	<p style="text-align: center;">Geochemistry</p> <p style="text-align: center;">Global</p>	<p>Doc Type Method Summary</p> <p>Method No: GE_CVA37A25</p> <p>Code</p> <p>Service Testing</p> <p>Issued Date April 2022</p>
<p>Natural Resources</p>	<p>Determination of Mercury in Exploration Samples Using Multi-Acid Digestion and Cold Vapor- Atomic Absorption Spectroscopy</p>	<p>Approved by K.Williams</p>

1. Parameter(s) measured, unit(s):

Mercury (Hg): mg/kg

2. Typical sample size:

0.15 g

3. Type of sample applicable (media):

Crushed and Pulverized exploration samples.

4. Sample preparation technique and Method of Analysis used:

This method consists of a digestion of the sample using strong acids and oxidizing agents followed by cold vapour atomic absorption technique. Excess oxidant is removed after the digestion step using a reducing agent. Mercury is then reduced in a stannous chloride stream producing elemental mercury which is sparged from the liquid phase and transported as a vapor to the quartz cell. In the cell, the generated mercury atoms are contained in the path of a source lamp and a signal generated by measuring the amount of light absorbed at the specific wavelength.

5. Data reduction by:

The results are exported via computer, on line, data fed to the SGS Laboratory Information Management System (SLIM) with secure audit trail.

6. Figures of Merit:


This method has been fully validated for the range of samples typically analyzed. Method validation includes the use of reference materials, replicates, duplicates and blanks to calculate accuracy, precision, linearity, range, limit of detection, reporting limit, specificity and measurement uncertainty.

The reporting limit has been determined as follows:

Reporting Limit (mg/kg)	0.005
Upper Limit (mg/kg)	100

7. Quality control:

Quality control materials include method blanks, duplicates and reference materials and are randomly inserted with the frequency set according to method protocols at ~11% for exploration grade analysis. Quality control materials will also include preparations blanks and replicates if samples have been taken through the sample reduction process. Instrument calibration is performed for each batch or work order and calibration checks are analyzed within each analytical run.

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8. Accreditation:

SGS Natural Resources conforms to the requirements of ISO/IEC 17025. Scopes of Accredited tests are site specific, please visit <https://www.scc.ca/en/search/laboratories>