SENSING EXCELLENCE

Multisensor

CASE STUDY

Monitoring of Reservoir Feed for Hydrocarbon Contamination

Application Dossier: No. II

Application

Monitoring of Reservoir Feed for Hydrocarbon Contamination

Product

MS1200 – Standard version, 4-20 mA with special tank for very high turbidity events.

MS1200
Oil in Water Monitor

Application

Monitoring of rural watercourse feeding a small reservoir to detect contamination from farm or food processing facilities.

Customer

Water Company, SW England.

Problem

Persistent small contamination events had put the reservoir, which feeds a drinking water treatment plant, at risk. Low level contamination preceded a large event in late 2016.

Product

MS1200 – Standard version, 4-20 mA with special tank for very high turbidity events.

Installation Facts

The first instrument was installed in an outbuilding and fed by a pump which is also used for other instrumentation. Water was analysed for hydrocarbons and VOCs every 15 minutes and, if there was an increased level, the instrument was used to close a sluice gate via the alert relays, diverting the contaminated water until the event has passed.

After many years of operation, the original MS1000 (which can be seen on the last page) was replaced by a newer MS1200.

The MS1000 and MS1200 installation saved the reservoir from serious contamination during a large event which resulted in an alternative source being piped to feed the reservoir.

A picture of the unit installed in the outbuilding. The unit controls a sluice gate which diverts flow away from the reservoir in the event of contamination.

Did you know?

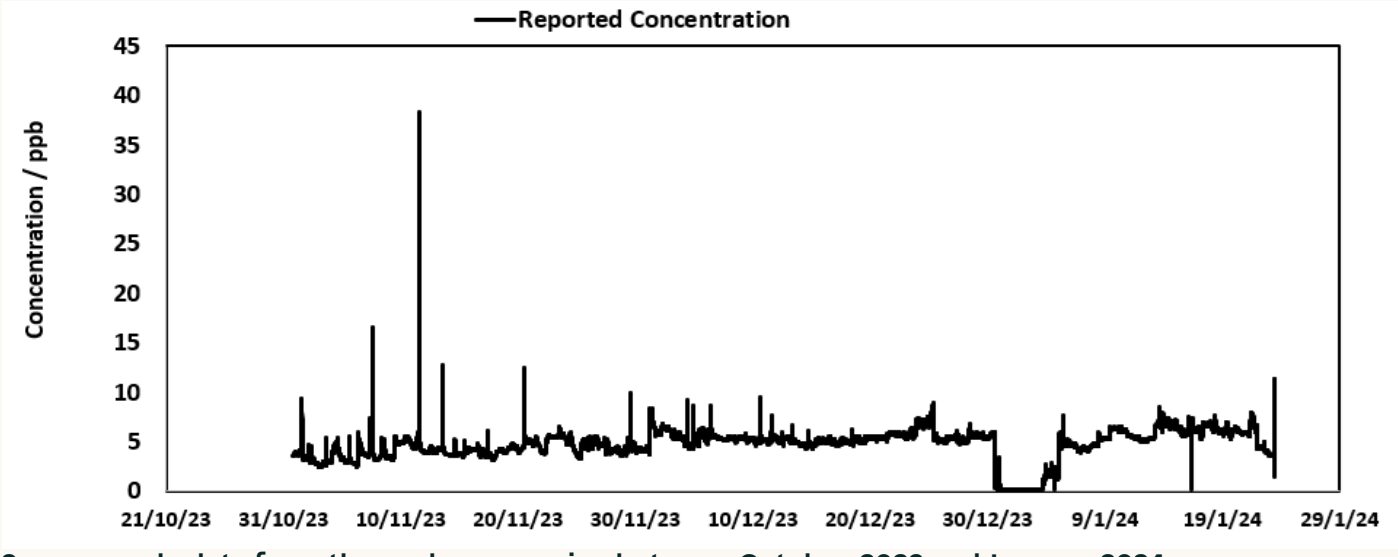
Reservoirs play a crucial role in water intake systems, acting as large-scale storage and supply sources that help regulate water availability for various uses, including drinking water, agriculture, and industrial processes.

By storing water reservoirs can stabilize fluctuations in supply due to seasonal variations, ensuring a steady and manageable flow for treatment facilities downstream.

This function is vital for regions with variable rainfall patterns, as reservoirs serve as a buffer during dry periods, maintaining water security for local communities.

Despite their benefits, reservoirs can be susceptible to contamination from a variety of sources.

One significant concern is the introduction of **volatile organic compounds (VOCs)** into the water. VOCs are a group of chemicals that can evaporate into the air and dissolve in water, often arising from both



Some sample data from the analyser running between October 2023 and January 2024.

The first analyser installed at this site was the instrument S/N MS1000-01-000101; it was later upgraded with a newer MS1200 (MS1200-01-000117).

natural processes and **human activities**. In reservoirs, potential sources of VOC contamination include runoff from nearby agricultural lands, **industrial discharge**, and **urban stormwater** that may carry pollutants such as **pesticides, herbicides, and petroleum byproducts**.

Addressing VOC contamination in reservoirs requires proactive management, regular or on-line water quality monitoring, and preventive measures to reduce pollutant runoff and organic accumulation.

By controlling these risk factors water management authorities can ensure reservoirs continue to provide **safe, clean water** for communities while minimising the health and environmental impacts of VOC contamination.

Why Multisensor?

The customer needed a system which was not affected by the high turbidity in the water source during heavy rainfall events. Additionally, Multisensor worked very closely with the customer to remove sample feed issues which were causing contamination of the sample.

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For more information

Visit: www.multisensor.co.uk
Contact: info@multisensor.co.uk

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HEAD OFFICE
UNITED KINGDOM

Multisensor Systems Ltd.
Alexandra Court
Carrs Road
Cheadle
SK8 2JY
United Kingdom

T: +44 (0)161 491 5600
E: info@multisensor.co.uk

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Multisensor Systems is a developer and supplier of Water and Gas Analysers specialising in oil in water and hydrocarbon analysers, oil in water detectors, VOC monitors and THM analysers based in the United Kingdom.

Multisensor Systems Ltd., Alexandra Court, Carrs Road, Cheadle, SK8 2JY, United Kingdom

CHANGELOG

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