Hill (oil)	England	11.765%

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