

MEVA OCS

Odour control system Alingsås WWTP





MEVA OCS – Odour control system

Case story: Alingsås WWTP

Contact at the plant: Bo Andréasson

+46322-61 60 00

Initial Position:

The Waste Water Treatment Plant in Alingsås, Sweden, was in a state of re-equipping their mechanical treatment step. Adding to the existing MEVA screens MEVA Screw Wash Press, MEVA Counter Pressure Screw and MEVA Sand Washer were installed. With new improved machinery the plant personal also wanted an environment that was pleasant to work in.

Solution:

MEVA installed NWACS-AS-3300 OCS from our South-American partner Nordic Water South-America. This impregnated and catalytic activated carbon filter transforms Hydrogen Sulphide, Methyl Mercaptans and Ammonia to harmless and, equally important, odourless substances. The ventilation inlets were connected to the screens, the sand washer and the containers for screenings and sand. The air was led through a mechanical particle filter into the Odour Control System and then to the fan, placed on the outside of the roof.

Result:

The odour in the mechanical treatment room was greatly improved. The cleaned air was even so free of odours and dangerous substances that it could be re-circulated. This was a success not only in the working environment but also economical when the heating cost of the room could be decreased during the cold months of the year.

Product information NWACS-AS-3300

Type of carbon: 100 vol% impregnated and catalytic activated carbon with the

affinity for H₂S and VOC. *Capacity of Flow:* 1200 m³/h

Estimated length of life for the carbon: ~8 years

Canister:

Stainless Steal: EN 1.4301 Diameter: 1000 mm

Height of adsorber bed: 910 mm

Designing limits:

Because of the low odour threshold (~0,2 ppm) of Hydrogen Sulphide we use it as the dimensioning substance.

Average inlet H2S concentration: 2 ppm Average outlet H2S concentration: <10 ppb

Nordic Water Products AB Tel: E-mail:

Sisjö Kullegata 6 +46 31 748 54 00 meva@nordicwater.se

SE-421 32 V. Frölunda Fax: Website:

Sweden +46 31 748 54 10 www.meva.se



Air tests Alingsås WWTP

During the tests a Draeger Miniwarn was used that continually measures Oxygen, Ammoniac and Hydrogen Sulphide. The following results were collected during a period of time of 2 hours.

Area of sampling Before the OCS	Oxygen(O2)	Ammoniac(NH3) ppm	Hydrogen Sulphide(H2S) ppm
Mechanical treatment room	20,9	2-3	0
Mechanical treatment room	20,9	0-3	0
Inlet Channel	20,6	10	2
Inlet Channel, low airflow	20,9	9	2
Inlet Channel, external sludge drop	20,9	109	23
Inlet Channel 1 min after drop	20,9	20	4
Inlet Channel 2 min after drop	20,9	11	2
Inlet basin, outdoors	20,9	5	1
Container for screenings	20,5	3	0
Container for screenings	20,9	3-4	0-1
Container for screenings, low airflow	20,4	4	0-1
Before Particle filter	20,9	2-3	0
Before Particle filter, low airflow	20,9	6	0-1

At the time of the external sludge drop there was an increase in substances in the ventilation system but no increase was noticed in the room or after the OCS.

Area of sampling After the OCS	Oxygen(O2)	Ammoniac(NH3)	Hydrogen
	%	ppm	Sulphide(H2S) ppm
Outlet, fan	20,9	0	0

Laws and Regulations

The Swedish Work Environment Authority has made a collection of exposure limit values, "Occupational exposure limit values and measures against air contaminants" (AFS 2005:17)

	Level limit value 1 day	Ceiling limit value 15 min
Hydrogen Sulphide	10 ppm	15 ppm
Ammoniac	25 ppm	50 ppm (5 min)

Swedish guidelines for distance to developed area ("Better place for work" 1995:5)

max 5000 pe à 300 m Waste Water Treatment Plant:

> max 20 000 pe à 500 m >20 000 pe à 1000 m

> 50 pe à 50 m Pump stations:

Nordic Water Products AB E-mail:

Sisjö Kullegata 6 +46 31 748 54 00 meva@nordicwater.se Website:

SE-421 32 V. Frölunda Fax: Sweden

+46 31 748 54 10 www.meva.se