



# Sorsele municipality install full-scale micropollutant treatment solution

**Mellifiq O-GAC™ process solves  
imminent environmental  
problem at the world's Northern-  
most wastewater treatment plant  
with API removal technology**

**MELLIFIQ**

# Sorsele municipality, Sorsele, Sweden

*The 8,000-population municipality located near the arctic circle, takes great pride in their motto “a small name in a large place”. It is rich in salmon fishing, kayaking and hosts a number of protected animal species. Hence, preserving the environment is of utmost importance to the local decision makers. Sorsele municipality has worked intensively with eco-tourism and sustainability for many years and continues to be a driving force to sustain a thriving environment.*

## Facts

Name:	Sorsele municipality
Location:	Sorsele, Sweden
Industry:	Public utility
Challenge:	Treatment of active pharmaceutical ingredients (API) and improving treatment of COD and BOD
Project value (EUR):	700,000

## Solution:

Mellifiq delivery:	Wastewater treatment plant extension with a tertiary treatment process
Performance:	94% pharmaceutical residues removal and 25% reduction in BOD, COD, TOC and DOC at EUR 0.03/m <sup>3</sup> operational costs
Capacity:	30 m <sup>3</sup> /hr
Footprint (m <sup>2</sup> ):	50 m <sup>2</sup>



## The problem

The municipal wastewater is handled centrally at Sorsele wastewater treatment facility and serves the entire region. It treats wastewater using a grit trap complemented with primary sedimentation and phosphorus coagulation chemical dosing – a very basic system which needed upgrading, commensurate with preserving the water quality in the recipients. Further, such a basic configuration, with its roots from the plant construction decades ago, is not able to manage the emerging problems of pharmaceutical residues. An additional challenge is to maintain maximum treatment levels were the highly variable seasonal flow changes, due to the massive spring melt water flows.



*Aerial view of Sorsele.*

## The Solution

Utilizing the wealth of experience of public utility wastewater management team and Mellifiq's leading engineering expertise in complex wastewater treatment challenges, a complete full-scale solution was developed, adapting to water infrastructure conditions on site. Mellifiq implemented a pre-filtration system to manage the elevated suspended solids and dissolved organic material concentrations due to the lack of a secondary biological treatment step.

In addition, an advanced Ozonotech RENA Tellus X ozonation system and Water Maid FlexKarb C filter polishing process was implemented to ensure maximum performance and operational redundancy. The solution was integrated into a 20 ft containerized thermal isolation system and a pump system for process water supply.



*Exterior view of the containerized plant extension.*



## Evaluation

The complete plant extension, acting as a de facto tertiary treatment process, was constructed in less than six months, followed up by performance testing during three months in 2021, and has been in operation since then. Not only do the results show a drastic 94% reduction in total pharmaceutical residues concentrations, BOD, COD, DOC and TOC were reduced by more than 20%, boosting the overall wastewater treatment performance.

In spite of the relatively high contamination levels of the feedwater, total specific energy costs were less than EUR 0.03/m<sup>3</sup>.



*Internal view of the integrated filtration and ozonation system.*

# About Mellifiq

Mellifiq is a multi-awarded environmental service company group, that has since the early nineties evolved into a world leading system and solution provider with multiple groundbreaking applications for industrial, municipal, and real estate clients. We supply cutting-edge technologies to manage the most sophisticated air, water, and energy challenges.

Mellifiq offers a complete range of air and water treatment technologies and solutions across multiple industries such as processing industry, energy sector, food and beverage, pharmaceutical, wastewater treatment and commercial real estate.

Mellifiq offers strong and renowned brands, such as Ozonotech, Nodora and Water Maid, and world-class engineering services combined an excellent track record of more than 40 years of innovation. We help our clients achieve the most efficient and sustainable solutions while creating the maximum value for their businesses.

With several business units across Europe, Mellifiq is headquartered in Stockholm where research and development, production, QA and certification all take place. Our unique technology and our extensive expertise have made us the Center of Excellence for the world's most complex projects, and a global player with installations on all six continents.

Everyday millions of people rely on our solutions for ventilation, disinfection, sanitation, and odor control. We are committed to raising the bar for the concept of clean and the industry standard for engineering, technical services and general contracting.

For additional information, visit our website at [www.mellifiq.com](http://www.mellifiq.com)

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