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

Amitsoq Graphite Update
Purification Test Work Confirms Suitability for Lithium-Ion Batteries

Alba Mineral Resources plc (AIM: ALBA) is pleased to announce the results of the latest phase of the independent test work programme undertaken on graphite material from the Company's high-grade Amitsoq graphite project in southern Greenland.

Key Points

- Purification test work on Amitsoq graphite confirms suitability of Amitsoq graphite for Lithium-Ion Batteries ("LIBs").

- All material prerequisites for LIBs have now been fulfilled:

  - Amitsoq graphite can be floated to grades above 95%.
  - Particle size distribution is suitable.
  - Bulk density is sufficiently high.
  - Alkaline purification achieves a carbon level of above 99.95%.

- Two purification methods applied. Standard alkaline purification achieves very low levels of impurities for LIBs. Acid purification also possible, subject to modification to intensify the purification process.

- LIBs are already the fastest growing market for flake graphite, with massive growth rates forecast for the next decade.

George Frangeskides, Alba's Executive Chairman, commented:

"Our test work programme at Pro Graphite in Germany, which has now concluded, has achieved our objectives. We can now move forward with our plans to define a large-tonnage deposit at Amitsoq in the knowledge that our graphite not only has exceptionally high average grades but is also battery grade material which can be sold into the electric vehicle sector, which is by far the largest growth market for graphite."

Details

As announced on 9 February 2021, the results of the previous round of test work conducted at Pro Graphite in Germany confirmed that:

- the graphite content of Amitsoq ore is very high, amongst the highest found in flake graphite deposits globally;

- it is possible to produce a >96% graphite concentrate from Amitsoq ore; and

- Amitsoq graphite appears to be suitable feed material for Lithium-Ion Batteries ("LIBs"), the fastest growing market for flake graphite globally.

The Company subsequently commissioned ProGraphite to undertake one further test work phase in order to assess the purification behaviour of Amitsoq graphite and confirm whether it is possible to lower the impurities in the concentrate to typical values for LIBs.

For the purification test work, two methods were investigated, acid purification and
alkaline purification. The target for both methods was to reach a minimum of 99.9% C (Carbon). The purification was done at standard test conditions which are usually applied to achieve suitable material for anode material for LIBs. The purification chemistry employed was a standard composition, meaning the potential exists for optimisation through adaptation to specific impurities.

The feed material for both purification tests was the final concentrate obtained from the prior flotation testwork.

Acid Purification

Acid purification was performed with hydrofluoric acid (HF) as the main acid. After the first round of purification, the % Carbon (loss of ignition or LOI) value was measured at 99.93%. Additionally, an inductively coupled plasma (ICP) analysis was conducted, which showed that, after two rounds of HF purification, the LOI value had increased to 99.98% and that all impurities were within acceptable levels except for the silicon (Si) content which at 60 ppm was slightly elevated for purified spherical graphite for LIBs, where the target value for Si is often between 30 and 50 ppm.

Pro Graphite have advised that with additional reaction time or increased temperature during the reaction or a combination of both, the Si content can probably be further reduced and that it would therefore be possible to reach standard specification for the usage of Amitsoq graphite in LIBs using acid-based purification.

Alkaline Purification

Alkaline purification was undertaken principally using Sodium Hydroxide (NaOH). The alkaline treatment was carried out using a standard procedure and was able to reach battery quality (99.95% LOI).

The ICP results showed that alkaline purification achieves better results than the acid purification method. The only two elements which are increased are Sodium (Na) and Nickel (Ni), both values being a result of the process, not originating from the material (Na from NaOH, Ni from the Ni crucible used). With process optimisation procedures, these values can be significantly reduced. In any event there is usually no specification limit on the Na value and the Ni content in the graphite is already low in the concentrate.

Pro Graphite have therefore concluded that the specifications for anode material for LIBs will be met with alkaline purification.

Table 1: Summary of resulting LOI values for purified Amitsoq graphite

method	% C (LOI)
acid purification step 1	99.93
acid purification step 2	99.98
alkaline purification	99.97

Conclusions

All principal objectives of this final round of testwork to assess the suitability of Amitsoq graphite for LIBs have been met. Notably, both the target value for the LOI content of 99.9%, and the typical specification for spherical graphite of 99.95%, have been reached.

The standard alkaline purification seems to attack the impurities more efficiently than the standard acid procedure. With the alkaline method, the required very low levels of impurities for LIBs can be reached with a standard procedure. For the HF acid method, the specifications for LIBs are also reachable, however some modification of the standard procedure would be required to intensify the purification process.

To sum up, with regard to the suitability of Amitsoq graphite for LIBs, all important prerequisites have been fulfilled:

(1) The graphite can be floated to grades above 95%.
(2) The particle size distribution is suitable.
(3) The bulk density is high enough.
(4) The alkaline purification reached a carbon level of above 99.95%.

LIBs are already the fastest growing market for flake graphite, with massive growth rates forecast for the next decade.

Based on the results obtained so far, Pro Graphite's recommendation for the final treatment of the concentrate would be as follows:

(a) The concentrate should be screened at 150 microns, with the flakes obtained being sold separately.
(b) The remaining material (-150 micron, approx. 85% of the concentrate mass) looks like a typical grade -195 micron, which could be used for

spherical graphite production.

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

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. Spherical graphite commands much a higher price than selling a flake graphite concentrate.

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.

This announcement contains inside information for the purposes of the UK Market Abuse Regulation and the Directors of the Company are responsible for the release of this announcement.

Forward Looking Statements

This announcement contains forward-looking statements relating to expected or anticipated future events and anticipated results that are forward-looking in nature and, as a result, are subject to certain risks and uncertainties, such as general economic, market and business conditions, competition for qualified staff, the regulatory process and actions, technical issues, new legislation, uncertainties resulting from potential delays or changes in plans, uncertainties resulting from working in a new political jurisdiction, uncertainties regarding the results of exploration, uncertainties regarding the timing and granting of prospecting rights, uncertainties regarding the timing and granting of regulatory and other third party consents and approvals, uncertainties regarding the Company's or any third party's ability to execute and implement future plans, and the occurrence of unexpected events.

Without prejudice to the generality of the foregoing, uncertainties also exist in connection with the ongoing Coronavirus (COVID-19) pandemic which may result in

further lockdown measures and restrictions being imposed by Governments and other competent regulatory bodies and agencies from time to time in response to the pandemic, which measures and restrictions may prevent or inhibit the Company from executing its work activities according to the timelines set out in this announcement or indeed from executing its work activities at all. The Coronavirus (COVID-19) pandemic may also affect the Company's ability to execute its work activities due to personnel and contractors testing positive for COVID-19 or otherwise being required to self-isolate from time to time.

Actual results achieved may vary from the information provided herein as a result of numerous known and unknown risks and uncertainties and other factors.

Competent Person Declaration

The information in this release that relates to Exploration Results has been reviewed by Mr Mark Austin. Mr Austin is a member of SACNASP (Reg. No. 400235/06), Fellow of The Geological Society and Fellow of the Geological Society of South Africa. He has a B.Sc. Honours in Geology with 38 years' experience.

Mark Austin has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration targets, Exploration Results, Mineral Resources and Ore Reserves', also known as the JORC Code. The JORC code is a national reporting organisation that is aligned with CRIRSCO. Mr Austin consents to the inclusion in the announcement of the matters based on his information in the form and context in which they appear.

Glossary

LOI: Loss on ignition (LOI) is a test used in inorganic analytical chemistry and soil science, particularly in the analysis of minerals and the chemical makeup of soil. It consists of strongly heating ("igniting") a sample of the material at a specified temperature, allowing volatile substances to escape, until its mass ceases to change.

For further information, please contact:

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Alba's Project and Investment Portfolio

Project (commodity)	Location	Ownership
Mining Projects		
Amitsoq (graphite)	Greenland	90%

Clogau (gold)	Wales	90%
Gwynfynydd (gold)	Wales	100%
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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