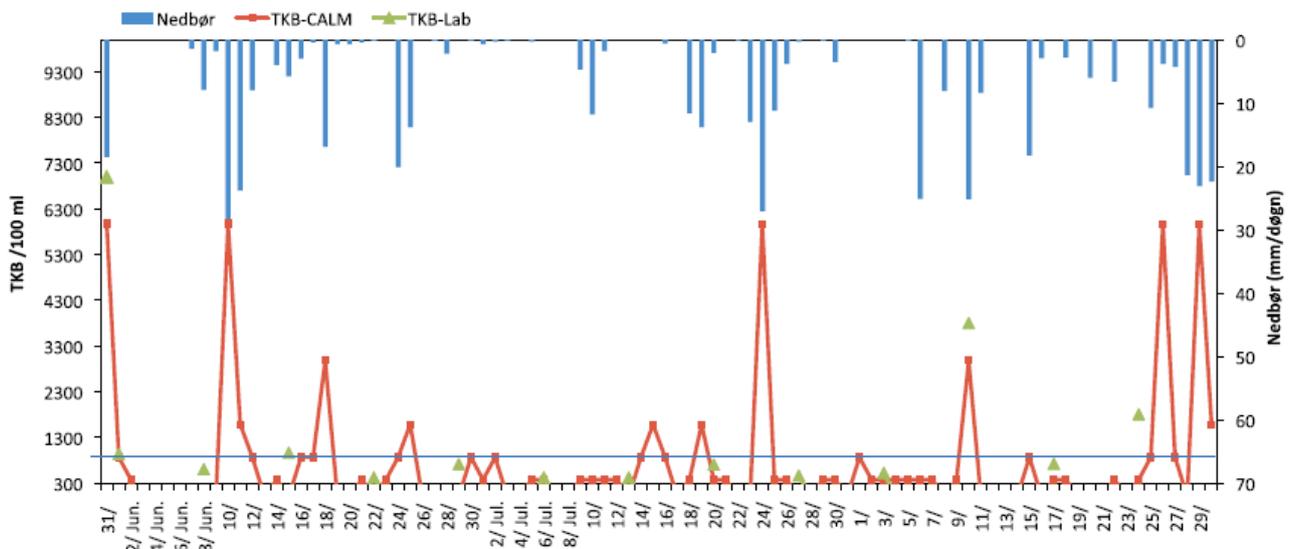


Application note

Recreational Water Monitoring with CALM



Total coliforms in 100 ml measured daily shown with red squares, and an interpolated line, green triangles are weekly lab results of the same, blue poles are the daily precipitation in mm/24 hours, all measured summer 2011¹. The figure clearly shows that the weekly measurements misses severe incidents above the guideline threshold for recreational water indicated by the blue line (1000cfu/100 ml).

Application Overview

CALM was used for daily measurements of faecal coliforms (FC) in the river Akerselva in Oslo during the 2011 bathing season. The purpose was to investigate the variation in the microbiological water quality in the river during summer season, and to probe the suitability for establishing a local beach.

The following years the test frequency of the CALM was increased to twice a day and in some periods increased up to six analysis per day using a 2 hour rapid method.



Technology

The CALM detects and quantifies *E. coli*, thermotolerant coliforms (fecal coliforms) and total coliforms in water. The instrument is fully automated and performs the analysis in shorter time compared to traditional methods. The instrument can run a rapid screening method that takes only 2 hours. For low levels of bacteria the MPN (Most Probable Number) is recommended. MPN analysis takes 10-12 hours.

Results

- Higher test frequency with CALM gives more results over threshold and a considerable enhanced overview of the site variation.
- High level of fecal coliforms usually coincided with precipitation and waste water overflow to river.
- Adjusted test frequencies with CALM was done in order to see how long the contamination episodes lasted.
- The results concluded that the site was not suited as a location to establish a beach.

¹Vurdering av metoder for overvåkning av hygienisk badevannskvalitet. Ingun Tryland et al