

OIL AND GAS CHEMISTRY



AGAT Laboratories

Service Beyond Analysis ■ www.agatlabs.com

AGAT Laboratories is a highly specialized, Canadian-based company that provides analytical laboratory services worldwide. We offer services to the Environmental, Energy, Mining, Industrial, Transportation, Agri-Food and Life Science sectors. With world-class facilities and state-of-the-art instrumentation, our qualified personnel adhere to our mission statement, delivering "Service Beyond Analysis".



Analytical Services

Our Oil and Gas Chemistry Division specializes in the analysis and characterization of natural gas, condensate, crude oil and produced water.

Process Chemistry

The production and processing of hydrocarbons involves a number of physical and chemical systems. Our petroleum services include the ability to analyze the chemicals involved in processing for active characterization and contamination. Some of our petroleum services include; Amine analysis, Benzene Emissions analysis and SAGD analysis.

The applications of our petroleum services include the following:

- Obtaining profiles of glycols, amines and sulfur compounds.
- Assessments of water compatibility at varied physical conditions.
- Assessments on the effects of corrosion inhibitors, and other important process additives.

Crude Oil Analysis

The characterization of crude oils at atmospheric pressure using routine parameters such as total sulphur and distillation (D-86) profiles allows for accurate information concerning the class and quality of the oil itself. Unwanted portions of the crude oil such as water and solids are quantified and API gravity and viscosities are determined. These parameters allow for the calculation of raw material value as well as the determination of ideal processing and handling procedures.

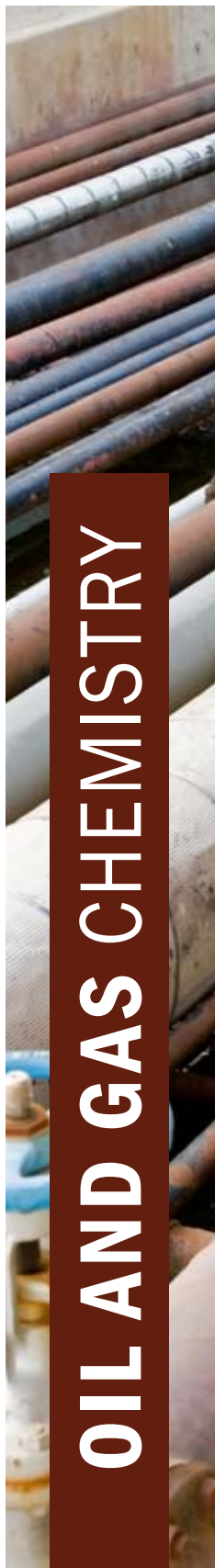
Tests

- Routine crude oil analysis
- Heavy/light crude oil analysis
- API and specific gravity
- Asphaltenes
- BS&W
- Viscosity
- Flashpoint
- Pour Point
- Sulphur content
- Water content
- Wax content

Hydrocarbon Analysis

Clients utilize our analytical results to achieve an accurate profile of the hydrocarbon distribution within their production streams. The applications of the results range from the examination of profiles at the well, through transport and processing to the actual sales product. We have successfully assisted our clients in fine-tuning their hydrocarbon processing facilities, trouble-shooting for facilities in upset conditions, and in analyzing for unknown contaminants in a hydrocarbon stream.

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Tests

- Routine gas analysis
- Atmospheric hydrocarbon liquid analysis
- Pressurized hydrocarbon liquid analysis
- Trace sulphur analysis
- Reid Vapour Pressure (RVP)
- G.O.R. determination

Water Analysis

The applications for water analysis include the identification of formations via water profiling, correlation to log information, the assessment of potential corrosiveness and scalability and compatibility assessments among other important information. The use of computers in this area allows for automated generation of Stiff diagrams, ion balancing and other value-added report enhancements.

Tests

- Routine water analysis
- Compatibility testing (Solmeneq)
- Water scaling tendencies (Solmeneq)
- Corrosion water
- Metals by atomic absorption spectroscopy
- Glycol analysis
- Amine analysis
- Trace H₂S analysis
- Calculated wellstream

Quality

AGAT Laboratories' *Quality Assurance Program* is applied to all aspects of our business. Our Quality Assurance Division monitors the operations of the company and ensures compliance with the best-documented practices. This division ensure precision, accuracy and reliability in all of our services. In addition, we conduct regular quality control checks on all instrumentation and our personnel regularly evaluate all methodologies and procedures for the continuous improvement of our services.

Accreditation

Our Oil and Gas Chemistry facilities are accredited to ISO/IEC 17025 for specific tests as listed in the laboratory's current scope of accreditation from the Standards Council of Canada (SCC).

Register ISO 9001 standard by QMI SAI Global and registration covers the Quality Management System for Tribology Preventative Maintenance testing services (including jet fuel testing).

Advanced Instrumentation

Our Oil and Gas Chemistry laboratories are equipped with state-of-the-art instrumentation including:

- Agilent 7890 Gas Chromatograph TCD/FID equipped with an automated sampler for routine and extended gas analysis.
- SCD Chemiluminescence Gas Chromatograph for trace sulphur analysis.
- Ultra high-speed centrifuge, viscometer and D-86 distillation units for oil analysis.
- DX-120 Ion Chromatograph, Atomic Absorption Spectrophotometer (AAS) and PC Titrator for water analysis.



Field Sampling Services

Our strategically placed branch locations provide field sampling and testing services for regulatory measurement requirements, meter calibrations, pipeline specifications, routine sampling, corrosion monitoring and plant optimization. AGAT Laboratories offers a wide spectrum of laboratory services tailored to meet the needs and demands of the Energy sector. Our Field Sampling services ensure client requirements are always obtained safely and on time.

Our on-site testing capabilities include:

- Hydrocarbon Dewpoint - Natural Gas (Pipeline/Process)
- Water Dewpoint – Natural Gas (Pipeline/Process)
- Millipore Filter testing (Contaminants in Gas)
- pH / Conductivity testing (Water)
- H₂S concentration by tube or Tutwieler
- Oxygen Analyzers
- Charcoal Filter Testing (Hydrocarbons)
- Noise testing
- Gas Chromatography analysis

Innovations

AGAT Laboratories' Research and Development Program is dedicated to creating innovative technical solutions and improved service for the Energy Sector. AGAT Laboratories offers several new analysis and field collection methods including:

- **H₂S Measurements in Vapour Streams from SAGD operations:** Utilize a novel technique for H₂S analysis at gas plants under high temperature and high water content using a metal precipitation scrubbing methodology.
- **Water cut testing in SAGD production facilities:** Includes bitumen emulsion sampling from production separators for laboratory testing to check calibration for in-line metering devices.
- **Portable gas analysis lab:** Mobile lab for on-site gas analysis utilizing micro-technology and specialized Gas Chromatographs for high quality field analysis.
- **Field Bar-Coding System:** Bar-code tags are attached to sample points on wells and are scanned into our database with the fixed header data.
- **Oxygen Analyzer:** Accurately identify trace levels of oxygen and contaminants in gas streams to eliminate O₂ degradation during transfer.

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We provide access to our online *WebFLUIDS* database management system for all of our clients. This system allows clients to access their results online and trend and compare historical analysis to ensure results are accurate and reliable. Please ask an AGAT Representative for a complete demo of all of *WebFLUIDS*' capabilities.

