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

Amitsoq Processing Testwork Achieves
High-Grade, Premium-Flake Product

Alba Mineral Resources plc (AIM: ALBA), the diversified mineral exploration and development company, is pleased to announce that it has completed a Phase 2 metallurgical testwork programme in respect of the Company's exceptionally high-grade Amitsoq graphite project in southern Greenland. This programme has confirmed that Amitsoq graphite is amenable to the production of a high-grade refined product and that a significant proportion of the flake graphite in the product comprises larger-sized flake graphite which attracts premium prices.

Highlights

- **Building on prior results, this round of testing confirms that a saleable (97.3% TGC) product can be produced from Amitsoq graphite.**
- **The Phase 2 testwork programme has been designed to maximise the level of high-value flake graphite in the refined product.**
- **Image analysis shows that 36% of the refined product consists of large, jumbo and super jumbo flake sizes, which attract a premium price in the graphite market.**
- **This is a very positive and potentially very significant result, as it indicates that higher-value flake graphite will be among the products that may be produced from Amitsoq graphite, which will greatly assist in the development of a positive technical economic model for the project.**
- **Alba will now move on to the design of a further phase of refining testwork.**

George Frangeskides, Alba Executive Chairman, commented: *"This completed Phase 2 test programme for our exceptionally high-grade graphite project at Amitsoq confirms two very important things. Firstly, that a saleable, 97.3% product can be produced. And secondly, that in that refined product is included a significant proportion of the higher-value flake graphite that is sought-after for a range of industrial uses, which still underpin the majority of the demand for natural flake graphite globally. This will be very important for the future economics of the Amitsoq Project."*

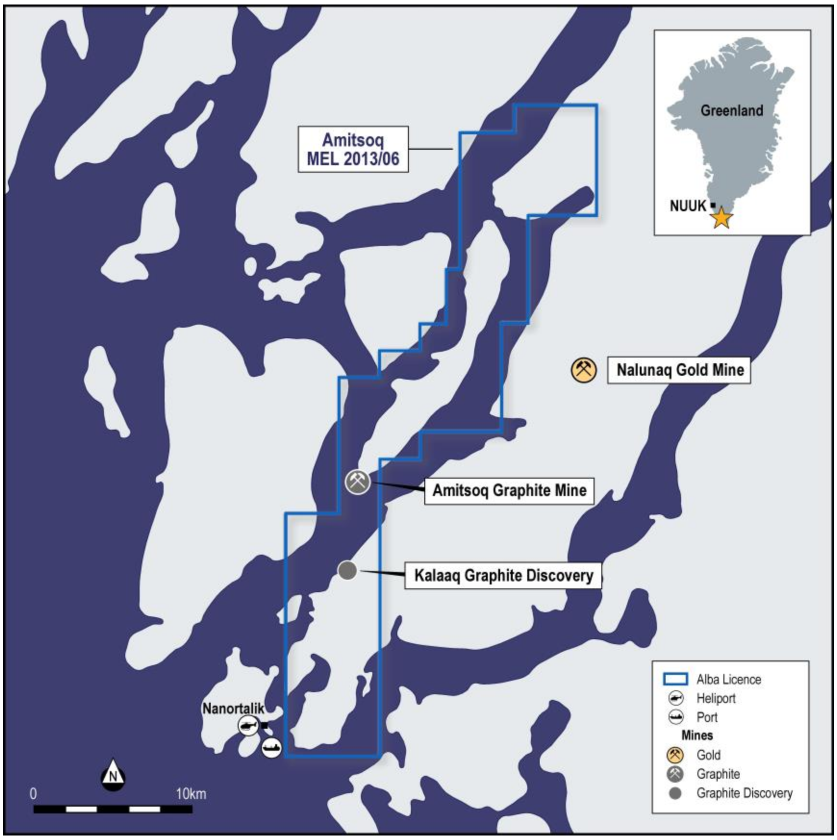
"We will build on this latest phase of work with further refining testwork, and also to assess the amenability of Amitsoq graphite to produce a very high purity product suitable for the battery metals sector."

"This completed work on one of our key assets provides us with great confidence as we move into 2020."

Introduction

Alba contracted process metallurgical consultants Southern Cross Mining Limited ("SCM") to design and supervise a mineralogy and process study on the Amitsoq and Kalaaq graphite deposits in southern Greenland and to report on the findings. The primary objective of the study was to recover a high purity graphite product with a focus on preserving graphite flake size. The testwork included the following technical components:

1) Microscopic analysis of resin-mounted samples and flotation feed, concentrate and tailings.
2) Bench-scale batch rougher and cleaner flotation tests.
3) Hydrometallurgical refining of the flotation final concentrate.



The Phase 2 programme was carried out on 25 kg of channel samples taken from the Upper Graphite Bed ("UBA") and Lower Graphite Bed ("LBA") at Amitsoq, as well as from the Lower Graphite Bed at Kalaaq ("LBK"). See **Figure 1**, left, for the Project location.

The samples were submitted to mineralogy and petrology specialists Petrolab (Cornwall, UK), for crushing and preparation of resin-impregnated blocks and slides, which were then submitted for petrographic analysis to MSA Global, a specialist South African firm.

The balance of the channel samples were submitted to Geolabs Global Limited, a metallurgical and mineralogical laboratory in South Africa, for beneficiation and refining. Bench-scale flotation trials were conducted in conjunction with stereomicroscopic analysis of flotation product streams. The final flotation concentrate was then submitted for acid leaching as a proof of concept for hydrometallurgical refining to reach the final Total Graphitic Carbon ("TGC") grade.

The main objectives of this programme were to maximise the final product grade and flake size, and to identify a possible process flowsheet for coarse-flake graphite recovery. The programme was split into four phases: petrographic analysis; flotation tests; purification of final concentrate; and determination of flake-size distribution in final concentrate.

First Stage Testwork: Petrographic Analysis

Identification of spatial variations in graphite and gangue mineral characteristics was achieved via petrographic analysis of resin-mounted blocks and thin sections. Reflective and transmissive light microscopy were used to estimate grind sizes required for initial flotation trials based on the observed graphite flake sizes and degree of gangue mineral interlocking. A brief summary of the findings is set out in Table 1 below.

Table 1: Summary of petrographic analysis of resin-mounted blocks and thin sections

Sample Description	Max flake length (µm)	Ave. Flake Size (µm)	Gangue Mineral Association
Lower Bed, Kalaaq	820	278	Often interlocking
Upper Bed, Amitsoq	1230	440	Very minor interlocking
Lower Bed, Amitsoq	1270	472	Very minor interlocking
Lower Bed, Amitsoq	1550	513	Minor interlocking

This testwork programme was focused on the Amitsoq material. Kalaaq material will be the subject of a future testwork programme.

Second Stage Testwork: Flotation Tests

To concentrate coarse-flake graphite, graphite from both the upper and lower beds at Amitsoq was subjected to a series of flotation sighter tests to scope potential process flowsheets suitable for producing a final graphite product. Based on stereoscopic observations, mass distribution and total graphitic carbon ("TGC") assay data, a combination of flotation, re-crushing and leaching steps were selected. Collectively, these steps can be summarised in a conceptual process flowsheet as follows:

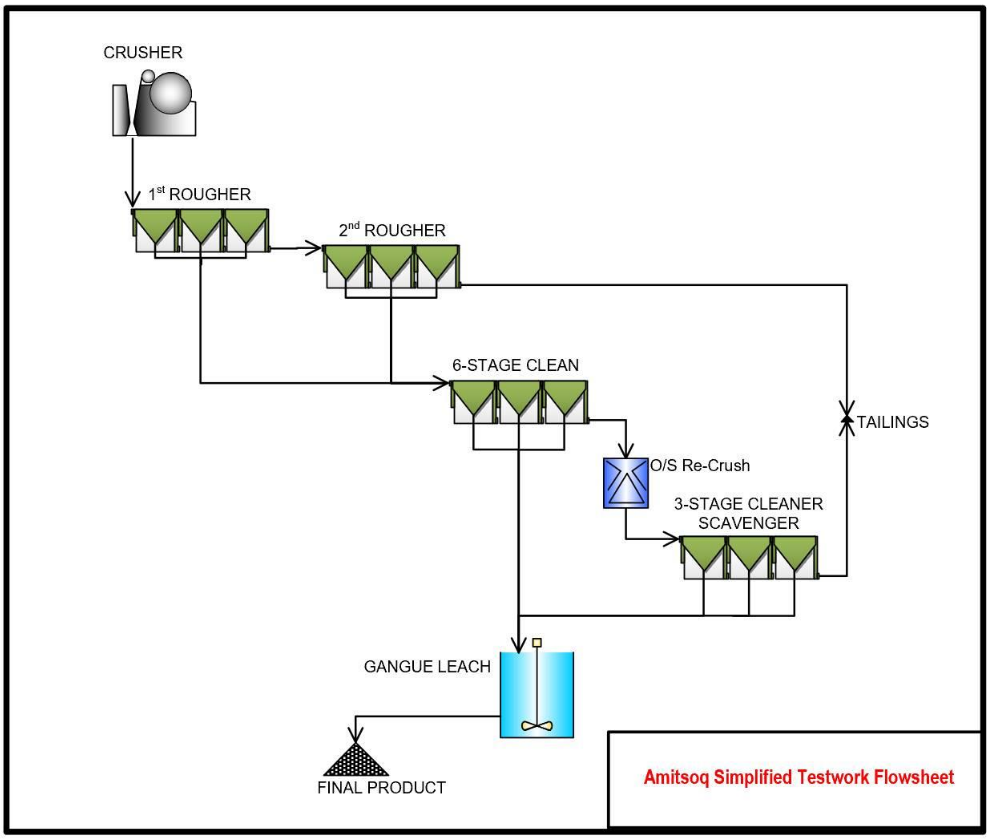


Figure 2: Amitsoq simplified flowsheet

Rougher flotation was used to generate a crude concentrate with several subsequent stages of cleaner and recleaner flotation to selectively recover liberated graphite. Stereomicroscopy gave insight into the degree of liberation, approximate mineral abundance and mineral association to guide subsequent cleaning and size reduction steps. Final refining by leaching was employed to meet the target TGC grade without overgrinding of coarse graphite. The main findings of this section of the work are as follows:

(a) Flotation parameters were selected from petrographic observations and yielded the results in Table 2 below.

Table 2: Two-Stage Rougher Flotation Results

Location	**Upper Bed Amitsoq ("UBA")**	**Lower Bed Amitsoq ("LBA")**	**Lower Bed Kalaaq ("LBK")**
pH	9	9	9
Initial Crush Size (mm)	1.7	1.7	1
First Rougher Recovery	85.8%	81.4%	82.8%
Second Crush Size (mm)	0.6	N/A	N/A
Total Recovery	98.4%	85.6%	82.8%
Total Mass Rejection	27.8%	47.1%	40.9%

(b) The best cleaning results were obtained by six stages of cleaning, followed by crushing and recleaning the cleaner tailings. Results for this method are summarised in Table 3.

Table 3: Cleaner and Recleaner Results

pH	9.5
Cleaner Feed Size (P_{80}, mm)	0.71
Cleaner Recovery	58.6%
Re-Cleaner Feed Size (P_{80}, mm)	0.3
Total Recovery	85.3%
Final Flotation Conc. grade	53.9%

Third Stage Testwork: Purification of Final Concentrate

Purification of the final flotation concentrate was conducted using a two-stage acid leach to remove gangue material. The main advantage of hydrometallurgical refining is that chemical separation of gangue does not require complete physical departure of graphite from gangue. The final graphite grade achieved after leaching was 97.3% TGC, as listed in Table 4 below.

Table 4: Gangue Leach Results

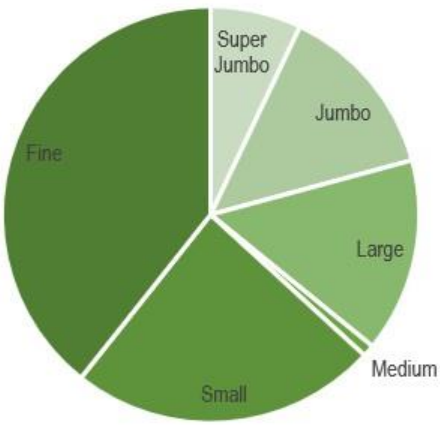
1st Stage (HF) Mass Loss	33.2%
1st Stage (HF) TGC Grade	82.1%
2nd Stage (HF) Mass Loss	8.1%
2nd Stage (HF) TGC grade	97.3%

Fourth Stage Testwork: Determination of Flake-Size Distribution

In order to ascertain the flake-size distribution of the final concentrate, a combination of image analysis on the coarse fraction suspended in acetone and screening on the fine fraction was selected. The results are set out in Table 5 and Figure 3 below. These results indicate that 36% of the flake size is in the Large, Jumbo and Super-Jumbo categories, which attract premium prices in the graphite market.

Table 5 and Figure 3 (below) Results of flake-size distribution analysis on final concentrate

FLAKE LENGTH IMAGE ANALYSIS			
Category	Min. Size	Mass %	Cum. Mass%
Super Jumbo	500	7%	7%
Jumbo	300	14%	21%
Large	180	15%	36%
Medium	150	1%	37%
Small	75	24%	61%
Fine	-75	39%	100%



The Graphite Market: Outlook, Products and Pricing

To understand the significance of these Phase 2 test results, it is important to put them in the context of the global graphite market and the demand for different graphite products.

Forms of graphite

Graphite comes in different forms and specifications. The two main forms are natural graphite, which is sourced directly from mines, and synthetic graphite, which is made from petroleum coke. In turn, there are three main types of natural graphite: flake (>85% carbon), amorphous (60-85% carbon) and vein (>90% carbon).

Size is also an important factor when it comes to natural graphite. Flake size comes in the following categories: Super Jumbo (+500 microns), Jumbo (+300 microns), Large (+180 microns), Medium (+150 microns) and Small or Fine (-150 microns). For industrial uses, Jumbo and Large flake are preferred, such as in blast furnace steel making, castings and lubricants. In nuclear applications, Super Jumbo flakes are used (*Argus Media publication, Getting Graphite Prices Right, 2019*).

However, flake size is less relevant for high purity battery grade applications as the graphite is micronized to less than 30 micron prior to shaping and purification. As a result, typically only lower-cost small and medium flake sizes or fines are used in the production of spherical graphite for battery production (*Argus Media, as above*).

Production of marketable flake graphite products

Mined graphite ore is first beneficiated into graphite concentrate (typically 94-97% TGC) and then sized and screened into various sizes. Flake prices are then determined based on a range of factors such as graphite content, flake size and impurity levels. Large, Jumbo and Super Jumbo flake with a higher purity (94% or higher carbon content) command premium prices. Small or fine flake graphite is reported to currently command a price of around US$400 per tonne, Large flake US$1000 per tonne, Jumbo flake US$1400 per tonne and Super Jumbo flake US$2000 per tonne (*per www.stockhead.com.au, 16 September 2019, quoting Roskill*).

The fact that Large, Jumbo and Super Jumbo flake can attract significantly higher prices, and that 36% of the flake within the refined product produced from Amitsoq in the current test programme is made up of those higher-value flake categories, is considered of potentially real significance for the future economics of the Amitsoq project.

Production of 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*). Given the significant premium attaching to spherical graphite products, the Company intends to include in a future work stream testwork to assess the amenability of Amitsoq and Kalaaq graphite to produce HPSG.

Recommendations for Further Work

Recommendations for further metallurgical process work and economic studies include the following:

(1) Tailoring of process testwork to meet the requirements of potential concentrate offtake customers and current market demands.
(2) Economic cost-benefit analysis between flake size, final float concentrate grade and refining costs.
(3) Separate testwork stream to ascertain the amenability of Amitsoq and Kalaaq graphite for the production of spherical graphite.

The information contained within this announcement is deemed by the Company to constitute inside information under the Market Abuse Regulation (EU) No. 596/2014.

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 Company's or any third party's ability to execute and implement future plans, and the occurrence of unexpected events. 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's Declaration

Michael Nott, who has over 45 years' relevant experience in the geological, mining, minerals, waste disposal, industrial minerals, oil, drilling, mineral planning and quarrying industries, has approved the technical information in this announcement.

Mr Nott holds a BSc. degree in Geology from Queen Mary, University of London, a MSc. Degree in Mineral Production Management from the Royal School of Mines, Imperial College, University of London, The Diploma of Imperial College in Mineral Production

Management and is a Chartered Engineer. He is a Fellow of the Institute of Materials, Minerals and Mining, a Fellow of the Minerals Engineering Society, a Fellow of the Institute of Quarrying and an Associate of the Royal School of Mines Association.

Glossary

Acid leaching	Metallurgical process for dissolution of metals by means of acid solution.
Bench-scale	Testing of materials, methods, or chemical processes on a small scale.
Beneficiation	Any process that improves (benefits) the economic value of the ore by removing the gangue minerals, which results in a higher grade product (concentrate) and a waste stream (tailings).
Concentrate	Ore concentrate, dressed ore or simply concentrate is the product generally produced by metal ore mines. The raw ore is usually ground finely in various comminution operations (ie the reduction of solid materials from one average particle size to a smaller average particle size by crushing, grinding etc) and gangue (waste) is removed, thus concentrating the metal component.
Flotation	Method used to separate and concentrate ores by altering their surfaces to a hydrophobic or hydrophilic condition - that is, the surfaces are either repelled or attracted by water.
Gangue	The commercially worthless material that surrounds, or is closely mixed with, a wanted mineral in an ore deposit
Hydrometallurgical refining	Extractive metallurgy is the practice of removing valuable metals from an ore and refining the extracted raw metals into a purer form. Hydrometallurgy uses aqueous solutions to extract metals from ores (leaching).
Sighter test	Sighter testwork establishes if the desired metals can be extracted from the ore easily or not.
Stereomicroscopy	The stereo, stereoscopic or dissecting microscope is an optical microscope variant designed for low magnification observation of a sample, typically using light reflected from the surface of an object rather than transmitted through it.
Total Graphitic Carbon or TGC	Carbon in rocks may be reported as total carbon (organic carbon + carbon in carbonate minerals + carbon as graphite) or as total graphitic carbon (total carbon – (organic + carbonate carbon). Therefore, when total graphitic carbon (TGC) is to be reported, organic carbon and carbon in carbonate minerals such as calcite should be removed before analysing TGC.

For further information, please contact:

Alba Mineral Resources plc +44 20 3907 4297
George Frangeskides, Executive Chairman

Cairn Financial Advisers LLP (Nomad) +44 20 7213 0880
James Caithie / Liam
Murray

First Equity Limited (Broker) +44 20 7374 2212
Jason Robertson

Yellow Jersey PR (Financial PR/ IR) +44 20 3004 9512
Sarah Hollins/Harriet Jackson/Henry Wilkinson
alba@yellowjerseypr.com

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%