

Sludge treatment with reeds in Hässleholm

By conveying digested sludge from the sewage treatment plant to reed beds, the Municipality of Hässleholm has reduced its use of chemicals and nitrogen emissions. A cleaner sludge with a reduced content of organic environmental toxins has also been obtained.

Reed beds are a good example of a treatment method that does not just reduce consumption of chemicals and energy use but also results in better sludge quality. Among other things, the sludge is free of polymers. As a result of the storage, intestinal bacteria and the organic environmental toxins disappear. Reed beds also result in lower operating costs than traditional treatment techniques.

With support from the local investment programme (LIP), the Hässleholm sewage treatment plant created six reed beds for sludge dewatering in 2000. The aim was to reduce nitrogen emissions, the use of dewatering chemicals (polymers), energy and motor fuels.

POSITIVE ENVIRONMENTAL AND ECONOMIC IMPACTS

- Reduced use of polymers (3 tonnes/year).
- Reduced nitrogen emissions (around 10 tonnes/year).
- Reduced energy use (around 40 GWh/year).
- Reduced number of vehicle-kilometres (around 4,000 km/year).
- Lower operating costs for sludge dewatering and transportation of dried sludge.

Photograph: Per-Åke Nilsson



IMPLEMENTATION

Six reed beds to which digested sludge is regularly added were created close to the sewage treatment plant. The reed bed is made up of several layers. At the bottom is a plastic sheet that prevents the groundwater being contaminated. At the top is a layer of sand in which reeds have been planted. The sludge is in the reed bed for 7–10 years before it has been fully treated and the pond is drained.

The slope and drainage in the beds was not optimally designed at the outset. This experience was taken into account in planning stage 2, in which another eight beds were created. Sludge has been added once a month instead of every week, as was planned. The aim was to prevent the reeds being damaged by the high levels of pollutants and to allow the beds to dry out between cycles.

When the ponds are drained, most of the dewatered sludge is used for surface cover at the sewage treatment plant. Some farmers who have land with very low copper levels have, however, shown interest in using the sludge, which in recent years has had copper levels above the limit values, as a fertiliser. An application for exemption for using sludge as fertiliser is therefore being drawn up.

POTENTIAL AND FUTURE BENEFIT

It is important to create sustainable and ecocycle-adapted water and wastewater systems for infrastructure and the environment. Biological and technical system solutions can complement one another to create cost-effective solutions with good environmental effects.

Reed beds result in better sludge quality than traditional treatment techniques.

WHY BEST PRACTICE

The practical application of the technique meant a rethink when the project was initiated. The sewage treatment plant in Hässleholm tests methods for reduced consumption of chemicals and energy use at full scale. Eight new reed beds have been created since the project ended. The oldest beds will be dewatered and drained in a few years' time. Continuous development work is under way to find the optimal conditions for sludge management. Trelleborg, Kristianstad and other towns have created reed beds according to the Hässleholm model.

FOR FURTHER INFORMATION

Contact
Per-Åke Nilsson, +46 (0)451-26 82 93,
per-ake.nilsson@hassleholm.se

Contractors
PNB

Website
www.hassleholmsvatten.se

For further information on Best Practice:
www.naturvardsverket.se/mir
www.swedishepa.se/bestpractice

FACTS

LIP Hässleholm 2000
Action No 2
Environmental investment: SEK 4.77m
Grant: SEK 1.41m

