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| SGS | **Geochemistry**<br><br>**Lakefield Laboratory** | Doc Type: **Method Summary**<br>Method Code: **GC_CSA05V**<br>Service: **Testing**<br>Issued Date: **July 2024** |
| **Natural Resources** | **Determination of Graphitic Carbon in Ores, Concentrates, and Metallurgical Test Products by Hydrochloric Acid Leach and Combustion Infrared Detection** | Approved by: **K. Williams** |

1. **Parameter(s) measured, unit(s):**
   Graphitic Carbon [C(g)], in %

2. **Typical sample size:**
   0.1 - 0.2 g

3. **Type of sample applicable (media):**
   Ores, concentrates, and metallurgical products

4. **Sample preparation technique used:**
   A weighed sample is roasted in oven at 500 C for 1 hour to remove all organic carbon. Carbonate carbon is then leached/evolved using HCl. The sample is then dried to remove the chlorides. The residue is mixed with metal accelerators and placed in the LECO IR combustion system. The residual carbon is taken as graphitic carbon. With high grade carbon, samples are wetted with methanol prior to acid addition.

5. **Method of analysis used:**
   Combustion followed by infrared detection on LECO instrumentation.

6. **Data reduction by:**
   The results are exported via computer, on line, data fed to the Laboratory Information Management System with secure audit trail.

7. **Figures of Merit:**
   The Reporting Limit has been determined according to the following:

| Element | C (g) |
|---|---|
| **(%)** | 0.05 |

8. **Quality control:**
   Quality control materials include method blanks, replicates and reference materials and are randomly inserted with the frequency set according to method protocols at ~ 12% for process control analysis. Quality control materials will also include BRM (Barren reference materials, or preparations blanks) and preparation duplicates if samples have been taken through the

sample reduction process. Calibration materials that cover the range upon method set-up; calibration check performed daily.

**9. Accreditation:**

SGS Natural Resources conforms to the requirements of ISO/IEC 17025. Scopes of Accredited tests are site specific, please visit Accredited Organizations | Standards Council of Canada (scc-ccn.ca)