

AxoPur® System Solves Tough Train Washwater Contamination

**Property owner upgrades to a
superior electrocoagulation
solution for challenging
washwater treatment**

MELLIFIQ

Logistics, Malmö, Sweden

In this project, we are partnering with a property owner who specializes in properties near railways. This company plays a vital role in promoting sustainable transportation by advocating for properties that support increased passenger train travel and higher volumes of goods transported by rail. Additionally, they provide facilities for train washing, ensuring the sustained operation and efficiency of the rail system.

Facts

Location :	Malmö, Sweden
Application:	Removal of emulsified oil and transition metal ions
Industry:	Logistics

Solution:

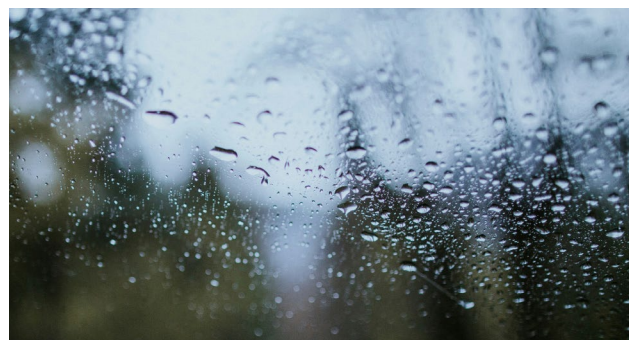
Mellifiq delivery:	The AxoPur system includes AxoPur reactors, each with a hydraulic capacity of 2 m ³ /h for redundancy, a flotation unit, and an intermediate tank for storing water from the first round of purification awaiting the second round before being discharged
Capacity:	4 m ³ /h
Energy consumption:	3 kWh/m ³
Performance:	Reduction of Oil index 98 %, Cadmium 95 %, Lead 96 %, Zinc 95 %, Copper 99 %, Chromium, 99 %, Nickel 75 %, Suspended solids 90+ %

The problem

Trains require regular cleaning, but urgent action is sometimes necessary, especially in cases of vandalism, such as scribbling or incidents like collisions with animals. Without thorough cleaning, the train may not be permitted to return to service.

Our client provides train washing facilities at the Malmö depot, which features two types of washers: one for standard cleaning and another for handling incidents such as scribbling or collisions. Washwater requiring treatment is formed in both cases. Evidently, the latter is much more difficult to clean.

Initially, our client selected a standard electrocoagulation system to address both needs, but the results did not meet expectations and failed to comply with the required standards.



Train cleaning at Malmö depot includes routine washes and handling urgent incidents to keep services running smoothly.



Our client provide facilities for train washing, ensuring the sustained operation and efficiency of the rail system.

The solution

The wastewater to be treated appeared manageable, as supported by the results of a pilot project. The new system had to fit into a space-constrained building and AxoPur met this requirement.

AxoPur exceeded expectations in treating heavily contaminated wastewater, achieving strict ABVA standards (General Regulations for the Use of the Public Water and Sewer System), after just two subsequent loops. Even with the most polluted water, the system consistently met these rigorous standards, whereas the previous electrocoagulation system struggled with even less contaminated wastewater.

Evaluation

The implementation of the AxoPur system at the Malmö depot proved to be an extremely effective solution for treating the contaminated wastewater from trains.

It significantly reduced key contaminants—including cadmium, lead, zinc, copper, and chromium—while maintaining low energy consumption. With a capacity of 4 m³/h, it efficiently handled the depot's high wastewater volume. Its compact design allowed seamless integration into the existing infrastructure despite space constraints.



The solution included AxoPur reactors, a flotation unit and an intermediate tank, seamlessly integrated into the existing building.

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

