



VOLT

RESOURCES

ASX ANNOUNCEMENT

By e-lodgement

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POSITIVE TESTWORK RESULTS FOR NAMANGALE EXPANDABLE GRAPHITE

HIGHLIGHTS

- Testwork on Namangale North concentrate highlighted its suitability for producing expandable graphite
- Enhances the scalability and commercial viability of the entire Namangale deposit as a primary expandable graphite supplier
- Excellent expansion results for fine flake and powder

INTRODUCTION

Volt Resources Limited (**ASX: VRC**), (“**Volt**” or the “**Company**”) is pleased to report that ongoing testwork on Namangale North graphite concentrate by the German metallurgical laboratory, which previously reviewed Namangale South¹ samples, confirms its suitability for making expandable graphite for a wide range of downstream applications. This is timely as it follows on from the four recent offtake and cooperation agreements signed with Chinese groups which are primarily focused on expandable graphite¹.

POSITIVE TESTWORK SUPPORTS RECENT OFFTAKE AGREEMENTS

Inaugural testwork undertaken on Namangale North graphite concentrate by the German metallurgical laboratory, which previously tested Namangale South samples², confirmed its suitability for producing expandable graphite for a wide variety of applications including flame retardant building material, graphite foil and flame retardant textiles which require finer expandable flake and powder graphite.

This outcome is very positive for Volt, as it means the mine plan can be optimised to source ore from any part of the project mineral resource to meet customer demand for expandable graphite. Demand for expandable graphite is increasing significantly, primarily for its non toxic flame retardant qualities and coupled with the reduction in supply from Chinese mines, this is creating an increase in graphite prices.

¹ Refer to Volt’s ASX announcements “Cooperation Agreement with Leading Chinese Graphite Group” 22 May 2017, “Cooperation Agreement with CNBM” 16 June 2017, “Offtake Agreement with Major Graphite Distributor” 23 June 2017, “Offtake Agreement Fills Stage 1 Capacity” 17 July 2017.

² Refer to Volt’s ASX Announcement “Namangale concentrate suitable for production of commercial grade expandable graphite” - 19 January 2017.

Testwork results

The German metallurgical laboratory performed a range of tests on the Namangale North graphite concentrate samples under two different scenarios: [A] standard tests using the most economic and efficient process to produce expandable graphite; and [B] repeats of the same process with hydrated zinc sulphate added. The results follow:

Test [A]: Expansion volume after cold treatment and medium retention time

Flake size	> 500 µm	> 300 µm	> 180 µm	> 106 µm	> 75 µm	<75µm
	>35 mesh	>50 mesh	>80 mesh	>150 mesh	> 200 mesh	<200#
Room Temp.	2 cm ³ /g	2 cm ³ /g	2 cm ³ /g	3 cm ³ /g	3 cm ³ /g	3 cm ³ /g
800 °C	370 cm ³ /g	300 cm ³ /g	250cm ³ /g	170cm ³ /g	110cm ³ /g	70cm ³ /g
1000 °C	<u>430 cm³/g</u>	<u>430 cm³/g</u>	<u>330 cm³/g</u>	<u>230 cm³/g</u>	<u>150 cm³/g</u>	<u>75cm³/g</u>

Key findings from test [A] highlighted:

- The sample was highly suitable to produce expandable graphite with a large expansion volume;
- No calcium carbonate was detected which is crucially important for many applications but especially in the refractory industry;
- Compared with rival samples from China, the expandability results for Volt's flake are superior; and
- Overall, test [A] results demonstrate that flake graphite from Namangale North can produce high quality expandable graphite for multiple downstream applications.

For Test [B], the addition of a small amount of hydrated zinc sulphate materially increased the expansion of finer flake and powder sizes, as shown below:

Test [B]: Expansion volume after cold treatment and medium retention time (with zinc sulphate added)

Flake size	> 500 µm	> 300 µm	> 180 µm	> 106 µm	> 75 µm	<75µm
	>35 mesh	>50 mesh	>80 mesh	>150 mesh	> 200 mesh	<200#
Room Temp.	2 cm ³ /g	2 cm ³ /g	2 cm ³ /g	4 cm ³ /g	4 cm ³ /g	5 cm ³ /g
800 °C	390 cm ³ /g	310 cm ³ /g	320cm ³ /g	315cm ³ /g	210cm ³ /g	
1000 °C	<u>450 cm³/g</u>	<u>420 cm³/g</u>	<u>420 cm³/g</u>	<u>320 cm³/g</u>	<u>240 cm³/g</u>	<u>170cm³/g</u>

The key findings from test [B] highlighted:

- Expansion of expandable graphite started at 200°C;
- Medium/fine sized flakes (>106µm) and powders have a materially larger expansion volume than expandable graphite without the addition of zinc sulphate as an ancillary intercalation reagent;
- Fine flake and powder with a flake size <75µm from Namangale North achieved much higher average expansion rates (170cm³/g) then comparable rival samples that originated in China (average 40-46cm³/g); and
- Due to its high expandability when zinc sulphate is used, the fine flake and powder from Namangale North can be used in a wide range of downstream applications including – flame retarding for textiles (self-extinguishing carpets/underlays, suits for firefighters), artificial leather for briefcases and other fire protection uses where smooth surfaces are important.

Chief Executive Officer, Trevor Matthews commented: "Confirmation that Namangale North graphite concentrate is suitable for a wide array of expandable graphite applications is timely, given the recent offtake and cooperation agreements signed by Volt. These results provide Volt's metallurgists and engineers with a more flexible platform to efficiently optimise the most economic development and operation plans for Stage 1 and Stage 2 production across the entire Namangale deposit.

Conclusion

The Board is pleased with the encouraging metallurgical results for Namangale North graphite concentrate and its high suitability for making expandable graphite. This will enable Volt's team to prepare a highly efficient and versatile development plan that factors in the entire Namangale deposit for delivering graphite concentrate suitable to meet all client requirements.

For and on behalf of Volt Resources Limited

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