ColdOx ™

Customer Solution Case Study

HamburgWasser installed two Centriair exhaust air treatments to reduce odours at the Köhlbrandhöft sewage treatment plant

Hamburger Stadtentwässerung (HSE) is a HamburgWasser company. It collects Hamburg's wastewater in underground sewers and conveys it to the Köhlbrandhöft / Dradenau sewage treatment plant network for treatment. On an annual average, this amounts to around 410,000m³ per day. In 2019/2020, HSE installed Centriair solutions for odour treatment to safely ensure defined emission levels..

Customer: Hamburger Stadtentwässerung AöR

Website: www.HamburgWasser.de

Customer Size: 2.500 Employees

Country or region: Hamburg / Deutschland

Industry: Water supply and sanitation

Customer profile

Hamburg Wasser is Hamburg's drinking water supply and wastewater disposal company. It is the second largest municipal water supply and wastewater disposal company in Germany.

System Description

- 2 plants - ColdOx™ and ColdOx™-ATEX
- Capacity: 8,400 and 6,500 m³/h
- Raw air - H2S values up to 87 mg/m³
- Clean air < 300 GE/m³
- > 98% odour removal
- Height of exhaust air towers 15 m
- Noise level: <70 dB at 1 m
- Material: Stainless steel

Business need

To reduce odour and H_2S pollution, the exhaust air from the mechanical wastewater treatment at the Köhlbrandhöft sewage treatment plant should be cleaned by two separate exhaust air treatment plants. Plant LN01 extracts the highly polluted exhaust air from the covered flumes and grit chambers. Unit LN02 extracts the air from the screenings container hall, where the washed and dewatered screenings are always ready for removal in four screening containers (21 m³).

Solution

The Centriair UV-C system ColdOx™-ATEX consists of a dust filter, SulphaRed™ filter, UV reactor and activated carbon filter. The air contaminated with odours is fed into the UV-C system. The photo-oxidation process is based on the application of UV light and catalysts and is a chemical-physical purification process.

In this process, the entire exhaust air stream is irradiated with UV-C light. This breaks down the pollutant molecules and at the same time generates oxygen radicals and ozone to oxidise the pollutants. The breakdown of pollutants is supported by a catalyst, which also breaks down excess ozone.

Benefits

- Safe reduction of odours from the processes; significant undercutting of the target value < 300 GE/m³.
- Uninterrupted operation, even at higher H2S concentrations
- Adjustment of UV-C output to pollutant concentrations by means of sensors
- Keeping the UV-C reactors clean by means of a CIP system

For more information about our references, please visit:
www.centriair.com