



CASE STUDY

# Monitoring a High Iron and Manganese Content Borehole for Hydrocarbons

Application Dossier: No. VI

## Application

# Monitoring a High Iron and Manganese Content Borehole for Hydrocarbons

### Product

MS1200 – Standard version, 4-20 mA

**MS1200**  
Oil in Water Monitor



## Application

Monitoring a High Iron and Manganese Content Borehole for Hydrocarbons.

## Customer

Water Company, UK.

## Problem

The customer wanted to monitor hydrocarbon levels in a borehole for drinking water. The customer had attempted to use a UV based system but found that the system would only last a few days before ferric and manganese deposits stopped the system from functioning.

## Product

MS1200 – Standard version, 4-20 mA.

## Installation Facts

The instrument was installed at the head of the borehole. Hydrocarbon levels less than 10 ppb were present. The system was verified with diesel concentrations of 6 and 18 ppb. These were used to validate the operation on-site. The system has operated without failure since installation, showing the system to be immune from the effects of high iron and manganese content water.

Following another contamination event at a different site the local water company decided to move the first analyser to a new location and purchased a new one for this location.



**An earlier version of the MS1200 installed on site.**

## Did you know?

Diesel contamination in water supplies poses significant health risks to both humans and aquatic ecosystems.

Diesel fuel contains a complex mixture of hydrocarbons, including benzene, toluene, xylene, and polycyclic aromatic hydrocarbons (PAHs), many of which are toxic and carcinogenic.

When diesel enters water sources, either through spills, leaks from underground storage tanks or runoff, it can contaminate drinking water, making it unsafe for human consumption.

Ingesting even small amounts of diesel-contaminated water can cause a range of acute health issues, such as nausea, vomiting, dizziness, headaches

and respiratory problems. Long-term exposure to diesel contaminants, particularly benzene and PAHs, is linked to serious conditions like liver damage, kidney failure and an increased risk of various cancers, including leukemia.

Additionally, diesel contamination can have devastating effects on aquatic life. The toxic chemicals in diesel disrupt the biological functions of fish and other organisms, leading to reduced reproductive success, impaired growth, and, in severe cases, death. The presence of diesel in water can also lower oxygen levels, further stressing aquatic ecosystems and reducing biodiversity.

The persistent nature of diesel pollutants, combined with their ability to bioaccumulate in the food chain, can result in long-term ecological damage. The health threats posed by diesel in water supplies underscore the urgent need for rigorous environmental regulations, proper spill management, and rapid response to contamination incidents.



Contamination from iron and manganese present in the sampling system; this shows the importance of Multisensor Systems' contactless measurement technique that can work in these environments.



A new instrument was installed with a semi-transparent sampling system that allowed easier inspection.

## Why Multisensor?

The MS1200 works very well at low ppb levels which are what is expected in a borehole and is insensitive to minerals in the water source.

 **Multisensor**

## For more information

Visit: [www.multisensor.co.uk](http://www.multisensor.co.uk)  
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Front Image Credit: Alison Day, The Exe Valley

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## CHANGELOG

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