

## Biodegradable Dissolved Organic Carbon

Biodegradable Dissolved Organic Carbon (BDOC) represents the fraction of dissolved organic carbon (DOC) that can be mineralised by bacteria.



### NATURAL ORGANIC MATTER

Natural organic matter (NOM) present in raw waters can cause various problems in drinking water if not removed during the treatment process. Biodegradable Dissolved Organic Carbon (BDOC) represents the fraction of dissolved organic carbon (DOC) that can be mineralised by bacteria. The reduction of BDOC in drinking water is an important part of the water treatment process as even low concentrations are sufficient to support bacterial growth in the distribution system.

### THE METHOD

The BDOC method measures the amount of organic matter that is biodegraded by a bacterial inoculum. The inoculum is biologically active sand (sand colonised by bacteria) originating from a water treatment plant filter. A 900 mL water sample is inoculated with 300 g of sand and aerated for the duration of the experiment. DOC is measured at the beginning and then approximately every second day until a minimum value is reached (approx. 10 days). BDOC concentration is derived from the difference between the initial and minimum DOC values. The limit of reporting is 0.2 mg/L.

### APPLICATION

Treatment plant operators can use these results to optimise water treatment processes for removal of BDOC, minimise disinfection requirements and reduce disinfection by-products.

### SAMPLING REQUIREMENTS

A 1 litre sample is required in a glass bottle with no air gap.

If disinfectant residuals are present at time of sampling, AWQC must be informed.

The sample must be transported on ice and analysis must commence within 24 hours of sampling. If a delay in delivery is anticipated, the sample should be filtered through a pre-rinsed 0.45 µm filter to reduce biodegradation in transit and ensure the validity of results.

- As only limited analyses can be undertaken, advance notice is required.

