

SIMONA® PP-H AlphaPlus® pipes for largest water treatment plant run by the Trollmühle Municipal Water Board



Top: Facility building of Trollmühle Municipal Water Board; Bottom left: Set of pumps for water softening; Bottom right: Regeneration and bypass pumps.

The largest Uranex plant to date for the removal of uranium and one of the largest Carix plants for partial desalination was put into operation by Trollmühle Municipal Water Board in Windesheim at the end of 2011. SIMONA supplied PP-H AlphaPlus® pipes for the water treatment plant.

The project at a glance

Project

Construction of a water treatment plant to reduce the levels of uranium, nitrates and sulphates

Client

Zweckverband Wasserversorgung
Trollmühle

General contractors

Veolia Water
VWS Deutschland GmbH
Krüger Wabag

Subcontractor

IKS Kunststoff- und Stahlverarbeitungs GmbH, Ingelheim

Technical support

SIMONA AG, BU Piping Systems, Kirn

Products used

- SIMONA® PP-H Alpha Plus® pipes
- SIMONA® PP fittings/flanges

Time of project

February 2011 to September 2011



From left to right: Raw water filter system; branch bypass; outlet and regeneration line

SIMONA® PP-H AlphaPlus® pipes for uranium removal and partial desalination

Initial situation

A series of tests conducted by the state authorities indicated that the geologically related level of uranium in the water provided by Trollmühle Municipal Water Board was too high and had to be reduced because uranium in relatively large quantities has a toxic effect. Compliance with the revised Drinking Water Ordinance was another requirement. It specifies a uranium limit of 10 µg/l (Specification from Federal Environment Agency).

Task

In the first stage the level of uranium in the drinking water was to be reduced by the treatment plant and in the second stage a partial desalination process was to be performed in order to reduce the levels of nitrates and sulphates.

For this purpose the pipe material had to have the following properties:

- High chemical resistance
- Maximum stress crack resistance
- Reliable corrosion resistance
- Good hydraulic characteristics due to smooth surfaces inside the pipes

Solution

The properties of SIMONA® PP-H AlphaPlus® pipes, such as high chemical resistance and reliable corrosion resistance, provided crucial benefits for use in the water treatment plant. The Trollmühle Municipal Water Board facility was able to comply with the provisions specifying soft, uranium-reduced water and a reduction in the levels of nitrates and sulphates. At the same time, the requested level of uranium was considerable below target.

In addition to a desired improvement in the quality of water the plant also provides tangible benefits for the 42,000 local inhabitants in terms of its overall environmental impact. By reducing the hardness of the water, it was possible to limit the use of environmentally harmful detergents, cleaning agents and deliming agents by a substantial margin.

SIMONA® PP-H AlphaPlus®

Properties

- High chemical resistance
- Maximum stress crack resistance
- High impact resistance
- Reliable corrosion resistance
- Fine microstructure and stable crystalline structure
- Good hydraulic characteristics due to smooth surfaces inside the pipes

Range of products

- Pipes
- Fittings
- Electrofusion welding fittings

Further information

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