Smarter Mining and Exploration Operations

Our services to the Mining and Minerals industry include a full range of laboratory analytical and field services including:

Environmental Health & Safety
We share your concern for worker health and a safe environment.
- Air monitoring and sampling
- Regulated minerals assessment
- Silica dust monitoring/testing

Failure Analysis
Preventing failure by understanding its root cause minimizes downtime and increases profitability.
- Metallurgical failures
- Fracture and surface assessments
- Welding analysis
- Corrosion analysis
- Cement integrity

Materials Characterization
From exploration to quality control, we help you understand the materials at the core of your operation.
- Oil and gas shale characterization
- Porosity measurement in sandstone
- Thermal maturity analysis
- Determination of carbon content
- Identification of accessory minerals
- Gravimetric and volumetric concentrations
- Cement additives, cement slurry, and mixing fluids
- Drill cutting analysis

Geological Services
Software and sample services for on-site data generation and in-lab analytical results.

TECHBASE® Database Construction
Surface and subsurface data storage for maximum efficiency and quality control.

Subsurface Structure Visualization
Computer modeling or hand mapping generated graphics.

Petrographic Analysis
Full characterization for rock classification, reservoir characterization, and diagenetic evaluation.
New Raman Technique Helps Visualize Thermal Maturity

Raman spectroscopy provides objective, direct, and immediate analysis.

Thermal Maturity Analysis Using Raman Spectroscopy

Organic carbon, modified by temperature, pressure and time, creates kerogen which eventually results in the chemical reactions that produce oil and gas. Petroleum geologists use the thermal maturity of source rocks, along with subsurface structural visualization, to gain an understanding of where oil might be found. Various geochemical parameters are used to determine the level of thermal maturation in source rock. One of the newest and most exciting is the use of Raman Spectroscopy.

Raman Spectroscopy - The Benefits

Raman spectroscopy will determine both the chemical phases and the specific mineralogy of your sample at the molecular level to provide a microscale analysis to use as a thermal maturity indicator. Raman enables the analyst to distinguish between carbonaceous material in various crystalline states in which a well-ordered element yields a single band at “O” on the spectra and an additional disordered or “D” band near the “O” band. The D/O band intensity ratio increases with the degree of thermal change.

» Objective and direct chemical measurement with immediate results
» Not dependent on kerogen type
» Little or no sample preparation using whole rock, cuttings or extracted vitrinite
» Can be used with marine sediment and high hydrogen content macerals
» Not subject to human error in distinguishing between macerals

Total Organic Carbon Analysis (TOC)

Total organic carbon (TOC) is mainly used to assess the quality of source rocks, but may also be used to help evaluate other source and productive reservoirs. The different types of organic matter found in source rocks are very important since the relative abundance of hydrogen, carbon, and oxygen determines the products generated from the organic matter.

Thermogravimetric Analysis (TGA)

Determines composition of materials and predicts thermal stability.

CH-NS Analyzer

Determines organic carbon, total carbon, and hydrogen.

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