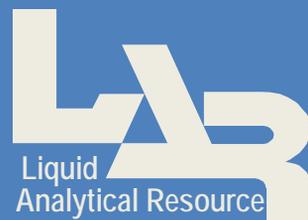


# The QuickTOC. A Hydrocarbon counter



Oil and grease in produced water includes free oil, dispersed oil and emulsified oil. These diverse hydrocarbons can be measured on-line very effectively as Total Organic Carbon and thereby be monitored and controlled.

Liquid Analytical Resource (LAR) offers online analyzers to measure Total Organic Carbon (TOC) or Total Oxygen Demand (TOD) in wastewater with the **QuickTOC** or **QuickCOD**.

TOC is a very cost effective monitoring tool for Extractable Petroleum Hydrocarbons (EPH) and Oil in Water (OIW). It allows rapid on-line monitoring for process control and spill detection. The QuickTOC gives you a summary of the organic carbon content up-dated every 3 minutes. TOC by difference will always measure all of the EPH without any false negatives or drift.

## A demanding process

Every sample distinguishes itself through its differing hydrocarbon content. That's why an analyzer must be able to react to a variety of different combinations of oil in water, delivering quick and reliable results with no risk of false negatives. The QuickTOC uses a measurement method which is based on high temperature combustion at 1200°C. At this high temperature, all organic compounds in a sample are completely oxidized. Subsequently, the QuickTOC reliably determines all carbon irrespective of its origin, its composition or its consistency as an oil, fat or grease. This is a huge advantage.

Salt, particulates and turbidity are also commonly considered to hinder online analysis of oil in water but high temperature combustion methods of analysis are not affected by salts' chemical interferences. Laboratory-style online TOC analyzers can be plugged by the physical presence of high salt concentrations, therefore robust wastewater analyzers are recommended to provide for lower maintenance burdens.

Produced water can contain any hydrocarbons from volatile organic carbons through to bitumen's, therefore a high temperature TOC by difference method of analysis is recommended to reliably measures the true total content. By comparison, Optical methods (UV 254nm) of carbon detection are limited because they only measure double carbon bonds and UV-Persulfate methods can't reliably oxidize the long chain carbons.



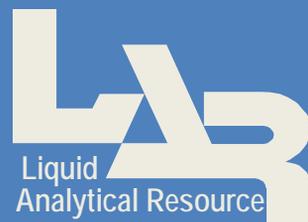
Liquid Analytical Resource, LLC

Call us at (978) 425-0300

E-mail: [info@larllc.com](mailto:info@larllc.com)

[www.larllc.com](http://www.larllc.com)

# OIW and EPH detection



Oil in Water and Extractable Petroleum Hydrocarbon analysis is of extreme importance on refineries, raw oil terminals, oil mixing plants, fracking wells etc. These applications belongs to the most difficult conditions in the wastewater industry. With the QuickTOC, LAR delivers an excellently designed analyzer which easily meets the tough demands that are made upon it. With its multi-stream option, the QuickTOC is particularly suited to the monitoring of influents, rain water discharge, leakages and high impact loads.

## No memory effects

Hydrocarbons have adhesive qualities, which can produce a memory effects on the machine parts that come into contact with the sample. This can severely slow down the response time of a measurement system. Due to its innovative design, where the surface areas of analyzer parts which come into contact with the sample have been reduced to a minimum, it is free from memory effects. Without needing filtration or dilution techniques, waste water samples with up to 50,000 mg /l can be injected into the furnace and then be accurately detected.

With its rapid batch measurement the analyzer can accurately measure low levels of hydrocarbons even after measuring a highly concentrated hydrocarbon sample. As a result, the return to normal background levels can be detected allowing both spill detection and process control.



▪ **Low maintenance and self diagnostics:** The analyzer's thermal oxidation (1,200°C) technique doesn't require a catalyst or hazardous chemicals. It is capable of 3 years of operation without furnace maintenance. A combination of advanced software and internal sensors allow the condition of the analyzer to be carefully monitored

- **Fast response time:** Typical response time is 3 minutes.
- **Multiple streams:** Up to 6 separate sample streams can be fed to the analyzers without any memory effect or cross contamination.
- **Large detection range:** 0 – 80,000 mg/l TOC or COD
- **Suitable for demanding environments:** Large tubing and no filtering allow the analyzers to take even the most challenging of samples. LAR can provide optional enclosures if the application demands that the analyzer be installed in a hazardous atmosphere or where extreme temperatures and humidity are the norm.
- **Service and Support:** We pride ourselves on our customer support so that you get the right tool for the job and can always rely on it. LAR offers a complete analyzer system with an optional factory acceptance test, a site acceptance test, documentation package, personnel training, and onsite service.



Liquid Analytical Resource, LLC

Call us at (978) 425-0300

E-mail: [info@larllc.com](mailto:info@larllc.com)

[www.larllc.com](http://www.larllc.com)