

Stable Isotope Geochemistry

AGAT's Stable Isotope Geochemistry lab specializes in isotopic characterization of natural gases including alkanes and carbon dioxide. Stable isotope analysis is a powerful tool for characterizing the source and processes affecting natural gases. At AGAT we provide fast and reliable stable isotope analysis using our industry leading isotope ratio mass spectrometer. We also offer geochemical interpretation of stable isotope data to assist clients in fully realizing the value of their datasets.

Testing programs include stable isotope analysis of:

- Mud gas samples
- Natural gas releases/leakage (stray gases)
- Dissolved gases (groundwater and reservoir fluids)
- Carbon capture and storage gases
- Soil gas: methane and carbon dioxide
- Headspace gas isotopes (CO_2 and $\text{C}_1 - \text{C}_5$)

We provide a comprehensive range of services complementary to stable isotope analysis. Interpretation services are customized to meet the specific demands of individual projects.



Our Services Include:

- Identification of the origin of gas samples – thermogenic, microbial, biodegradation
- Evaluation of reservoir processes: thermal maturity, gas migration, fluid mixing
- Distinguishing between kerogen/solid-bitumen cracking and oil/wet-gas cracking
- Fingerprinting and correlating gas samples to common sources or generation mechanisms
- Allocation of commingled gases

AGAT Laboratories Calgary houses an isotope ratio mass spectrometer (IRMS) coupled to a GC for compound specific isotope analysis (CSIA). The Elementar's precision IRMS provides exceptional performance including high sensitivity and precision coupled with enhanced adaptability to multiple isotope systems. The IRMS is linked to an Agilent 8890 GC via a GC5 online combustion/pyrolysis furnace.

The AGAT advantage is centered on the principle of Service Beyond Analysis. Our dedicated onsite technical team provides direct attention to all aspects of the analytical procedure from field sampling to real-time assessments of data quality during isotope analysis which is immensely important when dealing with valuable or difficult to obtain sample materials.

Contact AGAT today to learn how stable isotope analysis can enhance your geochemical characterization of the subsurface.

Geochemistry Services

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