

## EXCELLENT HIGH GRADE METALLURGICAL RESULTS FROM DUWI

Sovereign Metals Limited is pleased to announce the results of further metallurgical development work on samples of graphite ore from the Duwi Flake Graphite Project in Malawi. The test-work program was undertaken by SGS Canada Inc. at its laboratories in Lakefield, Ontario, and demonstrates that very high grade concentrates, with a substantial portion of Large and Jumbo flake, can be produced with a combination of comminution and flotation techniques only.

### Highlights:

- High-grade flake graphite concentrates were produced through conventional mineral processing techniques without chemical or thermal purification:
  - Jumbo flake concentrates grading up to **99.2% C(t)** with combined coarse and jumbo flake categories (+150µm) averaging **97.5% C(t)**.
  - Combined concentrates across all flake size fractions grading up to **96.6% C(t)**.
- Very-high grades with very low impurities indicate that Duwi flake graphite products may be suitable for producing spherical graphite for use in emerging lithium-ion battery technologies.
- Separate independent laboratory test-work will test suitability for spherical graphite characteristics of Duwi flake graphite.
- The range of test-work undertaken to date demonstrates that the Duwi Flake Graphite Project has a high degree of flexibility to produce flake products for a wide range of applications.
- Additional samples of bulk flotation concentrates have been distributed to potential customers and end users for initial downstream application property testing/characterisation.

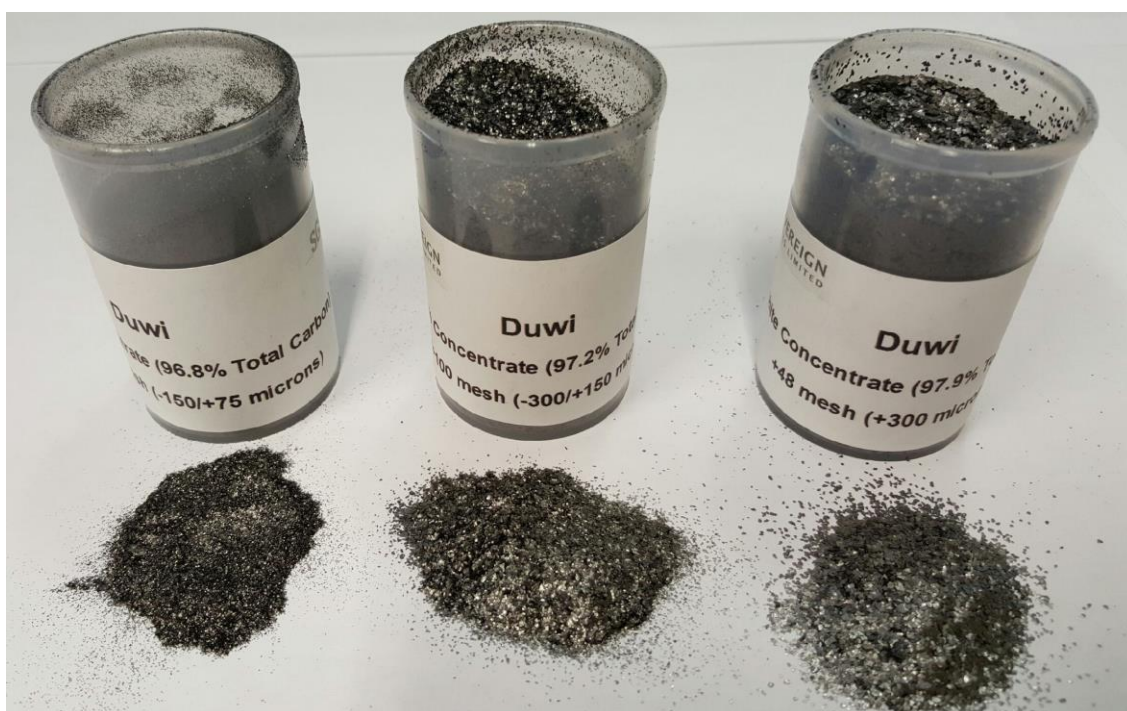


Figure 1. Photograph of Duwi flake concentrate from test-work at SGS Lakefield, Ontario, Canada.

*Sovereign Managing Director, Mr Matthew Syme commented “We are very pleased with the outcome of the latest metallurgical test-work program from the Duwi Flake Graphite Project. This shows that as well as being able to produce graphite concentrates with an excellent coarse and jumbo flake size distribution, we can now also produce very high grade concentrates using only simple physical comminution (crushing, grinding, and scrubbing) and flotation. This is an exciting development for the Project because it means that the Company is in a position to produce a large range of different graphite concentrates potentially suitable for a wide variety of traditional end-uses such as refractories, as well as potentially the fast growing Li-ion battery market.”*

**Enquiries:                      Matthew Syme – Managing Director    +618 9322 6322**

### *Metallurgical Test-work Summary*

Sovereign's third independent metallurgical test-work program for the Duwi Flake Graphite Project was conducted over the past three months at SGS Canada Inc. under the supervision of Mr Oliver Peters (MSc, P.Eng, MBA).

The primary objectives of the test-work were threefold:

- To continue to verify the excellent flake graphite concentrate characteristics demonstrated by the earlier MINTEK and SGS test-work programs across different parts of the Duwi Deposit.
- To test various comminution media and flowsheets to attempt to improve already high-grade graphite concentrates, to expand the marketability of Duwi graphite products.
- To produce a sufficient quantity of concentrate samples to distribute to potential customers and end users for downstream application property testing/characterisation.

The test-work was performed on a new composite of half HQ core from 3 diamond holes drilled within the core of the Duwi Indicated Mineral Resource area grading 8.5% TGC (Total Graphitic Carbon). All drill core was staged crushed to -3.35mm and homogenised prior to being rotary split into 2 kg test charges for subsequent flotation tests.

The major difference in this metallurgical program was the addition of an attrition scrubbing stage to upgrade the concentrates to >95% C(t), as opposed to the circa 91% to 92% C(t) concentrates previously produced at Mintek and SGS. A total of six separate attrition tests were carried out under slightly differing conditions for each. An example of results for one of these is shown below in Table 1.

**Table 1. Results of attrition scrubbing tests on B2 concentrate Test # U-15.**

		<b>U-15</b>	
<b>Mesh</b>	<b>Micron</b>	<b>Assays %<sup>1</sup> C (t)</b>	<b>Distribution % C (t)</b>
+48 mesh	+300 µm	97.6	20.6
-48/+100 mesh	-300/+150 µm	97.1	28.9
-100/+200 mesh	-150/+75 µm	96.8	22.8
-200 mesh	-75 µm	95.1	27.7
Avg. ->	Total ->	96.6	100.0

<sup>1</sup> The chemical analysis used to determine the total carbon content employs combustion of a sample followed by infrared detection on a LECO SC-632 instrument. All reported analytical results have an associated measurement uncertainty based on the expected precision and accuracy relating to the method and sample concentration. Values at 100% should not be treated as pure products without additional impurity testing. The estimated measurement uncertainty for total carbon values greater than 90% C is 1.7% (relative) with a resolution of 1 significant figure.

Overall carbon recoveries ranged between 83% and 89% across tests B2 (U13-U18). However, as the test-work was not closed circuit, it is expected that the actual recoveries will be higher.



Overall, the attrition tests produced excellent upgrading results with concentrates averaging 96.2% C(t) with some of the jumbo flake portions grading as high as 99.2% C(t). Importantly, these results show that Duwi flake graphite can consistently be upgraded to >95% C(t) and hence has the flake size and grade characteristics pre-requisite for producing Li-ion battery grade spherical graphite. Additionally, this test-work showed that slightly altering the grinding and attritioning conditions can produce higher grades (i.e. >95% C(t)) and slightly finer flake distribution OR can be set to produce lower grades (i.e. ~92% C(t)) with excellent coarse flake distribution. This will provide the Company maximum flexibility to produce flake graphite concentrates to order for specific applications.

This latest phase of metallurgical test-work has shown that Duwi can consistently produce graphite concentrates with an excellent coarse and jumbo flake size distribution and very high grade concentrates using only simple physical comminution (crushing, grinding, and scrubbing) and flotation. This means that the Company is in a position to potentially produce a large range of different graphite concentrates possibly suited to variety of downstream application including refractories and products for emerging markets such as Li-ion battery anodes.

A separate independent laboratory test-work program will test the suitability of Duwi concentrates for producing spherical graphite, in addition to expandability and various other physical properties tests. Samples of bulk flotation concentrates have also been distributed to potential customers and end users for downstream application property testing/characterisation.

#### **Competent Person**

*The information in this report that relates to Metallurgical Testwork Results is based on information compiled by Mr Oliver Peters, M.Sc., P.Eng., MBA, who is a Member of the Professional Engineers of Ontario (PEO), a 'Recognised Professional Organisation' (RPO) included in a list promulgated by the ASX from time to time. Mr Peters is a consultant of SGS Canada Inc. ("SGS"). SGS is engaged as a consultant by Sovereign Metals Limited. Mr Peters has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking, to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Peters consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

#### **Forward Looking Statement**

*This release may include forward-looking statements, which may be identified by words such as "expects", "anticipates", "believes", "projects", "plans", and similar expressions. These forward-looking statements are based on Sovereign's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Sovereign, which could cause actual results to differ materially from such statements. There can be no assurance that forward-looking statements will prove to be correct. Sovereign makes no undertaking to subsequently update or revise the forward-looking statements made in this release, to reflect the circumstances or events after the date of that release.*