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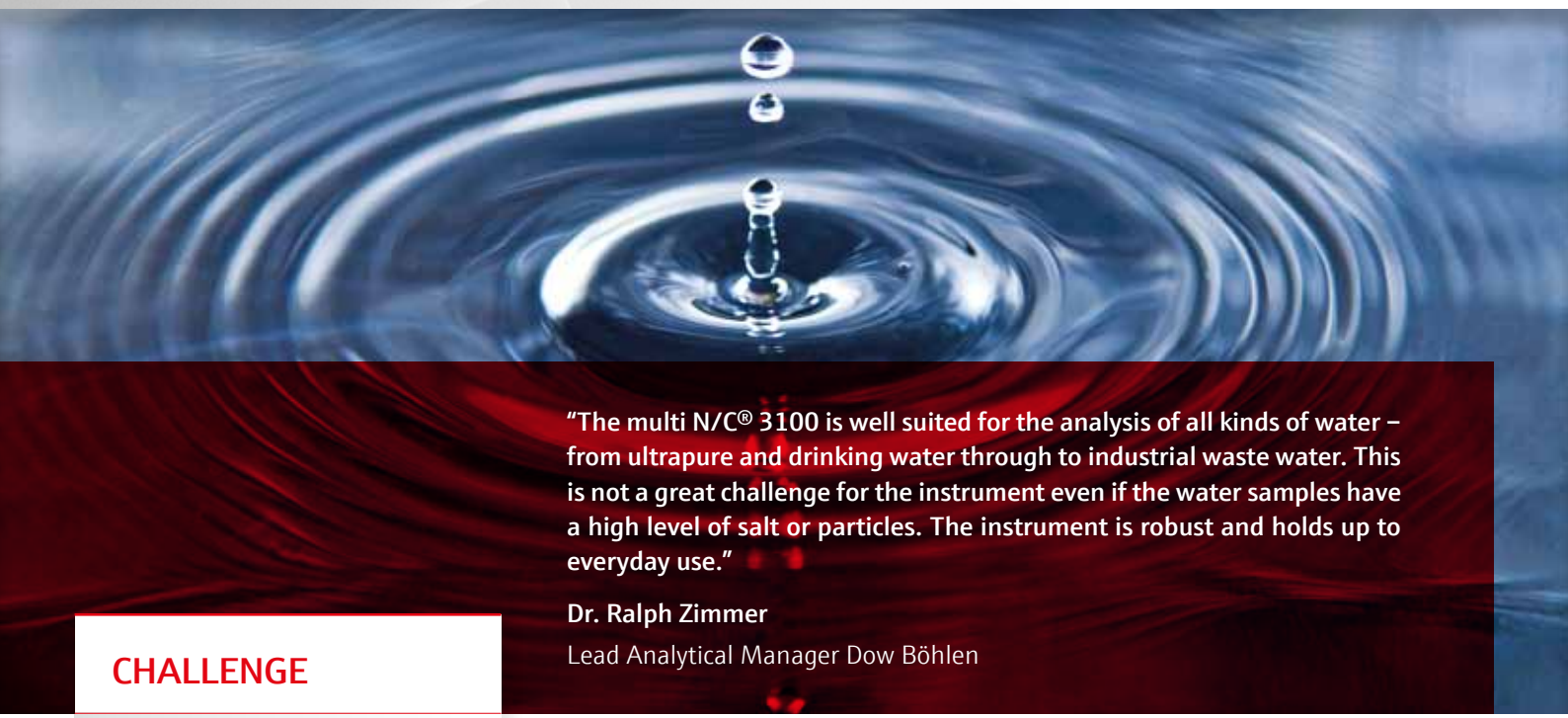

"The multi N/C® 3100 is well suited for the analysis of all kinds of water – from ultrapure and drinking water through to industrial waste water. This is not a great challenge for the instrument even if the water samples have a high level of salt or particles. The instrument is robust and holds up to everyday use."

Dr. Ralph Zimmer
Lead Analytical Manager Dow Böhlen

CHALLENGE

- Examination of organic contamination of waste water
- TOC analysis to uphold environmental protection

SOLUTION

- TOC/TN_b analyzer multi N/C® 3100

BENEFITS

- Determination of two environmental parameters at once: TOC & TN_b from a single sample injection
- System suits to industrial waste water even with a high level of salt or particles
- High sensitivity down to the lowest ppb range

THE DOW CHEMICAL COMPANY

Active around the world, the Dow Chemical Company (Dow) has been employing Analytik Jena AG instruments for the past 15 years. Founded in 1897, Dow is one of the world's leading manufacturers of basic and special chemicals and high-performance materials. Based in Midland, Michigan, it is one of the ten largest U.S. companies in Germany. Dow has also been active in Central Germany since 1995, continuing the region's strong tradition in plastics and chemical manufacturing at sites in Schkopau, Böhlen, Leuna, and Teutschenthal.

AN ANALYZER TO PROTECT THE ENVIRONMENT

At Dow, one important basis of support when it comes to upholding environmental protection standards is the TOC analyzer multi N/C® 3100. The company uses the analysis system to examine waste water for the presence of contaminants. And two parameters are particularly important in the process of examining water quality: Organic contamination as quantified by the determination of total organic carbon (TOC) and contamination with nitrates, nitrites, ammonium salts, and organic nitrogen compounds, as represented as total nitrogen bound (TN_b). Both parameters can be determined easily and rapidly using the Analytik Jena multi N/C® 3100.

DETERMINING TWO PARAMETERS AT ONCE

The water sample is injected into a high-temperature reactor. All the carbon compounds are rapidly converted to carbon dioxide at approx. 800 °C, with a catalyst supporting the oxidation process. The carbon dioxide thus created is analyzed and quantified using a non-dispersive infrared sensor (NDIR). The nitrogen compounds in the water sample are converted into nitric oxide in the high-temperature catalytic oxidation process, with the support of a chemiluminescence procedure. This makes it possible to determine both TOC and TN_b from a single sample injection. As Dr. Ralph Zimmer, lead analytical manager at Dow´s Böhlen site, explains: "The instrument is well suited for the analysis

TOC/TN$_b$ analyzer multi N/C® 3100

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COMPETITIVE ADVANTAGES FOR THE CUSTOMER

- 10-year guarantee for corrosion free Focus Radiation NDIR detector®
- Self-checking hardware and software system: No scattered results and false low readings
- Both TOC and TN$_b$ determination from a single sample injection
- Short reaction times of support
- Excellent cooperation with regular contact people

of all kinds of water – from ultrapure and drinking water through to industrial waste water. This is not a great challenge for the multi N/C® 3100 even if the water samples have a high level of salt or particles. The instrument is robust and holds up to everyday use." The Focus Radiation NDIR detector®, the heart of the analyzer, is well protected against corrosion. Analytik Jena backs up its long lifespan with a ten-year guarantee.

A self-checking hardware and software system ensures that the device provides reliable results around the clock. The system examines everything from gas flow to detector status. Gas leaks and flow fluctuations are thus noticed immediately and scattered results and false low readings are eliminated. This reliability and robustness are unique selling points on the analytical measuring technology market. Such a low-maintenance system that holds up to everyday industrial use was, however, not a matter of chance: Analytik Jena and Dow work closely together so that the wishes and experience of the technicians can be taken straight into account in the developmental process.

"MOST EFFECTIVE TECHNOLOGIES"

It all began with a leap of faith: When Dow placed its first order with Analytik Jena before the turn of the century, Analytik Jena had just begun to gain traction in its first markets. The products and technologies of the new company, whose founders emerged from the formerly state-owned VEB Carl Zeiss Jena, were, however, an immediate success. Analytik Jena is now an established company and the companies of the Dow Group make use of analytical measuring technology from Jena at their sites all around the world in places such as Spain, the Netherlands, the United States, Thailand, and Kuwait. Products from the Analytik Jena portfolio can be found on Dow's list of most effective technologies. As Dr. Ralph Zimmer explains: "Short reaction times and the excellent cooperation with regular contact people are not only a great help for my lab but for me personally as well."

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