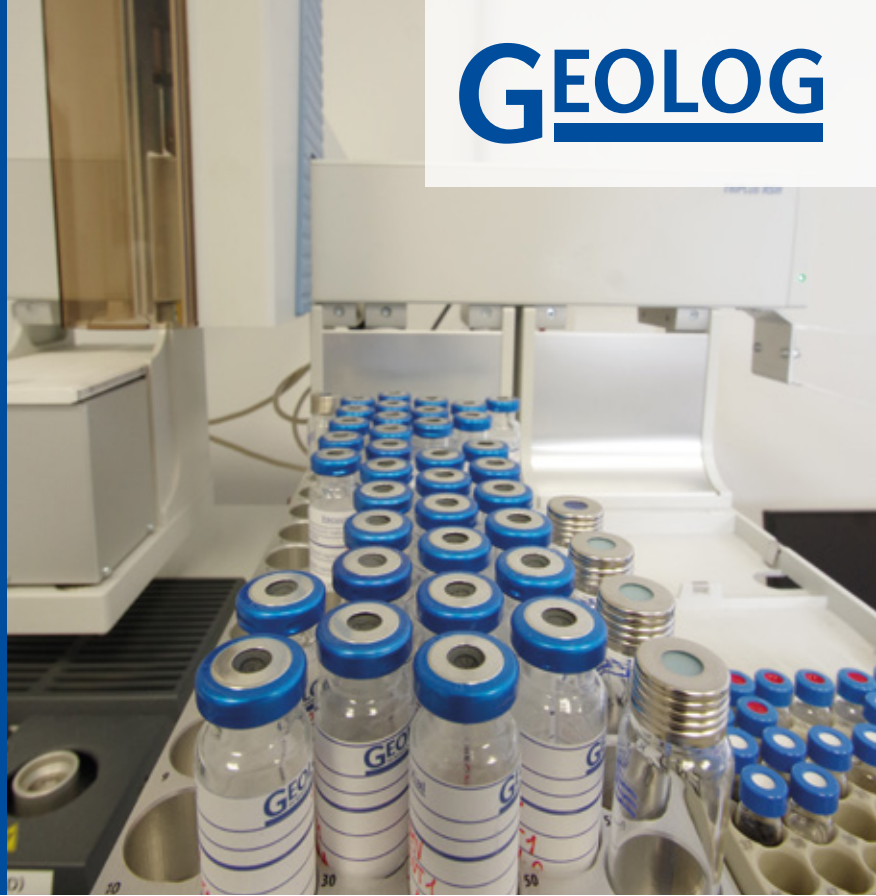


Quick and cost-effective gas sampling at the wellsite

GeoTube provide an efficient and cost-effective method for gas sampling at the rigsite.

The pre-evacuated tubes are quickly filled via an outlet on the front panel of every GEOLOG gas distribution panel, or through the standalone GeoTube Sampling Manifold (GSM), allowing samples to be taken whenever there is a notable gas event, or as a routine sampling schedule during operations.



Benefits

- Cost-effective: allows higher sampling frequency within the same budget (compared to other gas containers)
- GeoTube Sampling Manifold can be installed close to every gas trap
- Provides back-up to real-time gas measurements, allowing more in-depth analysis in the laboratory
- Compatibility with all commercial GC autosamplers
- Secure storage and low shipping volume

Challenges and Solutions

Whilst GEOLOG's field gas detection instruments are the most technologically advanced analysis systems available, there are limitations to what can currently be achieved at the rig site when compared to the laboratory. Analysis of hydrogen/deuterium and carbon isotopic ratios of C4 and above are currently unavailable in the field but can provide vital information regarding the genesis and migration of reservoir fluids, as well as identify post-accumulation processes in the reservoir and help in the identification of compartmentalized zones and well correlation

GeoTube provide a simple and cost-effective method of sampling gas at the rig site for further analysis in the laboratory. The standard GEOLOG gas distribution panel contains a front-mounted outlet port that allows GeoTube to be quickly filled in response to observed gas events while drilling, capturing unexpected shows, allowing their analysis in greater detail in the laboratory and helping to avoid missed pay zones. GeoTube Sampling Manifold (GSM) is also available for other gas chains, making it a stand-alone and independent gas sampling system. GeoTube are supplied in IATA approved packaging and are returned in the same packaging via regular transport.

Applications

Whenever a more in-depth investigation of mud gas is required, GeoTube provide a fast and cost-effective method of capturing samples for further laboratory-based studies. GeoTube can be utilised in regular sampling programs to allow verification of field gas data and to enable high-resolution profiles of the well gas geochemistry to be created for correlation purposes or reservoir studies. Their low cost and long life allow for samples to be captured as a routine part of well monitoring operations for future analysis as required.

Filling GeoTube in the field



In GEOLOG Unit

Without GEOLOG Unit

GeoTube are pre-evacuated to 0.025mbar utilizing custom designed hardware to ensure a consistent and accurate vacuum control.

Once pre-evacuated, two gas sampling options are available:

- Every GEOLOG Gas Distribution panel (left) includes a front mounted port for GeoTube filling. This allows samples to be taken easily and quickly, without interruption of ongoing operations.
- GeoTube Sampling Manifold (right) allows GeoTube sampling with any gas trap, even in absence of ML unit.

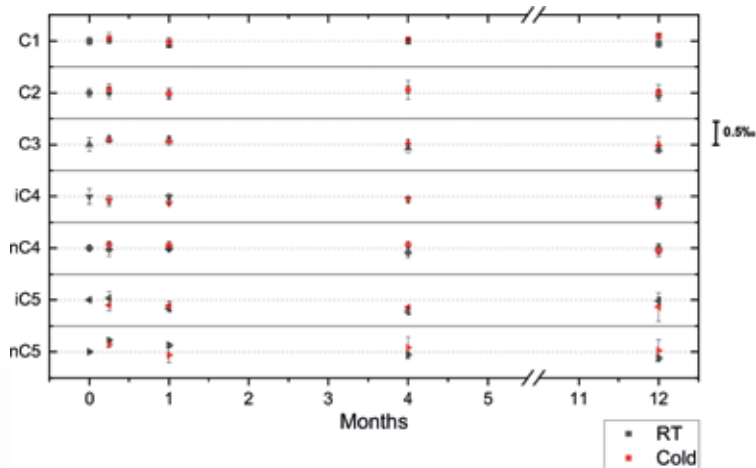


GeoTube sealing certification

GeoTube sealing efficiency has been extensively tested during a 1 year long analysis campaign, comprehensive of compositional and isotopic analysis. GeoTube have been stored in two different conditions, refrigerated and at room temperature, in order to simulate the different encounterable situation, proving result consistency between the two datasets.

- No compositional losses (<10%) up to 1 year
- No loss of vacuum after 1 year
- No wetness variations (<2%) up to 1 year
- No isotopic fractionation (<0.5‰) up to 1 year

GeoTube Isotopic Analysis Campaign



A large set of GeoTube samples was prepared in standard operating conditions, stored in two different environments (room temperature and refrigerated) and tested throughout a 1 year long analysis campaign. The isotopic analyses of all prepared samples are presented in the graph on the left as average of 5 different sample repetitions with the associated standard deviation. C1 to C5 isotopic compositions are independently reported in each row that spans over an accuracy band of +/- 0.5‰

Specifications

Volume	20ml
Pressure	Pre-evacuated to 0.025 mbar
Storage Life	1 Year, validated through real data acquisition
Material	Glass with metal cap Rubber/Teflon septum

GEOLOG around the World

