UMNGENI-UTHUKELA
WATER · AMANZI

LABORATORY SERVICES



The Laboratory Services Department is a dynamic centre of excellence comprising of four modern ISO/IEC 17025 accredited laboratories (Chemistry, Hydrobiology, Microbiology and Soils) with a long established reputation of meeting international standards.

Equipped with cutting-edge technology and a team of dedicated scientists and technicians, this "state-of-the-art" facility provides a world-class service 365 days a year, in support of the primary business; that is rigorously testing water quality to fulfil uMngeni-uThukela Water's legislative and internal obligations in respect of water quality management.

The laboratories form a powerful hub for the testing of water, in relation to both water treatment and in the associated environment.

Laboratory Services uses LIMS which manages Laboratory data, ensures efficient processes, accurate results and rapid reporting.

As part of Section 30 activities, testing services have been provided for over 35 years to over 3000 external clients, which includes Municipalities, Industries, Consultants, Academic Institutions, Farmers and Private individuals.

uMngeni-uThukela Water encourages you to contact its Client Services Department with any queries and testing requests.

CHEMICAL SCIENCES

Chemistry Laboratory

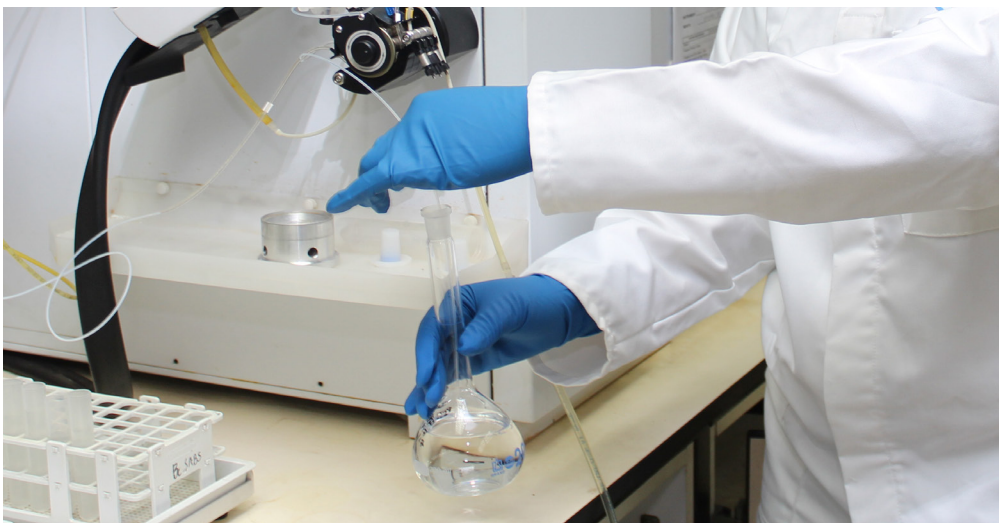
- Conduct testing of a variety of characteristics as required by SANS 241, Wastewater Licences, Catchment assessment and water quality risk based monitoring.

- Boasts high tech instrumentation including; Gas Chromatography, High Performance Liquid Chromatography, Inductively Coupled Plasma Mass Spectrometer and Discrete Analysers amongst others.

Test conducted may be classified into:

- Determination of physical and aggregate properties of water, including colour, turbidity, suspended solids (SS), total dissolved solids (TDS), taste, odour and appearance.

- Characterisation of parameters used for assessment waste water treatment process efficiency and quality of waste water effluents. These include determination of biochemical oxygen demand (BOD), oxygen absorbance (OA), chemical oxygen demand (COD), nutrients and total organic carbon (TOC).



Analysis of the ion content of water, including pH, conductivity, hardness, alkalinity, chloride, sulphate, bromide, fluoride, trivalent and hexavalent chromium.

- Monitoring low concentrations of organic contaminants in source water which causes bad odours in drinking water.

- Analysis of a wide range of trace metallic elements using ICP-OES and ICP-MS techniques in a diversity of matrices including water, wastewater, effluents and sludges.

The laboratory also conducts research aimed at; keeping abreast with technology improvements, development of new methodologies to meet changing legislative requirements and maintaining staff members with current knowledge in the science fraternity.

Soils Laboratory

The soil testing laboratory is ISO/IEC 17025 accredited and conducts testing for both soil and sludge samples in accordance to National Environmental Management Waste Act (NEMWA Act 59 of 2008)
Some of the tests conducted includes:

- Major and Trace Metals: Ca, Mg, Na, K, Fe, Mn, Cu, Zn, Co, Mo, V, Pb, Ni, Cd, Cr, As, Se, Sb, Hg, B, Ba.

- Nutrients: Nitrates, Nitrites, Sulphates, Fluorides, Total Kjeldahl Nitrogen (TKN), Total Phosphates, Chlorides, Soluble reactive phosphates (SRP)

- Wet chemistry: pH, conductivity, % Total solids and % volatile solids

Equipment Name: Spectrophotometer

Sample preparation for chemical oxygen demand (COD), which measures the oxygen equivalent of the organic matter content that is susceptible to oxidation by a strong chemical oxidant.

Equipment Name: Gallery Plus

This equipment is used for the analysis of nutrients such as; phosphates, nitrite, nitrate and ammonia, etc., on surface water, wastewater, industrial effluent, groundwater and potable water.

BIOLOGICAL SCIENCES

Microbiology Laboratory

Provide advisory service and a wide range of microbiological analyses for:

- Public Health monitoring of drinking water supplies
- Process monitoring of water and wastewater works

Catchment management

- Analyses include: Coliforms, *E. coli*, Heterotrophic Plate Counts, Coliphages, *Vibrio cholerae,* Salmonella species, *Cryptosporidium, Enterococcus* and *Giardia*.

Equipment Name: VITEK

For bacterial identification

Equipment Name:

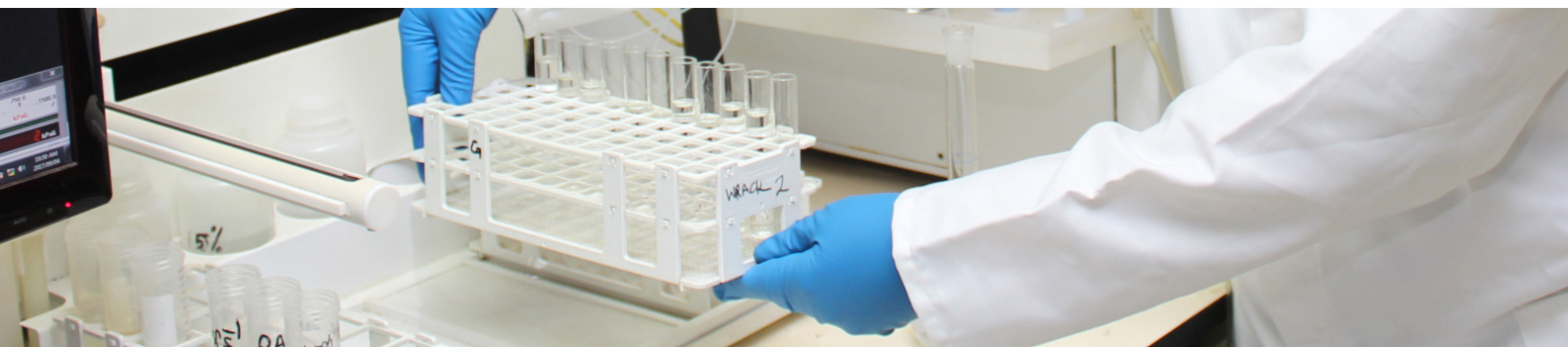
Media for bacterial growth-TCBS and XLD agars for the analysis of *Vibrio cholerae* and *Salmonella*

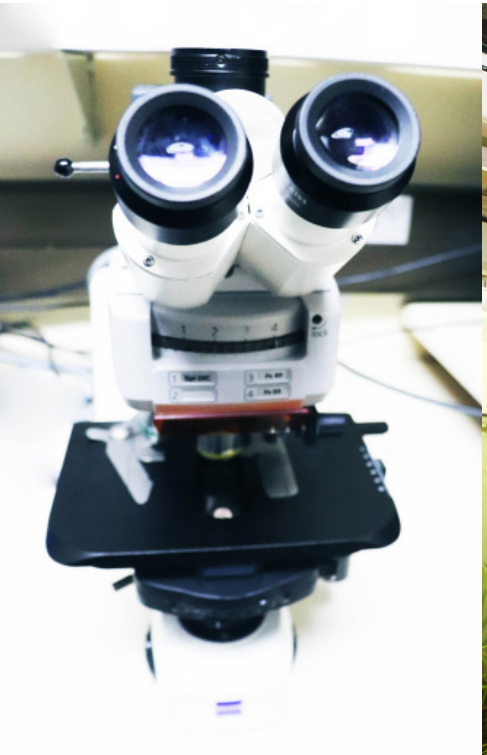
Hydrobiology Laboratory

Includes a wide range of biological, ecological and environmental services.

Monitoring of algae in water supplies and assessment of implications of different algae on the water treatment process.

- Enumeration and identification of aquatic invertebrates, fish and algae.
- Analysis of algal toxins and chlorophyll ‘a’ and phaeophytin ‘a’ concentrations
- Measurement of the toxicity of complex effluents, pollutants and aqueous samples using water fleas, algae, and fluorescent bacteria.
- Assessment of river health using biological techniques, such as SASS5 rapid biomonitoring (Biotic index) analyses.





Microscope for Algal enumeration and identification

Fish tank for fish culturing of Guppies

SOUTH CENTRAL REGION

ADDRESS

310 Burger Street
Pietermaritzburg
3201

E-MAIL

nonceba.sokhela@uuw.co.za
deli.zikhali@uuw.co.za
mannie.sewcharran@uuw.co.za

TELEPHONE

033 341 1344
033 341 1013
033 341 1243

NORTH EAST REGION

Corner of South Central Arterial &
Battery Bank, Alton, Richards Bay
Richards Bay, 3901

nokwazi.jiyane@uuw.co.za
lungile.myeni@uuw.co.za

035 902 1045