

Onsite Chemistry

Onsite sampling and analysis of reservoir fluids is often required during exploration/appraisal well testing and production well startups. In some cases immediate analysis of the produced fluids is desirable to check for external contamination from drilling fluids etc. Non-hydrocarbon components need to be measured at very low concentration to ensure pipeline or process specifications can be met. Many of these components, such as sulphur compounds, mercury and radon, are highly reactive, and must be measured at the well site if accurate values are to be obtained.

The Expro Fluid Analysis Centre employs a team of experienced oilfield chemists providing these services in the field to clients all around the world.

State of the art, portable analysis instrumentation is used to provide accurate data, and results are available to the client within hours. Anything from full specification Expro GOLD mobile PVT laboratory systems to small hand transportable analysis kits can be supplied.

Personnel are fully trained in the collection and transfer of PVT samples, ensuring crew sizes can be kept to a minimum.



Activity:	Applications:
Open hole sampling	Measurement of sample quality for PVT purposes
Well test	Verifies true quantities of reactive trace components
Production Facilities	Sampling and analysis of produced fluids, including trace component
Process Facilities	Ensures that fluid specifications are being met

Features:	Benefits:
Chemists are trained PVT/ Sampling engineers	Greater efficiency / reduced crew size
International expertise	Available to work in remote locations at short notice
Wide range of air transportable instrumentation	Comprehensive analysis capability
Flexible approach	Analysis package is tailored to meet client's needs
Experienced staff	Flexibility to cope with unforeseen operational requirements
ISO 9000:2000 laboratory backup	High level of support

Onsite Chemistry

Onsite Services:

Services Provided

Reactive Trace Components

Sulphur compounds (H₂S, RSH, COS)
Mercury

Radon
Carbon dioxide
Oxygen

Sampling

Open hole sample transfers
Bottom hole sampling
Surface sampling

Onsite, PVT and Compositional Analysis

Quantification of OBM contamination
Gas and liquid compositions to C₃₀₊
Gas composition to C₇₊
PVT properties
Wax and asphaltene properties

Physical Properties

Density
Gas / Oil Ratio
Bubble point
Gas dew point
Viscosity
RVP
Emulsion / foaming tendency
Sand
Water content

Water

Dissolved CO₂
Dissolved O₂
Conductivity
pH
Acidity / alkalinity
Anions - Cl, SO₄, HCO₃, CO₃, OH
Cations - K, Ca, Mg, Ba, total Fe
Turbidity
Inorganic N₂
Specific gravity
Sulphur Reducing Bacteria

Methodology

UOP 212 and UOP 163
ISO 6978 A and B modified, atomic fluorescence spectroscopy (Sir Galahad),
cold vapour atomic absorption spectroscopy
Pylon AB-5 radiation monitor
UOP 172 Gas chromatography or gas analysis tube
Systech EC90DIS

Displacement to PVT cylinders at reservoir conditions
Mercury free, single phase or temperature compensated cased hole sampling
Wellhead, separator, isokinetic and process stream sampling

Expro GOLD Compositional Analysis system
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Chrompack CP 2002 portable GC
Expro GOLD PVT Analysis system
Expro GOLD flow assurance system

IP 365
Expro GOLD Compositional or PVT Analysis system
In sample vessel or Expro GOLD PVT Analysis system
EG Chandler Dewscope
IP 71, Expro GOLD PVT Analysis system
IP 69
BP method
Shell method (modified)
IP 386, Karl Fischer

Digital titration
Spectrophotometer
ASTM D1125
ASTM D1293
Digital titration
Spectrophotometer or digital titration
Spectrophotometer or digital titration
Spectrophotometer
Spectrophotometer
PAAR DMA35
Culture method