Watercare Laboratory Services

ACCREDITED LABORATORY

Our accredited analytical laboratory provides a complete testing service

Watercare Laboratory Services is one of New Zealand's leading analytical laboratories. We offer our expertise and experience to cater to the analytical requirements of the water and waste industries. We can provide a one-stop shop with a complete range of testing services at competitive prices, throughout New Zealand.

At Watercare we offer

- Friendly, helpful and reliable expert staff
- Flexible service that caters to your needs
- Sample containers, chilly bins and ice packs
- Sampling services tailored to your needs
- Fast and reliable result turnaround
- Electronic reporting and invoicing
- Customised Excel reports
- Transgression reporting
- Competitive prices
- Confidentiality

When quality matters

At Watercare Laboratory Services, quality is of primary importance. To ensure reliable results, we actively participate in proficiency testing programmes. In addition to IANZ accreditation, our laboratory also undergoes stringent audits by international experts that ensure the quality of the testing is consistent with best practice.

Accreditation

- NZS/ISO/IEC 17025 (IANZ)
- MPI recognised laboratory programme (RLP)
- Taumata Arowai Registered Laboratory

ACCREDITED IANZ TESTING LABORATORY

Watercare Laboratory Services

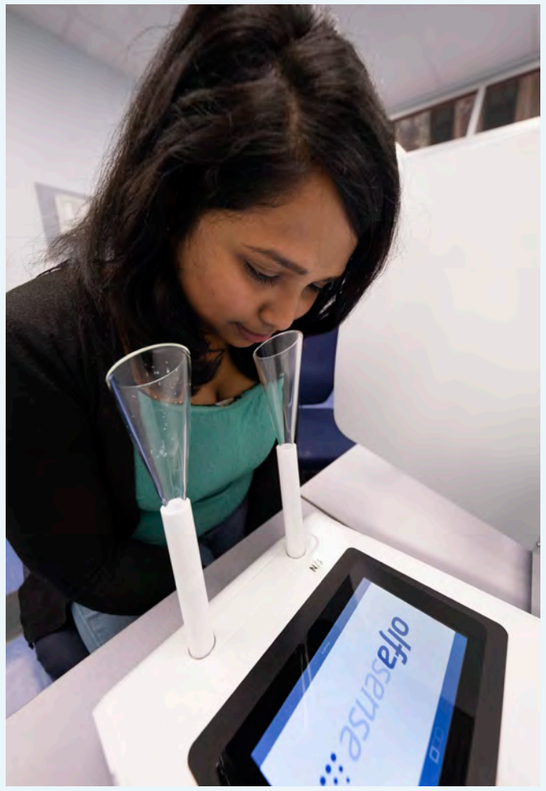
Analytical Laboratory Services

Sampling services

Professional and reliable sampling is an important component of any testing programme, as achieving accurate analytical results relies upon the collection of representative samples.

Sampling services provided

- Drinking water sampling (compliant with Water Services Drinking Water Standards for New Zealand Regulations 2022) - including field testing for free available chlorine (IANZ accredited)
- Wastewater and trade waste sampling – programming and collection of autosampler composite samples and consent self-monitoring requirements
- Groundwater monitoring – piezometer reading and sample collection bores and monitoring wells
- Environmental sampling – stream, lake and harbour water sampling. This service can also include field monitoring or parameters such as dissolved oxygen, temperature, salinity, pH, conductivity and oxidation reduction potential.
- Air quality monitoring – filter changeover and data retrieval for a range of air quality monitoring devices
- Continuous water monitoring – continuous monitoring of parameters eg. pH, conductivity, dissolved oxygen via the sensor plates and telemetry.



General chemistry

The general chemistry department offers an extensive range of tests, and is able to handle high volume and fast turnaround times. The testing services can be generalised to three key components:

- Nutrients (e.g. TN, NO3, NO2, TP, DRP etc.)
- Anions (e.g. chloride, fluoride, sulphate etc.)
- General (e.g. pH, alkalinity, turbidity, suspended solids, BOD, COD, electrical conductivity, etc.)

Microbiology

The microbiology department offers accredited testing services for detection and enumeration of various micro-organisms. These include various coliforms, algae (speciation and bio-volume), cyanobacteria, culturable enteric viruses, helminths, Giardia and Cryptosporidium, Salmonella, Legionella, Campylobacter, Clostridium, Staphylococcus, Pseudomonas and Aeromonas amongst others. The sample matrices include, but are not limited to water, wastewater, biosolids and shellfish.

Inorganic chemistry

The inorganic chemistry department focuses on metal analysis across a variety of sample types. Our laboratory boasts a fully accredited range of metals determined by ICP-MS instrumentation. Our instrumentation allows for the measurement of elements at trace, as well as ultra-trace levels.

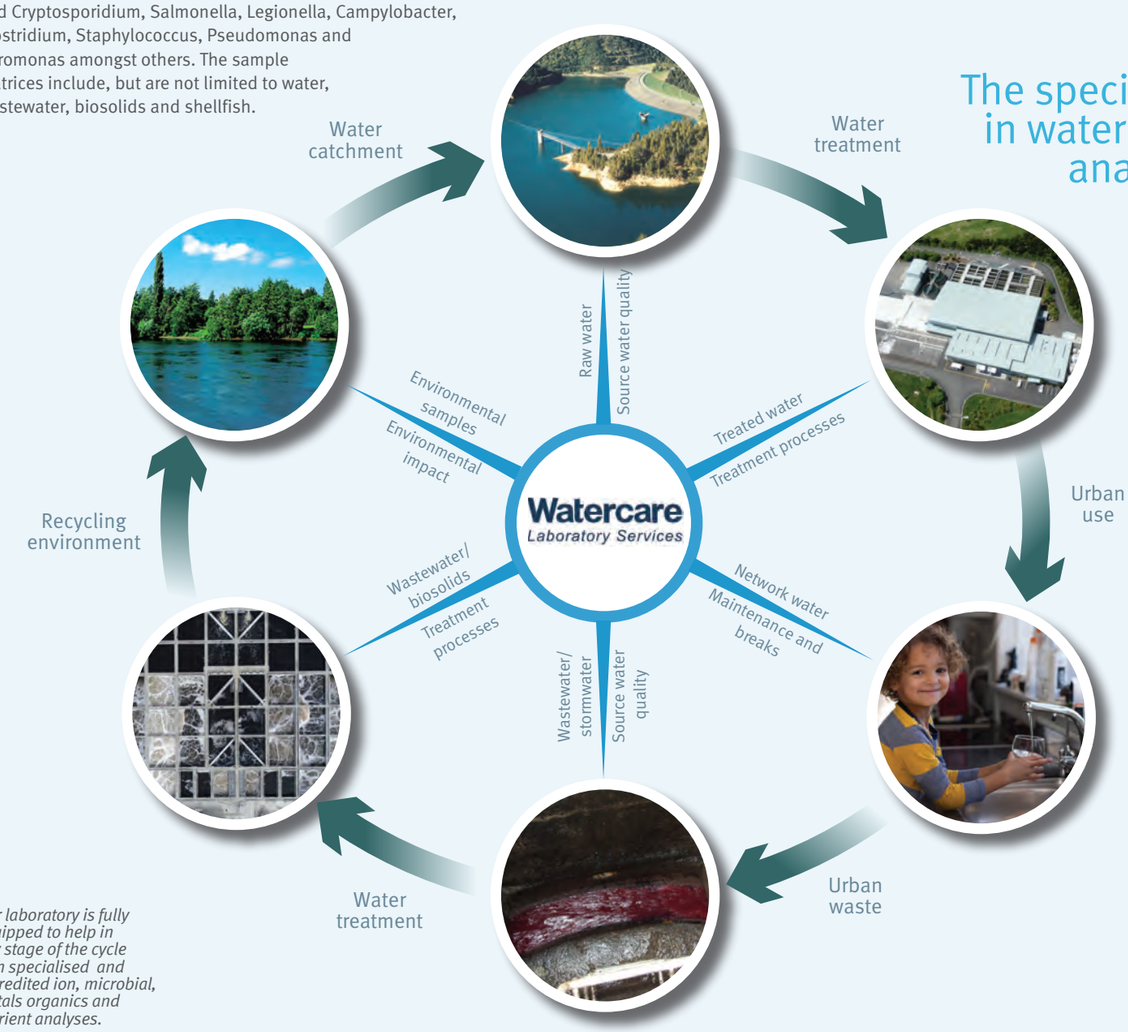
Organic chemistry

Our organic chemistry department offers a substantial testing portfolio. Our GC-MS and LC-MS technologies enable us to provide fast and consistent turnarounds, and detection limits ranging from screen to ultra-trace. Our IANZ accreditation extends through various families of organic compounds, including both solid and liquid sample types.

Air quality

Our Air Quality Group at Watercare specialises in – and is IANZ accredited for – monitoring and assessing a wide range of pollutants and parameters. The air quality team offers services in four areas:

- Odour Assessment: sampling from point sources, solid and liquid surfaces, concentration and offensiveness assessment, nose calibration for field odour scouts, taste and odour of water samples (TON)
- Ambient Air Quality: gases (real time analysers and passive sampling), particulate (PM10, PM2.5), VOC and BTEX, site assessment, installation, maintenance and calibration, meteorology
- Stack Emission: flow rates, velocity, moisture content, temperature; gases (H2 S, SO2, NOx, CO, CO2,O2); particulate (TPM, PM10, PM2.5); aldehydes, VOC's, metals, halides.



Our laboratory is fully equipped to help in any stage of the cycle with specialised and accredited ion, microbial, metals organics and nutrient analyses.

Specialised testing

Microbial source tracking

Identifying bacterial sources is an important step in controlling and managing faecal contamination, and mitigating risks associated with it.

Watercare Laboratory Services (WLS) has developed a molecular technique for this purpose that is referred to as Microbial Source Tracking (MST). In urban areas, faecal contamination arising from humans is likely to be the most dominant source. We have the ability to determine Human, Ruminant, Avian and Canine markers.

Pharmaceutical and personal care products (PPCPs)

We have also developed a chemistry test method to detect a suite of chemical determinands in human sewage at very low levels. These determinands are called pharmaceutical and personal care products (PPCPs).

The presence of PPCP compounds is a strong indicator of the presence of human source sewage and thus human faecal contamination. It also gives strong corroborative evidence for the MST markers to confirm the presence of human source contamination.

PFAS

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS.

PFAS have been manufactured and used in a variety of industries around the globe.

Both are very persistent (often termed forever chemicals) in the environment and in the human body.

WLS has developed chemistry test methodologies to detect a range of PFAS contaminants at low concentrations.

Continuous Water Monitoring

Online monitoring is a major improvement in many types of water monitoring – from State of Environment monitoring to trade waste effluent monitoring, the ability to view real time trends and changes over time gives a much more detailed view than discrete (grab) sampling. We are able to offer a full service of site design, installation, operation maintenance, equipment leasing and data management.

Algae, cyanobacteria, cyanotoxins

Algae plants typically live in aquatic environments. Fresh water algae, particularly phytoplankton, have been used as indicators of water quality. Presence of algae in water can cause unpleasant tastes and odours.

Cyanobacteria (also known as blue-green algae), are a major toxin-producing group. These proliferate and become abundant in warm, shallow, undisturbed surface water that receives a lot of sunlight. These may pose a health risk to humans and animals. Biovolume is also available for algal estimation.

Cyanotoxin testing is one of our capabilities. When blue-green algae cells rupture they may produce algae toxins which can cause harm. LC-MS-MS methodology allows for the accurate detection and speciation of these toxins.

Cyanobacteria – also known as blue-green algae.

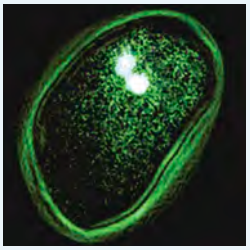
Helminths and enteric virus testing

Helminths are intestinal parasites. They are subdivided into nematodes and cestodes and cause a variety of diseases in humans and animals. In their infective stage, parasites are usually transmitted via such substances as contaminated food, water, soil and biosolids.

Enteric viruses are present in relatively large numbers in faeces and include the adenovirus and enterovirus species. Our laboratory enumerates viable viruses using plaque assays and cell lines (IANZ accredited testing).

Protozoa

Pathogenic protozoa are widely distributed in surface water supplies. They are relatively resistant to chemical disinfectants and can cause water-borne outbreaks. WLS was the first commercial laboratory in New Zealand to be IANZ accredited for Giardia and Cryptosporidium cysts and oocysts analysis. The laboratory has experience in identifying and enumerating these protozoa in a wide variety of sample types.



Giardia with fluorescence, overlaid with DAPI stain.

Taste and odour complaints

Taste and odour compounds are a good indicator of the aesthetic water quality. The human nose can detect undesirable compounds at levels as low as 10ng/L. An appropriate taste and odour regime is an important tool of a water supply monitoring program.

Our accredited odour laboratory has expertise in assessing the presence of taste and odour chemicals (e.g. geosmin), as well as assessing the total odour number (TON).

Watercare Laboratory Services provides a full range of services including:

- Air quality testing
- Analytical laboratory
- Biosolids testing
- Continuous water monitoring
- Data management
- Odour monitoring
- Sampling
- Soils testing
- Stack emissions
- Water testing

Laboratory location:

Auckland

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07-2023

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