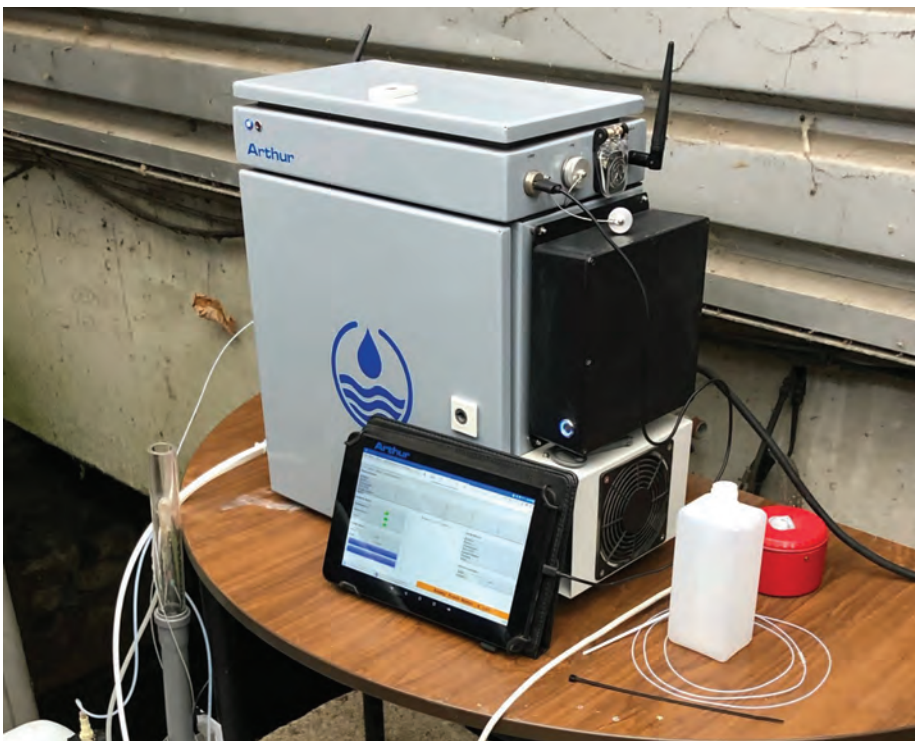


# EAU DE PARIS GETS A JUMPSTART

## *on water sanitation*

The city of Paris faces a series of challenges in the years ahead: besides meeting the needs of an urban population, they must prepare to meet high water standards ahead of the 2024 Summer Olympics.

By Agatha Wong



First provisional installation of a ColiMinder, named "Arthur", at the intake of the drinking water plant in Joinville

In charge of more than 2,000km of water networks, Eau de Paris is responsible for tap water production through the eponymous city. With drinking water produced partly from river water and spring water, the two different water networks produce different qualities of water: tap and non-drinkable; the latter being used for street washing and irrigation. In addition to these responsibilities, the city

has commissioned Eau de Paris to monitor bathing water quality as part of the city government's targets to construct more urban bathing sites, such as the Bassin de la Villette, which has been opened for swimmers in the past few years, along with six more in the works. These efforts are channelled towards the 2024 Summer Olympics.

With these monumental tasks, Eau de Paris faced two distinct challenges: the first challenge laid in the detection of faecal contamination for the Seine or Marne River, which supplies the water treatment plants. The second challenge focused on the monitoring of the quality of produced water in almost real-time.

Furthermore, in lieu of the upcoming 2024 Summer Olympics, monitoring of the Seine for triathlons and other swimming competitions became necessary. The need for sanitary water became prevalent as past Olympic games saw significant E. coli contamination in their natural waters.

With these concerns, Eau de Paris needed a solution that will enable them to meet the sanitation needs of an urban population, as well as anticipating any possible challenges that might arise in the city's water facilities during the 2024 Summer Olympics. The water authority thus turned to VWMS, who offered the ColiMinder as a candidate for their demands.

### THE RACE AGAINST CONTAMINATION

Fully automatic with a fast sample-to-result rate of 15 minutes, the ColiMinder offers specific measurement results for determined indicator organisms such as E. coli and enterococci. It is widely applicable across different aspects of water and wastewater



Left: The ColiMinder "Arthur" monitors the Seine's water to detect probable CSOs from wastewater treatment plants upstream



The first ColiMinder installation in Paris monitors *E. coli* and *Enterococci* levels in bathing water at Bassin de la Villette

treatment, ranging from drinking water, bottled water, wastewater, process water, membrane integrity, to surface and bathing water. For each measurement, the ColiMinder provides three results: The microbiological activity, which reflects the degree of contamination, the transmission of the sample as a measure of the transparency or turbidity of the sample, and the intrinsic fluorescence of the sample.

Depending on the reagent used, the ColiMinder can measure the degree of faecal contamination or total microbiological activity; this parameter is used to monitor the quality of drinking water, but also in mineral water production. In addition, according to VWMS, the system is very robust and low-maintenance: consumables only have to be refilled every 1,000 measurements.

"We were very impressed by the reliability and by the rapidity of the measurements," shared Dr Sophie Haenn, microbiology engineer — R&D at Eau de Paris. "Its reliability was proven through our own evaluation and validation of the ColiMinder measurements, which were conducted by parallel testing with traditional culture-based lab method. The ColiMinder results showed a significant correlation with lab results."

Dr Haenn further added that the flexibility of the ColiMinder was a key factor in the authority's decision in choosing the system, as it can be used in any water type: from drinking water through surface/bathing water. The ColiMinder

has been shown to detect CSO (combined sewer overflow) from a wastewater treatment plant upstream the Seine River. For drinking water, Eau de Paris is using the system not only for raw water intake before chlorination, but also for monitoring produced drinking water after chlorination.

#### HEADED FOR THE FINISH LINE

The multiple benefits offered by the Coliminder thus enabled Eau de Paris to meet the needs of an urban population. Where sanitation is concerned, the water authority was particularly impressed that the ColiMinder could produce results in 15 minutes, as contamination can occur very quickly, posing a danger to the public's health. With the system installed, Eau De Paris can now react swiftly in the event of faecal contamination, allowing them to close the water treatment plant until the contamination has flowed through.

"For the moment, the Coliminder is mostly used in research and in test installations at different locations: at the entrance of our water treatment plants to monitor the quality of the water used to produce tap water, at the exit of the water treatment plant before chlorination. Our drinking water operators are starting to understand that the ColiMinder can be very important by providing the so important information on microbiological water quality in almost real-time, helping them to improve their processes and make them safer and more sustainable," said Dr Haenn.

The installation of the ColiMinder has thus enabled Eau de Paris to respond rapidly to any possible contamination in their waters. More crucially, the installation of this system will assist the water authority to deliver proper, sanitised water for the athletes and participants of the 2024 Summer Olympics. The quality of drinking water, but also the one of water in urban recreation areas is of high importance for the urban population. For safeguarding this, the ColiMinder is a choice solution.

"In times of scarcity, water has to be used in a way that makes sense according to its given quality," said Dr Haenn. This was proven through the second use of the water networks in Paris — non-drinkable water for street washing and irrigation. Though the system had been out of use for almost 20 years, Eau de Paris was able to revive it recently.

"Among other online instrumentation, the ColiMinder has also helped us to understand this network better. Thus, it has been revived and we can now re-use water in respective quality for street washing and irrigating public gardens in Paris instead of using water in drinking water quality for these tasks," revealed Dr Haenn. "Our team responsible for drinking water also increasingly understands how the ColiMinder can help to make processes in drinking water production and distribution more efficient, safer and thus more sustainable." [VWA](#)