

## **ASX ANNOUNCEMENT**

27 January 2017

## **QUARTERLY ACTIVITIES REPORT – DECEMBER 2016**



## HIGHLIGHTS

- CONSOLIDATION OF PROJECT OWNERSHIP
- POSITIVE INITIAL LITHIUM-ION BATTERY SUITABILITY TESTS RESULTS
- POSITIVE THERMAL PURIFICATION TEST RESULTS
- SUBMISSION OF MINING LEASE APPLICATION
- SUBMISSION OF ENVIRONMENTAL AUTHORITY APPLICATION
- UPGRADE IN MINERAL RESOURCE ESTIMATE
- COMMENCEMENT OF SMALL SCALE PILOT PLANT TEST PROGRAM
- MARKET VISITS TO SOUTH KOREA, TAIWAN, JAPAN AND USA

**Graphitecorp Limited (ASX: GRA)** ("Graphitecorp" or "the Company") is pleased to provide the following Quarterly Activities Report for the December 2016 Quarter.

#### **OWNERSHIP**

During the quarter Graphitecorp and its joint venture partner Washington H. Soul Pattinson and Company Limited (WHSP, ASX: SOL) merged WHSP's interest in the Mount Dromedary Graphite Project into Graphitecorp in return for equity in Graphitecorp. This, combined with a further investment of \$300,000 via private placement, resulted in WHSP emerging with an 18.73% shareholding in Graphitecorp and the simplification of the ownership structure for the Project.

Graphitecorp appointed Mr Robert Cooper (as representative for WHSP) to the Board and appointed Pitt Capital Partners (PCP, subsidiary of WHSP) as financial advisor for advancing the project and for potential control transactions. Mr Dean Price, Executive Director of PCP, was appointed alternate director for Mr Cooper. These ownership, board and advisory changes has strengthened the Board's collective experience in project development and financing, capital markets, mining and mineral processing, and added further specific knowledge and experience in the Mount Isa and Cloncurry mining district.



## THERMAL PURIFICATION AND LITHIUM-ION BATTERY TESTWORK

During the quarter Graphitecorp completed thermal purification and initial lithium-ion battery (LIB) physical and electrochemical suitability tests on concentrate produced from Mount Dromedary deposit to advance our understanding of the potential suitability of our concentrate for the battery market.

Thermal purification tests confirmed that the Mount Dromedary graphite concentrate can be purified to 99.999%.

Lithium-ion battery coin cells were manufactured using both the base concentrate (without any thermal or chemical purification) and with the thermally purified concentrate.

Physical examination of the powders and electrochemical tests on the LIB cells were performed and the results showed that the materials have good purity, good electrochemistry with high reversible capacity and, most importantly, appear to be well suited for LIB applications, including high end automotive applications.



Thermal purification, battery cell construction and electrochemical testing was performed during the quarter by independent expert companies based in the USA.

Results from the 250g sample of -200 mesh natural flake graphite concentrate were as follows:

Flake Size (mesh)	Particle Size (mm)	Tap Density (g/cc)	LOI - Ash Content (% Carbon)	BET SA (Grnd - 635) (m2/g)	Rev Capacity (mAh/g)
100X200	0.150 - 0.075	0.48	97.8	6.55	366
200X400	0.075 - 0.037	0.45	97.53	6.01	375
400X635	0.037 - 0.020	0.41	96.95	6.95	371
-635	-0.02	0.4	93.99	6.33	351



Based on these results the company is scoping the next phase of development work relating to supply of high-purity graphite products for LIB applications and is continuing discussions with potential customers and intermediaries.

## MOUNT DROMEDARY PROJECT UPDATE

#### APPLICATION FOR MINING LEASE AND ENVIRONMENTAL AUTHORITY

During the quarter Graphitecorp submitted an application for a mining lease with the Queensland Department of Natural Resources and Mines for the Mount Dromedary Graphite Project. Contemporaneously, the company has submitted its application for an environmental authority for the project with the Queensland Department of Environment and Heritage Protection.

The applications incorporate a mining and milling operation for the Mount Dromedary Graphite Project with production of up to 50,000tpa of graphite concentrate. The area of the mining lease is approximately 1,132 ha and has been selected to capture the Company's graphite resource and allow for appropriate infrastructure.

In January, the Queensland Department of Environment and Heritage Protection advised that our application for environmental authority has met all legislative requirements under Chapter 5, Division 3 of the EP Act and as such the application has moved to the information stage where the department can seek further information needed to assess the application.

Water sampling and testing continues to be undertaken on a periodic basis from dedicated ground water monitoring bores that have been installed around the proposed mining area to generate a baseline for water quality ahead of any mining operations commencing.

Work has also commenced on native title, cultural heritage and landholder agreements which are integral with the process of approval for mining lease and environmental authority.

## UPDATED INDEPENDENT MINERAL RESOURCE ESTIMATE

During the quarter RungePincockMinarco (RPM) provided an updated independent Mineral Resource Estimate for the Mount Dromedary Graphite Project. The update confirmed a 125% increase in the Project's combined Measured and Indicated JORC Mineral Resource Estimate to 1.316 Million tonnes of contained graphite. This represents a 66% increase in the total JORC Mineral Resource Estimate to 1.908 Million tonnes of contained graphite. This resource estimate is associated with less than half the mapped deposit surface area but importantly is estimated to contain sufficient high-grade resource to support production scenarios being modelled, while allowing for significant further scalability.



Refer to the ASX announcement on the updated independent JORC Mineral Resource Estimate dated 20 October 2016 for full details and disclosures.

The following table summarises the Total Mineral Resource estimate prepared by RPM for the project to date. It is important to note that this Mineral Resource estimate is based on exploration drilling and test results covering less than 50% of the total mapped prospect outcrop area.

		Total Mineral Resource			
Domain	Туре	Tonnage	TGC	ТС	Cont. Graphite
		Mt	%	%	kt
High Grade (>10% TGC)	Weathered	1.3	17.5	18.8	227
	Primary	7.2	18.6	19.5	1,335
	Sub-Total	8.5	18.4	19.4	1,562
Medium Grade (4 to 10% TGC)	Weathered	0.9	5.7	6.7	51
	Primary	5.0	6.0	6.6	295
	Sub-Total	5.8	5.9	6.6	346
	Total	14.3	13.3	14.2	1,908

# Table: Mineral Resource Estimate (4% Total Graphitic Carbon Cut-off)

Note:

1. Totals may differ due to rounding, Mineral Resources reported on a dry in-situ basis.

2. Flake sizes for the Mineral Resource is tabulated below.

- 3. The Statement of Estimates of Mineral Resources has been compiled under the supervision of Mr. Robert Dennis who is a full-time employee of RPM and a Member of the AusIMM and AIG. Mr. Dennis has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he has undertaken to gualify as a Competent Person as defined in the JORC Code (2012).
- 4. All Mineral Resources figures reported in the table above represent estimates at 21st October, 2016. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.
- 5. Mineral Resources are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The Joint Ore Reserves Committee Code JORC 2012 Edition).
- 6. Subsequently Graphitecorp has progressed detailed metallurgical testwork including production of a large sample of product for customer testing. Talks with potential customers have commenced. The Competent Person is of the opinion that because of these activities which are in progress, but are confidential in detail and product specification, there is a reasonable expectation a saleable product and customer will be secured.
- 7. Reporting cut-off grade selected based on the results of the Mount Dromedary Graphite Project Scoping Study conducted by RPM during August 2016. The Scoping Study indicated that a break-even cut-off grade for the Mount Dromedary Mineral Resource is 4% TGC, assuming a product (very fine) price of \$US800/t, a 95% TGC average concentrate grade and an open pit mining method.

8. TGC = total graphitic carbon.



# Table: Graphitic Schist Flake Size Distribution (>10% Total Graphitic Carbon Cut-off)

Classification	Sieve Size (µm)	% in Interval	Cumulative %
Jumbo	>300	24.5	24.5
Large	180-300	18.9	43.4
Medium	150-180	6.8	50.2
Fine	75-150	23.9	74.1
Very Fine	<75	25.9	100.0

# COMMENCEMENT OF SMALL SCALE PILOT PLANT TEST PROGRAM

During the quarter Graphitecorp commenced a small-scale pilot plant test program designed to further improve the metallurgical and process knowledge and process plant design. A wide range of milling, flotation, reagent, equipment and product types will be tested and compared to determine what will produce the best results with our specific ore. This program is taking place overseas at a location where extensive natural graphite processing experience and expertise exists. The program will involve the processing of approximately 7 ton of graphite ore and is expected to be completed at the end of February 2017.

## MARKET RESEARCH AND PREMARKETING

Graphitecorp continued market research and meetings with potential customers during the quarter with visits to South Korea, Taiwan, Japan and USA.

This research and meetings have confirmed a bimodal market in natural graphite with flat demand for general graphite concentrate and high demand for advanced graphite materials for the lithium-ion battery market.

The flat demand for general graphite concentrate is linked to demand for steel as the most significant use of general graphite concentrate is in refractories for steel making furnaces and as a carbon raiser in the steel itself and cast iron.

The high demand for advanced graphite materials for the lithium-ion battery market is being driven by the high demand growth for electric vehicles and energy storage. From our meetings, it was clear electric vehicles and energy storage markets are in the very early stages of what will be major growth markets and there is significant development and activity in USA, Asia and Europe taking place. At present this market represents approximately 10% of the total natural graphite market in terms of volume but close to 50% of the value of the market in terms of revenue. General graphite concentrate sells from USD500 to USD2,500 per ton depending on grade and particle size distribution whereas advanced graphite materials for the lithium-ion battery market sell from USD8,000 to USD20,000 per ton.

Both market trends are expected to continue for the medium term.



What has also become clear is the need for alternative suppliers to traditional sources given over 90% of the lithium-ion batteries manufactured today are made with graphite originating from china and value added in either china, Japan or Korea.

Graphitecorp has engaged with several major participants in the international market, including potential customers and development partners. This has helped inform about market and product requirements and established some important initial relationships to assist with the initial testing our first product samples.

## SIGNIFICANT ASX ANNOUNCEMENTS

The following significant announcements were lodged with ASX during the December Quarter:

- Lithium-ion Battery Physical & E-Chemical Suitability Tests (20 October)
- Upgraded Independent JORC Mineral Resource Estimate (20 October)
- Chairman and Executive Director Address to 2016 AGM (21 October)
- Results of Annual General Meeting (21 October)
- Becoming a substantial shareholder from (ASX:SOL) (27 October)
- New Director and Alternate Appointments (31 October)
- Application submitted for Mining Lease and EA (19 December)

## **TENEMENT LIST**

No change to tenement list in the quarter.

Tenement	Permit Holder	Grant date	Graphitecorp Rights	Expiry date
EPM 26025	Exco Resources Limited	14/12/2015	80% Graphite Rights (Sub-Blocks Normanton 3123 D, J, N, O and S)	13/12/2020
EPM 17323	MD South Tenements Pty Ltd (Subsidiary of Graphitecorp Limited)	20/10/2010	100%	19/10/2021
EPM 17246	MD South Tenements Pty Ltd (Subsidiary of Graphitecorp Limited)	26/10/2010	100%	25/10/2018



#### FOR FURTHER INFORMATION

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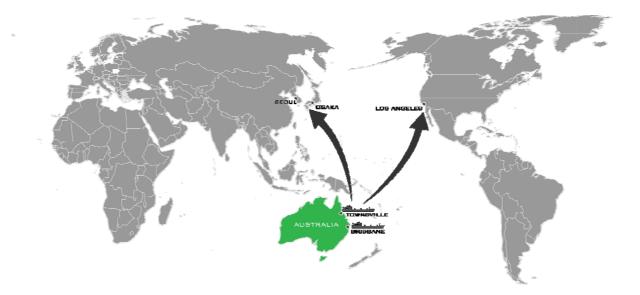
## **ABOUT GRAPHITECORP**

**Graphitecorp** (ASX: GRA) is a developer of one of the highest-grade flake graphite deposits in the world, located in Australia, and referred to as the Mount Dromedary Project.

Given strong project fundamentals and positive demand outlook for specialised graphite products, Graphitecorp is progressing a feasibility study to assess the economic opportunity of establishing a business to mine, process, manufacture and market high quality graphite products into Asian and other global markets.

Graphitecorp aims to become a leading alternative, competitive, secure and sustainable graphite supplier in the Asia-Pacific region.

For more information on Graphitecorp please visit our website at <u>www.graphitecorp.com.au</u>



Containerised Ocean Transport Possibilities: Port of Brisbane and/or Townsville to Potential Asian and West Coast Graphite Users