

# Archer Exploration Limited - Exceptional Bulk Flotation Results For Campoona Graphite

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Adelaide, Australia (ABN Newswire) - [Archer Exploration Ltd.](#) (ASX:AXE) ("Archer") is pleased to provide the following metallurgical update for the Campoona Graphite Project.

## CAMPOONA METALLURGY

Since October 2012 the Company has undertaken rigorous metallurgical bench-scale testing of representative samples of Campoona graphite. A total of 35 individual bench-scale tests have been completed testing samples across the length, breadth and depth of the Campoona Shaft deposit. The bench-scale assessment testing of the Campoona Shaft ore body is now complete.

The testing was carried out on graphite ore provided by three diamond drill holes evenly spaced along the length of the elongate deposit and intersecting the full depth of the ore body down to approximately 120 metres depth. Quarter-core composites were assembled to represent two ore types, the Upper BOCO extending down to approximately 60 metres depth, and a lower zone of fresher graphitic schist (Lower BOCO) further extending down to 120 metres depth. In addition, samples Upper Claystone representing the uppermost kaolin-rich horizon of the deposit were taken from sumps dug for the metallurgical diamond drill holes. Combined these samples provided a comprehensive representation of the ore for metallurgical testing.

Mechanical cell flotation was selected as the most effective method for graphite extraction and concentration. This is a long-established technique widely used in the graphite industry providing a simple but robust processing method. Although a strict methodology was applied for ore processing in the bench-scale testing, variations in grinding methods for clay removal and for cell operation has allowed each ore type to be processed uniquely. The weathered nature of much of the ore (Upper Claystone and Upper BOCO) meant that primary ball mill grinding was minimal.

Campoona graphite ores host both large and medium sized flake. Staged wet-grinding released graphite flake however the percentages of market grade flake (94 - 97% C) were low. Much of the larger flake is primarily composed of finer flakes of graphite held together by quartz as an intercalated veneer.

The testing showed that Campoona ores across all three geologic horizons could deliver high quality fine concentrate at -75micron sizing from simple mechanical cell flotation to levels in consistently in excess of excess of 98% C. Such grades for -75micron graphite are rare, if not unique, to the graphite industry.

Figure 3 in link below summarises the metallurgical testing. All three geologic horizons give >95% - >99% C concentrates using only cell flotation and all three horizons have overall recoveries >90% for the -75 micron fraction. Further improvements in grade and recovery are expected to give concentrates consistently into the realm of >98% - 100% C prior to final cleaning.

Following bench-scale testing Archer moved to important bulk flotation testing during July 2013 on larger ore samples. The bulk flotation testing has delivered ultra pure concentrates grading 99.4% C. These results are considered as outstanding. Further grade improvements are expected once these concentrates are lightly acid cleaned and these results will be reported when they come to hand.

It is anticipated that during August/September several kilograms of >99.9% C concentrates can be produced which will then be introduced to specific market segments for their assessment. It is expected that the marketing efforts will result in pre-commitments from prospective buyers.

The fact that ultra pure >99% C concentrates can be produced solely by bulk mechanical cell flotation is exceptionally rare by world standards. Achieving grades of >99% C at recoveries of ~90% solely using mechanical cell flotation make Campoona a truly unique graphite deposit.

It is usual when moving from bench-scale to bulk flotation that there is a drop-off in performance both in terms of the grade of the concentrates and the recovery of graphite. This has not been the case with Campoona ores where bulk floats have exceeded bench-scale results. The outstanding bulk flotation results

achieved highlights the exceptional natural liberation of Campoona graphite ores.

The metallurgical testing demonstrates that ultra pure fine graphite concentrates can be readily produced from the all three geologic horizons using traditional and simple processing methods. The same processing method (and equipment) applies to all zones in the ore body. The ore is easily crushed with early and low-cost liberation of graphite. Exceptionally high purity levels can be achieved for the graphite product - levels which come with higher market pricing.

The campaign of metallurgical bench flotation trials demonstrates that the combination of a high-performing fine graphite flotation and simple acid treatment to remove trace contaminants can be reasonably expected to deliver graphite concentrates reporting >99.5% C and perhaps as high as 99.9%C.

The testing points to a clear, low-risk, early-entry option producing high value graphite.

## **NEXT STEPS**

1. Bulk flotation - over the next 6 weeks up to 10 kilograms of ultra pure concentrates will be produced through further bulk flotation tests. These concentrates will then be introduced to specific market segments for assessment. These initial marketing efforts may result in pre-commitments from prospective buyers.

2. Mining Lease Proposal and PEPR - Archer has initiated key activities as part of a Scoping Study to assess potential mine development options for the Campoona Project and commenced the project approvals process. Golder Associates won the tender to manage all studies needed to support a Mining Lease Proposal and a Programme of Environmental Protection and Rehabilitation. The current schedule aims to have those documents to Government for approval in mid calendar 2014

Archer has the cash in bank to fully fund the studies.

To view diagrams and figures, please visit:

<http://media.abnnewswire.net/media/en/docs/ASX-AXE-748819.pdf>

## **About Archer Exploration Limited:**

[Archer Exploration Ltd.](#) (ASX:AXE) is a graphite, magnesite, copper, gold and manganese explorer focused on the discovery of world-class ore deposits.

The company has carefully acquired a portfolio of projects, covering an area in excess of 5300 km<sup>2</sup>, in the highly prospective Gawler Craton and Adelaide Fold Belt regions of South Australia. All projects are 100% owned by the Company.

Archer also has earned the right to 100% of minerals other than uranium on EL4693 Wildhorse Plain located near Cleve on Eyre Peninsula.

The Company's flagship Campoona and Sugarloaf graphite deposits occur in the Cleve district where the Company has tenure of 933km<sup>2</sup> in the emerging graphite province.

[Archer Exploration Ltd.](#) has an experienced board and management team and has the ability to maximise the potential of the company's world-class projects.

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