



## Products and Services for the Oil and Gas Sector



NCIMB has been working with the oil and gas sector for over 30 years. We have grown as the industry developed by tailoring our services in response to demand. Our oilfield services include:

- Oilfield microbiology
- Biocide testing
- Fuel testing
- Produced water analysis
- Naturally occurring radioactive material (NORM) testing
- Chemical analysis
- Whole effluent assessment toxicity testing

NCIMB is ISO 9001 certified, licensed by the Scottish Environment Protection Agency (SEPA) and FPAL registered.

# Products and Services for the Oil and Gas Sector

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NCIMB's oilfield services can help you to assess the risk of microbially influenced corrosion and ensure your operations comply with environmental regulations.

Customer satisfaction is paramount to our continued success and we strive to maintain customer loyalty by providing high quality cost-effective and timely analytical data and products.



## High quality standards

At NCIMB we understand the importance of quality assurance to the oil and gas industry and are committed to delivering the highest quality analytical results. NCIMB is ISO9001 certified, licensed by the Scottish Environment Protection Agency (SEPA) and FPAL registered. Our oil and gas industry customers include major operating and service companies, as well as independents, and we also work in partnership with well-respected suppliers to deliver a comprehensive service.

## Customer focused experts

At NCIMB we take pride in the levels of service we deliver, and the relationship we build with our customers. Our highly qualified and experienced scientists are available to advise customers on the most appropriate and cost-effective approach to their oilfield microbiology, ecotoxicity and chemical analysis requirements. They are on hand to help you interpret results and understand the methodologies used.

## Protecting your assets

Some commonly occurring microorganisms can cause serious problems in oilfield environments. For example, sulphate reducing bacteria (SRBs) can influence corrosion rates in pipelines, vessels and machinery. Microbial monitoring is therefore an essential step towards safeguarding against corrosion.

Our skilled microbiologists are experts in identifying and quantify the groups of microorganisms that can influence corrosion and cause reservoir souring. We can advise on the most appropriate techniques and have participated in R&D projects as well as undertaking routine analysis of corrosion coupons and biocide testing. We also supply media kits for customers who wish to undertake their own testing.

## Working in partnership

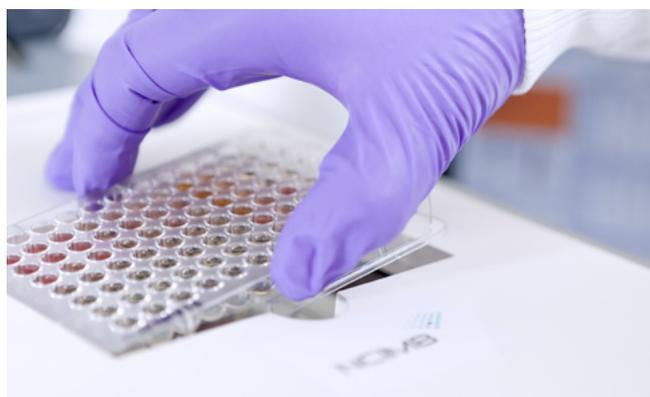
NCIMB partners with corrosion monitoring specialists NECE in the delivery of full microbiological audits and surveys of production facilities.

# We're here to protect your business and support innovation.

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Our microbiologists are experts in identifying and quantifying microorganisms that influence corrosion and cause reservoir souring. We can undertake biocide testing to help you determine the most effective means of control.

For more information about our full range of products and services, please visit our website [www.ncimb.com](http://www.ncimb.com)



## Safeguarding the environment

The oil and gas industry is committed to complying with national and international regulations in order to safeguard the environment and ensure a safe working environment. NCIMB provides a comprehensive toxicity testing and chemical analysis service that can help you to fulfil your environmental obligations.

## Chemical analysis

Services offered include chemical characterisation of scales, barium testing of sediments, zinc and iron analysis and a standard suite of commonly requested produced water and effluent tests. All our chemical tests can be carried out on a wide range of solid and liquid samples.

## Toxicity testing

OSPAR requires full implementation of a risk based approach to testing of produced water discharges from offshore installations by 31 December 2018, and NCIMB's MARA bioassays were recommended by the UK's Department of Energy and Climate Change (now part of BEIS), as part of their preferred approach to achieving this.

## NORM analysis

The Radioactive Substances Act (1993) requires all effluents and waste materials containing NORM to be analysed before disposal.

Our environmental radiochemistry service can undertake both alpha and gamma spectroscopy to report on activity for polonium-210, lead-210, actinium-228 and radium and daughters in a variety of wastes including scales, pig wax, sand, sludge, cuttings and produced water.

## Fuel testing

Microbial proliferation and the presence of contaminants in fuel and fuel components can cause serious problems including under-performance of machinery, filter clogging and microbially influenced corrosion. NCIMB offers quality assured analysis of fuel and fuel components to nationally recognised standards. We can test fuel samples for bacteria and fungi, particulate contamination and water content. We can carry out investigations to aid in solving contamination issues or test for the presence of a suspected contaminant.



## Oilfield microbiology

We identify and quantify microorganisms known to influence corrosion using culture-based methods and qPCR.

Groups of microbes identified include general heterotrophic bacteria; acid producing general heterotrophic bacteria; sulphate reducing bacteria and nitrate reducing bacteria.

We can undertake high throughput sequencing/ metagenomics for a comprehensive picture of the microbial ecosystem within the oilfield.

NCIMB accepts a range of sample types including production fluids, scales, pig wax and NORM contaminated corrosion coupons.

## Chemical analysis

Our service includes barium testing of sediments, zinc and iron analysis, and a standard suite of commonly requested produced water and effluent tests. Analyses include:

- Elemental analysis by mass spectrometry
- Silicon testing
- pH
- Total hydrocarbon content (THC)
- Chemical oxygen demand (COD)
- Biological oxygen demand (BOD)
- Sulphide/sulphate
- Chloride/chlorine
- Dissolved oxygen.

Additional tests are available on request.

## Media kits

We supply media kits for the quantification of sulphate reducing bacteria, general heterotrophic bacteria/acid producing bacteria and nitrate reducing bacteria.

## Fuel testing

We test fuel samples for the presence of bacteria and fungi, particulate contamination and water content, and carry out investigations to aid in solving contamination issues or test for the presence of a suspected contaminant.

## Toxicity testing

NCIMB provides whole effluent assessment as part of a risk based approach to produced water management. Our multispecies microbial toxicity tests MARA and LumiMARA were recommended as part of the preferred approach for companies operating in the UKCS, and we can provide higher order testing to deliver a comprehensive service.

## NORM testing

NCIMB's environmental radiochemistry service undertakes alpha and gamma spectroscopy to report on activity for polonium-210, lead-210, actinium-228 and radium and daughters in a variety of wastes including scales, pig wax, sand, sludge, cuttings and produced water.