SENSING EXCELLENCE

Multisensor

CASE STUDY

Monitoring the intake of a desalination plant for hydrocarbon contamination

Application Dossier: No. XVI

Application

Monitoring the intake of a desalination plant for hydrocarbon contamination

Product

MS1200-01-SYS – Standard version, 4-20 mA, continuous measuring

MS1200
Oil in Water Monitor

Application

Monitoring a seawater intake for hydrocarbons to protect the operations in a desalination plant.

Customer

Desalination plant, Algeria.

Problem

The intake is near to a port where there is the occasional risk of hydrocarbon contamination. If contamination happens the RO membranes can be damaged and the quality of the water can be affected.

Product

MS1200-01-SYS – Standard version, 4-20 mA, continuous measuring.

Installation Facts

In June 2020 Multisensor Systems was contacted by an Algerian desalination plant looking for a way to protect its intake. The intake is an open channel intake that takes water from the sea. The unit is installed next to the intake (less than 10 m from the channel), in a specially designed cabinet, and water is circulated through the tank continuously through the transparent tank.

The instrument is connected to the local DCS system using the 4-20 mA output and alarms are set up at 20 ppb (low level alert) and at 50 ppb (high level alert).

The COVID pandemic meant that Multisensor System could not send an engineer on site for the commissioning so remote support was provided throughout the installation and the instrument was successfully commissioned.

A picture of the unit installed in the outbuilding.

Did you know?

Monitoring volatile organic compounds (VOCs) at the intake of a desalination plant is crucial for ensuring the long-term performance and longevity of reverse osmosis (RO) membranes.

RO membranes are sensitive to various contaminants, including organic compounds, which can accumulate on their surface, leading to fouling. VOCs, which are often present include discharges from shipping in seawater due to industrial runoff, agricultural discharge, or natural occurrences, can be especially damaging to these membranes. When VOCs interact with the membrane material, they can cause irreversible damage, including chemical degradation or pore blockage, which impedes water flow and reduces the membrane's efficiency. By monitoring VOCs at the intake, plant operators can take preventative measures to protect the membranes from such harmful substances.

Furthermore, monitoring VOCs at the intake enables early detection of contaminants that may compromise the desalination process.

Some VOCs may also have toxic or carcinogenic properties, making it essential to detect and remove them before they are concentrated in the final output. Regular monitoring helps ensure that the desalination plant operates within safety and regulatory guidelines, providing clean, potable water while minimizing environmental and health risks.

Why Multisensor?

The customer needed a reliable way to measure hydrocarbons in seawater and wanted a low maintenance system.

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For more information

Visit: www.multisensor.co.uk
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Front Image Credit: Jacob Vanderheyden, Carlsbad Desalination Plant

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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.

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