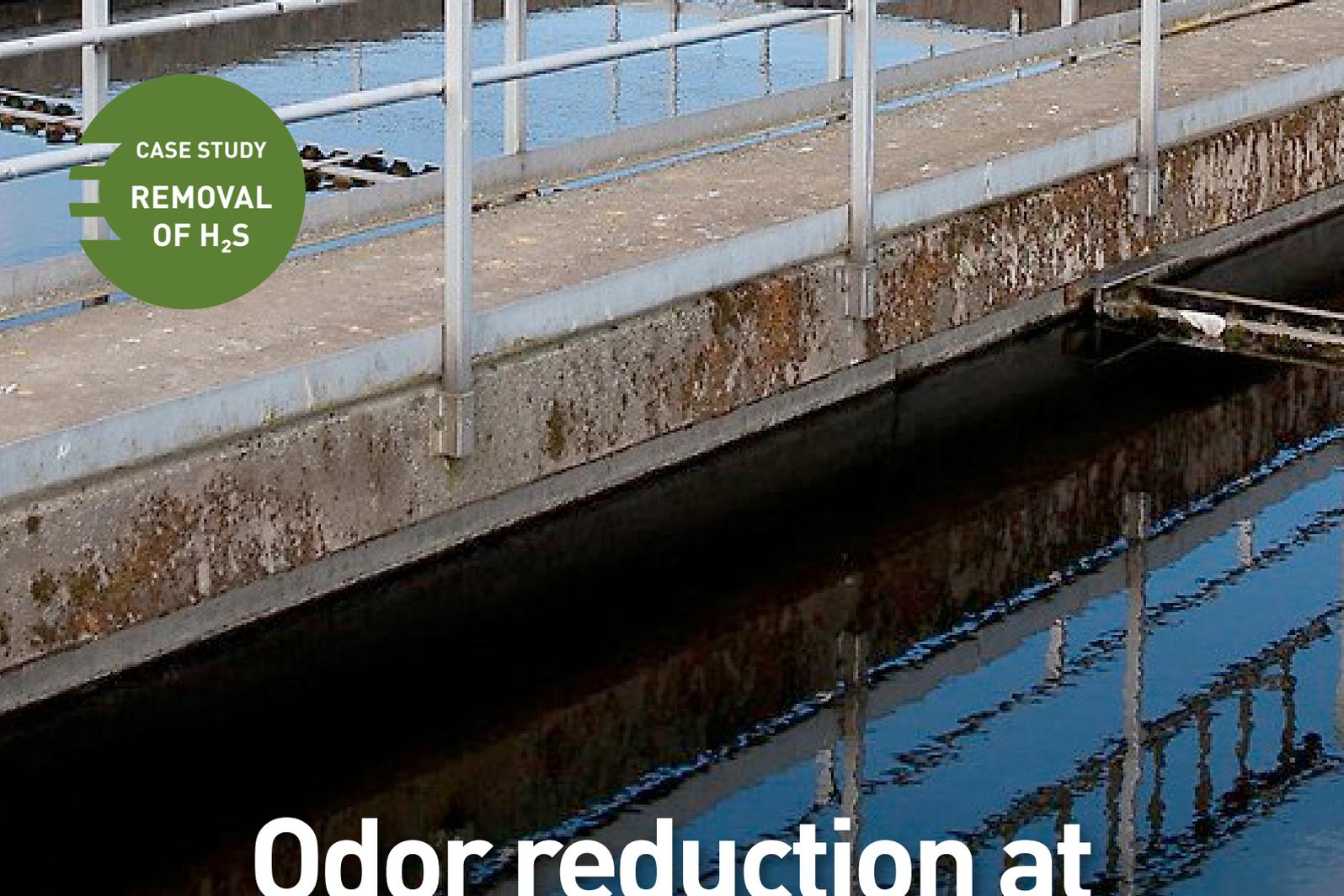




CASE STUDY
REMOVAL
OF H₂S



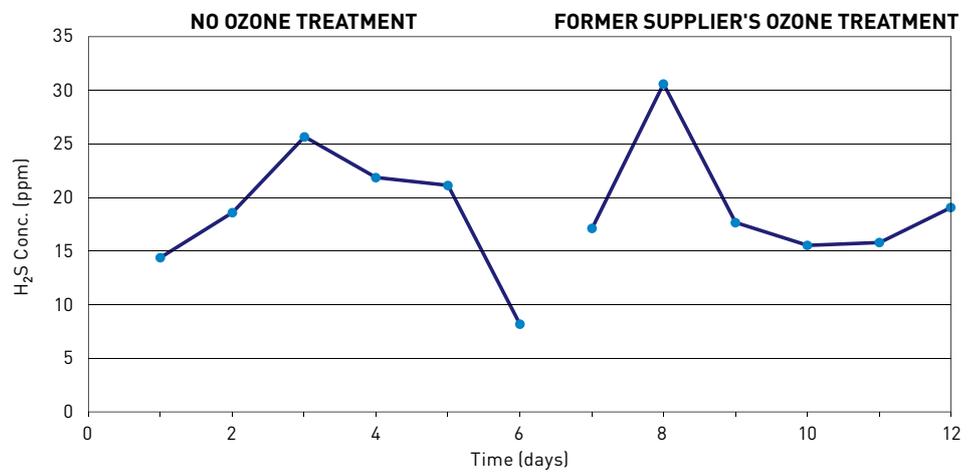
Odor reduction at sewage treatment plants

Not all ozone treatment solutions can get the job done

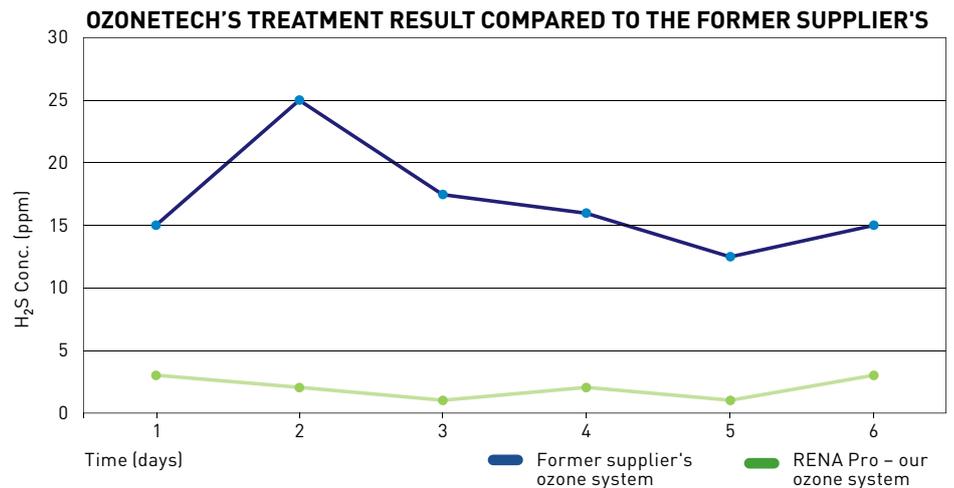
 **ozonetech.**

TIERPS ENERGI & MILJÖ AB, TIERP KOMMUN

The water supply and sewage treatment in the municipality of Tierp, are handled by Tierps Energi & Miljö AB (TEMAB). The drinking water is made from groundwater, which is filtered and regularly inspected by Livsmedelsverket (The Swedish National Food Administration), to ensure highest water quality before consumption. Water from showers, dishwashers and cleaning or any source of water that is led to the sewage, must be treated before reunited with nature. This is done to prevent the over fertilization and pollution of our waters. In the cleaning process, the water is cleaned from physical objects, organic material and nutrients. The cleaned water is recycled to water in the vicinity, while the rest becomes a mixture called sludge. The sludge is then led to a treatment process in which it is made ready for disposal in landfills.



The graph shows the daily average H₂S concentration before we were called in. To the left is the daily average concentration for six days with no ozone treatment. To the right is the daily average concentration for six days of treatment using the former supplier's ozone system.



The graph shows a comparison of the daily average H₂S concentration of the competitor's solution and our RENA Pro solution. Over a 6-day period, the Ozonetech solution on average reduced the H₂S concentration 87% compared to the competitor's previous ozone treatment.

THE PROBLEM

In the sludge treatment process, various odorous compounds can be formed due to microbial decomposition of organic matter, highly dependent on the type of wastewater handled (industrial or commercial). Amongst these compounds, the compound that is considered one of the worst malodors is the reduced sulfur compound, hydrogen sulfide (H₂S). H₂S is a very common odorant in sludge treatment processes that can be a large hindrance for the staff at the plant. H₂S has a very distinct odor of rotten egg with an odor threshold in the size range of a couple parts-per-billion (ppb), meaning that any volatilization or leakage in the process may lead to highly unpleasant conditions, even to the extent that neighboring areas around the plant might file odor complaints.

THE SOLUTION

The facility had already installed an ozone system with little to no results. However, Ozonetech was up to the task; to install a high-performance ozone system for the reduction of H₂S and odor in the wastewater treatment facility, an investment toward a more pleasant working environment (not to mention the neighbors). A high capacity

RENA Pro system was offered, including sensor and full monitoring. The injection point in the ventilation was carefully chosen by working together with TEMAB in order to ensure maximum efficiency.

EVALUATION

The RENA Pro reduced the H₂S levels in the process ventilation from the sludge treatment basins significantly, reducing the odor levels at the facility as a whole with 87% compared to the former supplier's ozone system. The careful design and optimization of the RENA and the ventilation system minimized risks for odor leakages and risk of bacterial growth in the ducts.

PLANT FACTS

Name: Tierps Energi & Miljö AB, TEMAB
 Industry: Wastewater treatment
 Purpose: H₂S & odor reduction
 Performance: Average 87% H₂S reduction in 5 m³/s air flow
 System solution: RENA Pro series
 Dimensions (HxWxD): 1800 x 800 x 600 mm
 Input power: 2.0 kW

ABOUT OZONETECH

Ozonetech is an award-winning cleantech company that has offered premium products for air and water treatment since 1993.

Our unique technology and extensive expertise has made us a rapidly growing global company with installations on six continents. All development and manufacturing is located in Sweden. In addition, we have in-house specialists for consultation, planning, installation and service.

As a Center of Excellence within air and water treatment, we also collaborate in international efforts to develop global standards for purification solutions.

At Ozonetech, we have a strong incentive to reduce energy consumption, health risks and the impact on the environment. Our current solutions provide a multitude of benefits in the processing and food industry, real estate, commercial kitchens as well as in the retail market.



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