

## Kent Recycling Scheme



Southern Water has announced plans to build two recycling centres in Kent as part of a £40 million environmental improvement scheme.

The new centres are to process the solid waste removed during the treatment of sewage, recycling it into organic fertiliser.

Southern Water proposes to do this by expanding existing sludge treatment centres, one at Ashford and one at Aylesford. They would improve standards of treatment to ensure the sewage sludge can be safely recycled to farmland.

The company is now submitting planning applications for both schemes to Kent County Council.

If planning permission is granted, the recycling centres will be built over three years and be ready for use by March 2009.

### *Background*

Southern Water operates a large number of new and upgraded wastewater treatment works across Kent.

These works fully treat wastewater generated by 1.4 million people in the county 24 hours a day, 365 days a year. The cleaned water can then be safely recycled to local rivers or the sea.

During the wastewater treatment process sludge – the name given to solid waste removed during the treatment process – is produced.

This product is drawn off and is further treated so it can be safely recycled to land as an organic fertiliser.

Many of these wastewater treatment works also have sludge treatment centres which will continue to operate.

### *The challenge*

Southern Water continues to be responsible for the safe collection, treatment and recycling of wastewater and sewage sludge, in line with UK and European law.

However, new facilities are now needed so Southern Water can continue to meet stringent environmental standards on sewage sludge treatment.

As the population increases, and wastewater treatment improves generating even more sludge, additional treatment capacity must be provided.

Faced with that challenge, Southern Water undertook a thorough review of sewage sludge treatment and disposal facilities within Kent.

This process led to an assessment of the possible locations with potential to develop new sludge treatment facilities in Kent. The review took into account planning, environmental, engineering and operational issues for each location.

Following this review of sites, Southern Water determined that expanding the sludge recycling centres at its existing works in Ashford and Aylesford offered the best practicable environmental regional solution for sludge treatment.

## *Our plans for Ashford*

The existing Ashford Wastewater Treatment Works and Sludge Recycling Centre currently provides wastewater and sludge treatment for the Ashford area.

The sludge recycling centre also treats sludge produced by other areas in East Kent.

Southern Water's plans for Ashford form part of its continuing investment in major infrastructure projects in Kent.

This is especially important because the volume of wastewater and sludge generated in Ashford is set to rise significantly with the Government's strategic Growth Area plans, which include 31,000 new homes and 28,000 new jobs by 2031.

How that extra wastewater and sludge will be treated, and where those facilities might be located, has yet to be determined. However, Southern Water considers that, despite this uncertainty,



*Before: Aerial view of Ashford Wastewater Treatment Works at present*



*After: Photo impression of how the Ashford site could incorporate new wastewater treatment and sludge recycling processes*

it is vital to continue its programme of environmental improvements.

Southern Water's plans for Ashford include:

- New wastewater treatment systems to improve the quality of treated wastewater released to the Great River Stour. This will involve installing additional sand filters and nitrifying filters to further remove pollutants.
- Expansion of the existing sludge recycling centre to include additional digestion capacity and drying facilities, to create dry granules for use as an organic agricultural fertiliser.
- Improvements to the Odour Control System to deal with smells produced during the treatment process.

The planning application for this scheme will be accompanied by an environmental statement which assesses how environmental issues have been taken into account in developing the scheme.

### *Ashford Sludge Recycling Centre*

The new sludge recycling centre at Ashford would treat sludge generated from wastewater which arrives at the works and continue to process partially-treated sludge from other areas in East Kent, which would be delivered in sealed skip containers and tankers.

To do this the waste is thickened by adding chemicals to produce a homogeneous mixture of water and solid material. This then passes into digester tanks where it is stored for up to 14 days and heated to a constant 35°C. This process allows bacteria within the waste to break down organic matter in the sludge to water, carbon dioxide and methane gas.

The methane gas produced in this process is stored on site in a gas holder and re-used to provide heat for the digestion and drying processes.

The sludge is then fed into a centrifuge which acts like a spin dryer, to separate the solid matter from the water to create a "cake". This finally passes into a huge drying machine, similar to a tumble dryer to evaporate the vast majority of the remaining water.

The end product is dry granules, which are bagged and stored on site before delivery to agricultural and other customers.

### *Our plans for Aylesford*

The existing Aylesford Wastewater Treatment Works and Sludge Recycling Centre currently provides wastewater and sludge treatment for the Aylesford area and the wider Maidstone catchment.

The sludge recycling centre also provides sludge treatment facilities for other areas in West Kent.

Southern Water's plans for Aylesford include:

- Enclosed sludge cake reception building.
- Expansion of the existing sludge recycling centre to include additional digestion capacity, enabling it to produce an agricultural fertiliser.
- A new odour control plant to collect and treat smells generated during the sludge treatment process.

### *Aylesford Sludge Recycling Centre*

The new sludge recycling centre at Aylesford would continue to treat the sludge generated from wastewater which arrives at the works.

It would also treat partially-treated sludge, delivered in tankers and sealed skip containers, from other areas in West Kent.

The waste is thickened by adding chemicals to produce a homogeneous mixture of water and solid material. This then passes into digester tanks where it is stored for up to 14 days and heated to a constant 35°C. This process allows bacteria within the waste to break down organic matter in the sludge to water, carbon dioxide and methane gas.

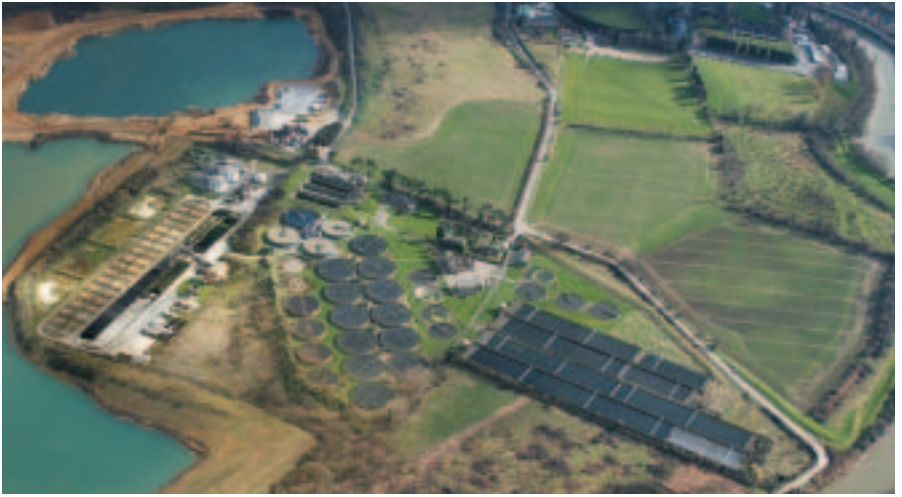
The methane gas produced in this process is stored on site in a gas holder and re-used to provide heat for the treatment processes.

The sludge is then fed into a centrifuge which acts like a spin dryer, to separate the solid matter from the water to create a "cake".

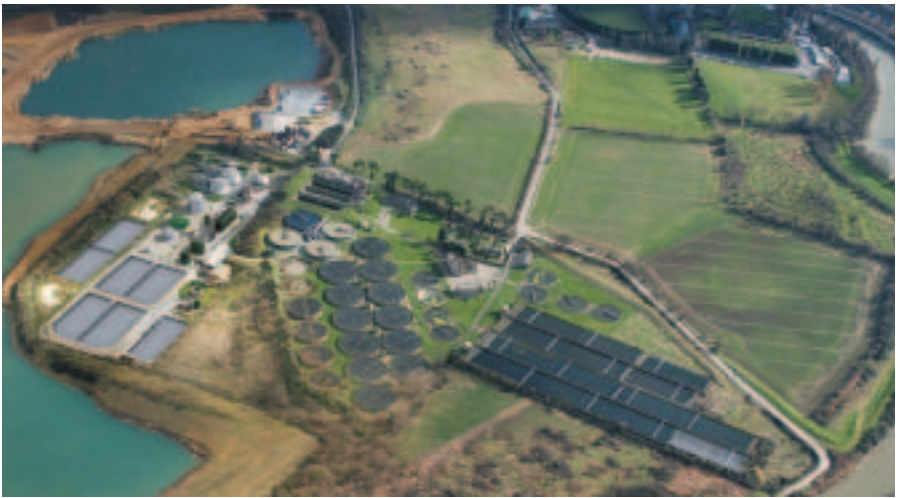
This "cake" is stored for up to 4 months, before being taken off site by covered lorries for use as an agricultural fertiliser or soil conditioner.

### *Working in your community*

Southern Water fully acknowledges its proposals for regional sludge recycling centres at Ashford and Aylesford will



*Before: Aerial view of Aylesford Wastewater Treatment Works at present*



*After: Photo impression of how the Aylesford site could incorporate a new sludge recycling centre*

generate temporary construction traffic and future increased operational traffic.

We have carried out assessments to determine the capacity of existing local roads and the number of additional vehicles likely to be generated, both during construction and operation of the new sludge recycling centres.

As well as assessing the traffic impact and, where possible, introducing mitigation measures, the company has also worked closely with the local highway authority to determine the most appropriate access routes to the new sludge recycling centres.

Southern Water remains confident that once both works are fully operational there would not be a significant increase compared to the existing numbers of vehicles already using the local road network.

In fact, modern wastewater treatment works and sludge recycling centres are sophisticated, computer controlled works which operate 24-hours-a-day, 365 days a year, with few operational staff needed to run them.

### *Ashford*

At Ashford access to the works would be made using an existing access road off Canterbury Road.

We estimate that during the peak period of construction there would be, on average, 39 lorries going to and from our site each weekday.

During operation of the new, expanded plant there would be, on average, 38 lorries going to and from the site each weekday.

### *Aylesford*

At Aylesford access to the works would be made via Bull Lane. Improvements would be made to the site access road and at its junction with Bull Lane, while passing bays would also be installed along the access road.

We estimate that during the peak period of construction there would be, on average, 10 lorries going to and from our site each weekday.

During operation of the expanded plant there would be, on average, 32 lorries



*A gas holder: methane gas produced is re-used to provide heat for the treatment processes.*

going to and from the site each weekday.

All construction vehicles would need to access the site through the village of Eccles. Wherever possible contractors will schedule these movements to avoid peak periods.

Likewise, during operation of the site, Southern Water would seek to establish a code of conduct for lorries travelling through Eccles. This would include:

- Staggering exports so vehicles do not travel in convoy.
- Ensuring vehicles avoid mounting kerbs.
- Ensuring export lorries are properly covered.

## *Controlling smells*

Southern Water places great importance on being a good neighbour, which is why we invest large sums of money in the latest technology to deal with smells.

Sewage, by its very nature, is a product which generates smells. However, modern treatment works are a long way removed from the older open sewage farms pioneered by the Victorians.

As part of our improvement plans we would install new odour control systems at both Ashford and Aylesford.

All treatment processes that generate smells can be covered. The foul air generated is then collected and passed through an odour control system to remove smells, before being released into the atmosphere from a vent pipe.

When a modern wastewater treatment works and sludge recycling centre is operating properly, there should be no problem with smells.

However, there are occasions when plant or equipment requires major maintenance, or emergency repairs must be carried out, in which case some smells may occur over a short period of time.

As far as possible we will plan work to ensure any odours are minimised during these periods and endeavour to return the works to maximum operating efficiency as soon as practicably possible.

## *The next step*

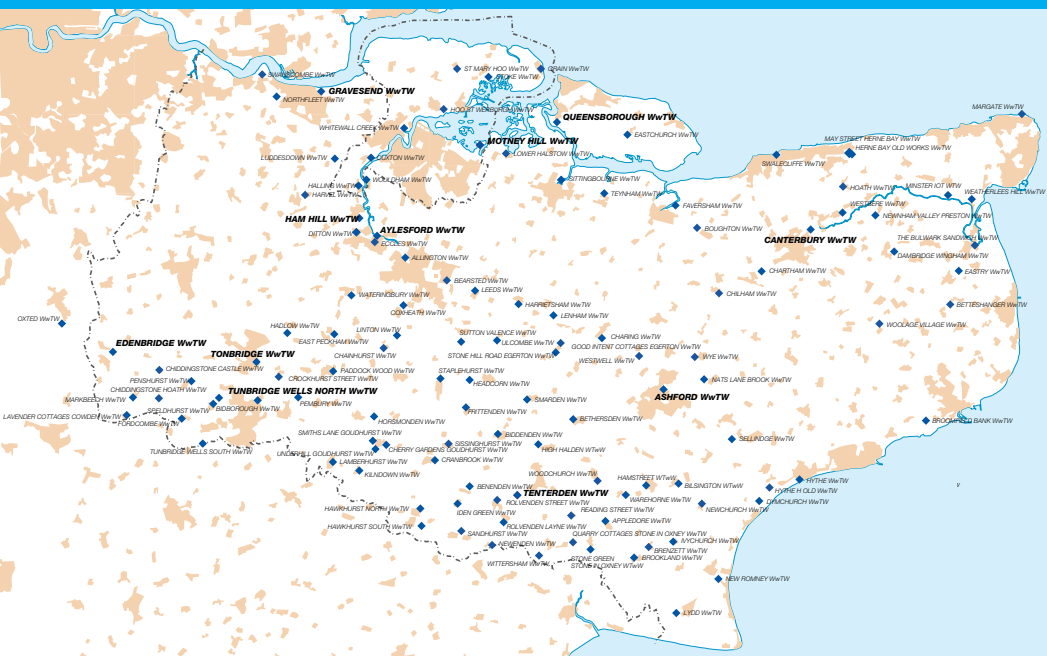
We hope you agree there is a pressing need to upgrade sludge treatment across Kent.

Southern Water is applying to Kent County Council for planning permission to build new, expanded, recycling centres at the existing Ashford Wastewater Treatment Works and Aylesford Wastewater Treatment Works.

As part of the Ashford scheme, the company is also applying for planning permission to upgrade the wastewater treatment works. Accompanying this application is an environmental statement, which provides information about the likely environmental effects of the proposals and comprehensively addresses issues such as landscape, ecology, traffic and transport, noise and vibration, archaeology, air quality and recreation and tourism.



*Odour control systems would be installed at both Ashford and Aylesford to remove smells*



Wastewater treatment works (WwTW) within Kent. Sludge recycling centres appear in bold.

We hope to have the applications determined by April 2006. If successful in gaining planning permission, we would aim to start construction in June 2006 with completion of the schemes by March 2009.

The formal planning process allows for local residents, local planning

authorities, parish and town councils, statutory and non-statutory organisations and public bodies to view the company's proposals and make comments.

Alternatively, you can view this information on Southern Water's website at [www.southernwater.co.uk](http://www.southernwater.co.uk).

*Contact us*

For further information regarding the **Kent Recycling Scheme**:

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