Canada Carbon's Miller Graphite Meets International Purity Standard of Equivalent Boron Content for Nuclear Graphite by Flotation Concentration Alone

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VANCOUVER, BRITISH COLUMBIA--(Marketwired - Jun 17, 2014) - **Canada Carbon Inc. (the "Company") (TSX VENTURE:CCB)** is pleased to report the results of detailed elemental analysis (by Glow-Discharge Mass-Spectrometry, "GD-MS") of its Miller hydrothermal lump/vein graphite, which had previously assayed 100% C(t) by SGS Canada Inc. Samples had been concentrated by means of industry-standard flotation techniques by SGS, and had not been exposed to either strong bases (used in caustic roasting) or strong acids (used in acid-leach upgrading). Interpreted from the GD-MS results, calculated purities of three different size fractions ranged up to 99.90% C(t), on samples "as received" by the laboratory. Following Rapid Thermal Upgrading, calculated purities of the treated samples ranged up to 99.98% C(t). A total of six separate GD-MS analyses were conducted and Equivalent Boron Content ("EBC") concentrations were determined for each, in accordance with established methods (range 1.18-2.61 ppm). In every case, the EBC values were well below the international standard for nuclear graphite, set at 5 ppm. These results are summarized in the table below.

Table 1: Summary Statistics Derived from GD-MS

SAMPLE	PURITY C(t) %[3] AS RECEIVED[1]	PURITY C(t) %[3] AFTER RTU[2]	EBC(PPM)[4] AS RECEIVED[1]	EBC(PPM)[4] AFTER RTU[2]
+32 MESH	99.78	99.83	2.18	2.61
+48 MESH	99.75	99.90	1.72	1.63
+65 MESH	99.90	99.98	1.18	1.35

1. All samples had previously been reported by SGS to contain 100% C(t), by Leco furnace, with IR detection. Samples were analyzed by GD-MS "as received" by Evans Analytical Group, without further processing.
2. Following the initial GD-MS testing "as received", each sample was exposed to Rapid Thermal Upgrading (RTU), (more fully described below), before being reanalyzed by GD-MS.
3. Purity C(t) % was calculated as "100% minus (sum of all impurity concentrations (%))". In those instances in which the GD-MS assay reported an element concentration as being below the detection limit for this method, the detection limit concentration was used in the calculation of total impurity content. For example, in all assays, Cadmium was reported as "<1 ppm" concentration, by weight. For the purposes of the purity calculation, Cadmium = 1ppm was used, as it is the most conservative approach to interpreting the data. Therefore, the calculated graphite purity values reported here are the minimum possible values which can be derived from the data.
4. Equivalent Boron Content (EBC), expressed as parts per million (by weight) was calculated according to ASTM C1233-09. 'Nuclear graphite' threshold is 5 ppm, by international agreement.

Rapid Thermal Upgrading, "RTU", had inconsistent effects on the three graphite samples. This variability was primarily with respect to Silicon, so the effect of RTU was calculated both including Silicon, and excluding it. For each of the samples, the Silicon concentration represented the majority of the total impurity burden (range 150-2000 ppm, by weight; 0.015 to 0.20 %, by weight, of the samples). As Silicon is commonly seen in hydrothermal systems as its oxide, SiO_2 (silica), it is possible that the graphite particles were incompletely liberated from their hydrothermal matrix by flotation concentration alone. Although chemically inert, silica can be substantially removed using the caustic roast process. There are therefore opportunities to further upgrade the flotation concentrate without any requirement for acid leaching, with its attendant environmental concerns. As shown in Table 2, with Silicon excluded from consideration, the total impurity burden for each sample was less than 100 ppm after RTU.

Table 2: Effect of Rapid Thermal Upgrading on Total Impurity Content

	TOTAL IMPURITY CONTENT (PPM)[1] INCLUDING SILICON			TOTAL IMPURITY CONTENT (PPM)[1] EXCLUDING SILICON		
SAMPLE	BEFORE RTU[3]	AFTER RTU[3]	% LOSS[2]	BEFORE RTU[3]	AFTER RTU[3]	% LOSS[2]
+32 MESH	2213	1745	21	413	45	89
+48 MESH	2464	971	61	464	71	85
+65 MESH	951	243	74	251	93	63

1. Parts per million, by weight. Impurity values are the sum of all assayed values, rounded to the nearest whole number. In those instances in which the GD-MS assay reported an element concentration as being below the detection limit for this method, the detection limit concentration was used in the calculation of total impurity content. For example, in all assays, Cadmium was reported as "<1 ppm" concentration, by weight; Cadmium = 1ppm was used, as it is the most conservative approach to interpreting the data. Therefore, the total impurity values reported here are the maximum possible values which can be derived from the data.
2. Values calculated as weight ratios, and rounded to the nearest whole number.
3. RTU is Rapid Thermal Upgrading, more fully described below.

The samples being reported on here derive from a 50 kg composite sample of Miller graphite, which was the subject of a flotation concentration flow-sheet optimization program being conducted by SGS Canada Inc. The sample was composed of material collected from the VN3 showing, and material found in stockpiles which are believed to date back to the historic Miller mine operations, in roughly equal amounts. The surface distance between the two sampling sites is approximately 460 metres. The crushing and screening of the 50 kg composite resulted in thorough homogenization of the graphitic material, prior to the flotation tests.

SGS has identified an opportunity that may increase the carbon content of the +48 mesh and +32 mesh size fractions further through an adjustment of the flotation circuit and conditions. This test work is scheduled to be completed later this week and analytical results are expected to be available within the following two weeks.

Canada Carbon's Executive Chairman and CEO, Mr. R. Bruce Duncan, commented, "We are very pleased to learn that this composite sample with a surface distance of 460 metres between sampling sites on the Miller Mine graphite property meets the equivalent boron content nuclear purity standard by flotation concentration alone. The results we report today re-affirm that the Miller hydrothermal lump/vein graphite is nuclear grade material, as we first reported on October 15, 2013. But what sets these new results apart from that earlier work is that the nuclear purity threshold was achieved without hydrometallurgical processing of any sort. Today, six different tests confirm the purity of the Miller graphite."

Laboratory Procedures

Glow-Discharge Mass-Spectrometry (GD-MS)

Three samples of this high-purity material were submitted to Evans Analytical Group, Liverpool NY (EAG-NY), where they were prepared for chemical survey analysis by GD-MS. In this method, the sample (graphite) is mounted as the cathode in the glow discharge cell and analyzed directly. Argon is generally used as the discharge (plasma) gas, which atomizes the sample. Atomized species diffuse into the discharge plasma, where they are ionized. Carbon ions together with analyte ions (deemed impurities, here) are then extracted from the cell and accelerated into the mass analyzer for detection. The plasma atomization process continues until a sufficient mass of the sample has been atomized, to ensure that the acquired results are representative of the analyzed sample. The mass spectrometer determines the ion beam ratios of analyte ions versus carbon ions, thereby identifying the elements present in the sample, and their mass fractions. Reference sample analysis is used to determine the relative sensitivity factors for each element, which then determines the limits of detection for each element.

For the assay results reported here, larger samples were submitted so that the assay protocol could be optimized for fast flow GD-MS measurements, resulting in higher instrumental sensitivity. Approximately 5g samples of Miller graphite were pressed into self-supporting wafers without a binder. These samples were then assayed by FF-GDMS "as received", and also after Rapid Thermal Upgrading.

Rapid Thermal Upgrading (RTU)

Rapid thermal upgrading is a method for quickly eliminating heat-labile impurities from a graphite sample. The self-supporting graphite wafers, described above, were submitted to GD-MS "as received". The wafers were then subjected to RTU, as follows, then re-submitted for GD-MS assay. Thermal treatment conditions were the following: flowing helium atmosphere (100 mL/min); temperature 2000-2200 C.; duration 10 minutes. The equipment used was supplied by Thermo Fisher Scientific, Model Element GD.

About Nuclear Graphite

Production, dissemination and use of Nuclear Grade Graphite is governed by the Treaty on the Non-Proliferation of Nuclear Weapons to which the Government of Canada is a signatory. The definition of Nuclear Grade Graphite requires that it have a purity level better (less) than 5 parts per million 'boron equivalent'. In Canada, the production, use and dissemination of Nuclear Grade Graphite is subject to the requirements of the Nuclear Safety Control Act, the Defence Production Act, the Export and Import Permits Act and related regulations including the Controlled Goods Regulations.

The impurity concentrations obtained by GDMS were used to calculate the Equivalent Boron Content (EBC) of the graphite, as defined in ASTM Method C1233-09, "Standard Practice for Determining Equivalent Boron Contents of Nuclear Materials", in conjunction with ASTM Standard D7219-08, "Standard Specification for Isotropic and Near-isotropic Nuclear Graphites", which lists the 16 elements of concern with respect to the EBC criterion. EBC is a means of estimating the potential for the impurities contained in the graphite to absorb neutrons when exposed to the controlled neutron flux within a nuclear reactor. Any impurities absorbing neutrons would adversely affect the rate and the control of the nuclear chain reaction.

EBC is calculated as the sum of the EBC of each impurity, such that EBC (impurity) is equal to(EBC factor for impurity) multiplied by (concentration of impurity (ppm)). Each EBC factor was obtained from Table 1 of ASTM Method C1233-09. A number of contaminants of concern were below the detection limit of the GDMS assay procedure, so the concentration associated with each respective detection limit was submitted for the calculation of the EBC of those contaminants.

Although it is a critical variable, the EBC is only one of many criteria which might determine the suitability of any graphite for nuclear applications.

Qualified Person

Mr. Oliver Peters, M.Sc., P.Eng, MBA, (Consulting Metallurgist for SGS and Principal Metallurgist of Metpro Management Inc.) is an Independent Qualified Person under National Instrument 43-101, and has reviewed and approved the technical information provided in this news release.

About Evans Analytical Group

Evans Analytical Group (EAG) is the world's leading, fully integrated, independent laboratory network, providing high value expert analytical and testing services to a wide range of industries and end users, including surface analysis, microscopy and materials analysis to support high technology industries.

About ASTM

ASTM International, formerly known as the American Society for Testing and Materials (ASTM), is a globally recognized leader in the development and delivery of international voluntary consensus standards. Today, some 12,000 ASTM standards are used around the world to improve product quality, enhance safety, facilitate market access and trade, and build consumer confidence.

About SGS Canada Inc. (Lakefield, Ontario)

SGS Canada Inc. ("SGS") is recognized as a world leader in the development of concentrator flowsheet design and pilot plant testing programs. SGS Metallurgical Services division was founded over half a century ago. Its metallurgists, hydro-metallurgists and chemical engineers are experienced in all the major physical and chemical separation processes utilized in the recovery of metals and minerals contained in resource properties around the world.

About Canada Carbon Inc.

Canada Carbon Inc. is engaged in the acquisition, exploration and evaluation of mineral properties. The Company holds a 100 % interest in four graphite properties located in Ontario and Québec, including two past-producing graphite mines, the Miller and the Asbury.

CANADA CARBON INC.

R. Bruce Duncan, CEO and Director

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