

ANALYSIS FOR EFFLUENT, DRINKING/POTABLE, IRRIGATION WATER

Our water analysis range is now comprehensive and includes the following:

- drinking water parameters required by SANS 241
- wastewater parameters required by IPW.

Our ISO 17025 accreditation scope for water has been extended to include the metals by ICP analysis. ICP (inductively coupled plasma) emission spectroscopy is a sophisticated technique that produces excited ions that emit electromagnetic radiation at wavelengths characteristic of specific elements. It is used to detect trace metals such as lead, zinc, magnesium, arsenic etc.

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ISO 17025 accredited parameters:

- pH
- Electrical Conductivity
- Chemical Oxygen Demand
- Sodium Adsorption Ratio
- Microbiological analysis: *Faecal coliforms + E. coli*
- ICP: Ca, Mg, Na, K, Cu, Fe, Pb, Zn, Al, Ni, Co, Cr, V, Mn

Sample volume requirements:

- Effluent water = 300ml
- Drinking + Irrigation water = 750ml

Sampling procedures:

Microbiological analysis:

- Microbiological samples should be collected in sterile plastic or glass bottles. When not using sterile bottles, rinse the bottle first with hot water and also with sample before filling the bottle.

- A sample volume of 200ml should be sufficient for *Faecal coliform*, *E. coli* and Heterotrophic plate count.

Chemical analysis:

- Keep sample bottles closed until they are to be filled.
- Collect a sample that will be representative of the water being tested.
- Remove the cap of bottle and ensure no contamination of cap or the neck of the bottle when filling occurs.
- **Drinking/potable water:** Apply the procedures as described above. Never sample leaking taps where water runs down on the outside of the tap. When collecting water from wells and boreholes, pump water for 5min when a pump is fitted. When sample locations for a distribution system are identified, include dead-end sections and all the different lines in the sample programme.
- **Waste/effluent water:** Sampling frequency may be seasonal for recreational waters, daily for water supply intakes and even hourly for waste water where the quality may vary tremendously. Hold the sample bottle near its base in one hand and plunge it mouth downward below the surface of the water. This is especially important when sampling from a dam, never sample water from the surface.
- **Sample size:** Sample volume should be sufficient to carry out all tests required. A sample volume of 750ml should be sufficient for drinking + irrigation and 300ml for effluent water.
- **Sample identification:** Samples must be sufficiently identified. Important information that could be included for identification are: a) sampling date b) sampling time c) origin of sample d) type of sample.
- **Sample preservation and storage:** Although recommendations vary, the time between sample collection and analysis should, in general, not exceed 6 hours, and 24 hours is considered the absolute maximum. It is assumed that the samples are immediately placed in a lightproof insulated box containing melting ice-packs with water to ensure rapid cooling. Sample temperature should be kept below 10°C for a maximum transportation time of 6 hours. If ice is not available, the transportation time must not exceed 2 hours. It is imperative that samples are kept in the dark and that cooling is rapid.

Sample turn-around time:

- Effluent water: ±2-3 working days
- Drinking + Irrigation water: ±7-10 working days
- We would prefer to receive all water samples at the lab before Wednesdays