

Oil-in-Water Analysis by IR Absorbption

One-day training course



OVERVIEW

The objective of this course is to train laboratory technicians to quantitatively determine the concentration of oil in a produced water sample using the Department of Energy and Climate Change (DECC) approved alternative IR methodology.

The classroom sessions provide each participant with information on the measurement of oil-in-water and highlight any areas where particular challenges might exist. While the training addresses all the main aspects of the analysis method, it is not designed to be equipment-specific.

The participants are required to carry out the standard oil-in-water laboratory test in order to gain certification.

Note: Participants should be familiar with general laboratory practice and safety. Oil Plus can provide some PPE for the laboratory part of the course such as a lab coat and glasses. However, all delegates **MUST** bring their own safety shoes.

GLOBAL SOLUTIONS

Oil Plus Ltd is an independent consulting and oilfield services business group of John Crane, a division of Smiths Group plc. We work closely with oil and gas companies all over the world to provide solutions to a wide range of production chemistry and process engineering issues,

starting with extraction from the reservoir, through phase separation and on to water injection and resulting reservoir issues.

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Classroom

- **Introduction** – Reviews offshore petroleum activities including the OPPC guidelines on dispersed oil in produced water discharges to sea and the need to measure the oil content of produced waters
- **Produced water sampling and analysis requirements for offshore oil and gas facilities located in the UKCS** – Provides an overview of current UK sector offshore sampling requirements and how to compile the monthly dispersed oil in produced water figures
- **Produced water sample points and sampling** – Covers the design and location of a produced water sample point, explains how to take samples, the types of bottles to use and recommended labelling
- **Measurement of dispersed oil in produced water using infrared analysis (DECC IR)** – Summarizes types of apparatus and reagents used, it explains how to make up a series of calibration standards, extract the samples, and generate the calculation curve using infrared (IR) absorption for reporting the results
- **Correlation with the OSPAR reference method** – Explores OSPAR methods, dealing with alternative method instrument analyser breakdown and general correlation issues
- **References** – Reviews procedures and guidelines that have been quoted in the manual

Laboratory

- Sampling and the choice of sample containers
- How to take samples and how to preserve them for later analysis
- General health and safety issues associated with the sampling and analysis
- DECC guidelines on the preparation and storage of standards
- Hands-on training in instrument calibration using prepared standards
- Hands-on training in the calibration and use of IR spectroscopy for oil in water determinations
- Determination in the laboratory of an unknown quantity of oil in a water sample by determining the amount of IR absorption
- Correlation with the OSPAR standard gas chromatography-flame ionisation detection method



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