



DHI SOLUTION

# DHI ENVIRONMENTAL LABORATORY

## Chemical Testing and Analysis

Our Environmental Laboratory offers a wide range of standardised tests in accordance with international guidelines and standards, as well as tailor-made studies for our clients. Our services are related to environmental monitoring, ecotoxicity, as well as aquaculture and live feed, among others. We also supply you with the highest standards of reporting, delivery and customer care.

### ENVIRONMENTAL MONITORING AND TESTING

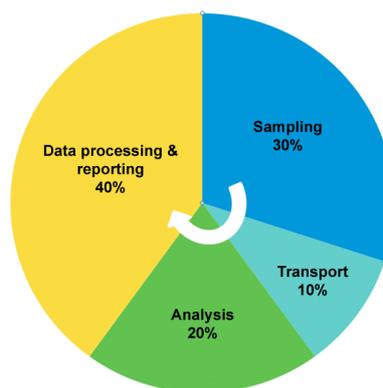
Environmental monitoring and testing is becoming increasingly important for many types of businesses and industries. It aims at reducing potential impacts, such as environmental contamination, health risks to humans and the ecosystem.

At DHI, a properly set up environmental monitoring campaign consists of four phases:

- Accurate sampling by our field team
- Transport of samples to the lab
- Analysis of samples in the lab
- Data processing and reporting by the internal modelling group

Each phase is crucial to the success of a campaign. We ensure proper quality control for each step, from collection to reporting. At the DHI environmental laboratory, we are able to provide a fully integrated and accredited system for environmental monitoring and testing.

We guarantee the best possible service for you thanks to our global knowledge, highly qualified staff and state-of-the-art facilities.



### SUMMARY

#### CLIENT

- Government agencies
- Aquaculture industry
- Port authorities
- Consultants and contractors
- Researchers

#### CHALLENGE

- High quality standards to meet, even at very low detection limits and in a difficult matrix such as seawater
- Cost-inefficiency
- Need to stay up-to-date with the newest techniques
- Application of standard techniques to tropical environments

#### SOLUTION

Following internationally recognised Standard Methods and Operating Procedures

Using modern analytical instruments perfectly tuned to the prevailing conditions

#### VALUE

- Reliable high quality data in difficult measuring conditions
- Optimised testing protocols
- High standard in reporting, delivery and customer care

#### ACCREDITED QUALITY— ISO 17025

Our laboratories are accredited by the well-established Laboratory Quality Management System ISO17025.

Modern analytical instruments, appropriate and approved test methods, stringent quality control and experienced & qualified staff ensure that we supply you with high-quality services.



### HIGH SENSITIVITY, HIGH SELECTIVITY, HIGH THROUGHPUT

Our laboratory is accredited for a number of environmentally relevant parameters in the following matrices:

- Various kinds of water
- Sediment/sand/clay
- Plant materials/leaves

In these matrices, we can carry out physical, organic, inorganic and biological analyses. The tests are carried out using a variety of different microscopes, general laboratory equipment as well as a number of superior analytical apparatuses.

### ELEMENTAL ANALYSIS USING ICP/MS

We use our Inductively Coupled Plasma Mass Spectrometry (ICP/MS) for elemental determinations at very low concentrations. This is particularly challenging in seawater and requires detailed tuning by our experienced staff. We use the ICP/MS on a daily basis for our Environmental Monitoring and Management Plan (EMMP) projects. This helps ensure the environmental safety of Singapore's dredging and reclamation projects.



### ORGANIC COMPOUNDS DETECTED IN OUR FTIR

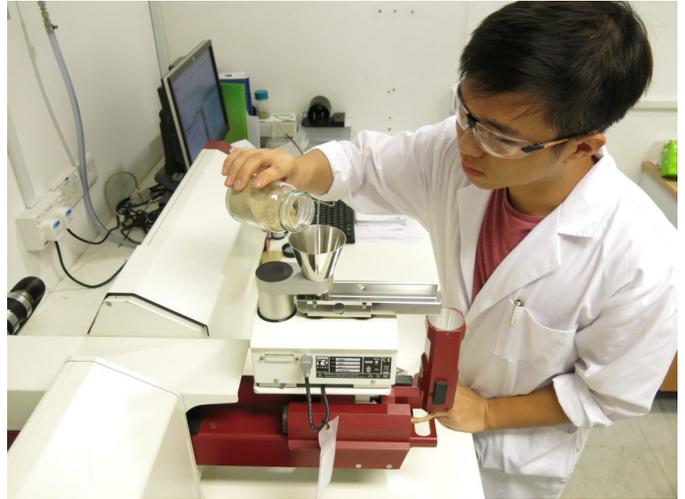
This equipment helps to identify organic contamination and analyses of unknown organic compounds by Fourier Transform Infrared Spectroscopy (FTIR). It is capable of determining oil and grease as well as Total Petroleum Hydrocarbon down to concentrations of  $0.1 \text{ mg L}^{-1}$  or lower. These are crucial concentrations in seawater monitoring as per ASEAN water criteria.

Contact: [info@dhigroup.com](mailto:info@dhigroup.com)

For more information visit: [www.dhi.com.sg](http://www.dhi.com.sg)

### SEDIMENT PARTICLES UNRAVELLED WITH THE PSA

Our Particle Size Analyser (PSA) allows fast and statistically sound determinations of particles even in a very small size range ( $< 0.2 \mu\text{m}$ ). It serves to safeguard reclamation projects and is an important parameter in some of our research projects. The equipment software allows presentation of the data in an appealing way, enabling customisation to client needs and preferences.



### NATURAL NUTRIENT CONCENTRATIONS DETECTABLE WITH OUR FIA

Our continuous Flow Injection Analyser (FIA) serves to analyse nutrients, some of which are present only at very low concentrations in the natural environment. These are particularly hard to detect in low levels in a complex matrix such as seawater. Our skilled technicians have perfectly tuned the instrument set-up, allowing for fast and cost-efficient analyses of this important ecosystem determinant.

