

# Anaerobic Wastewater treatment

## Biofuels industry

# BIOETHANE



### Client

Lantmaennen Agroetanol, Sweden

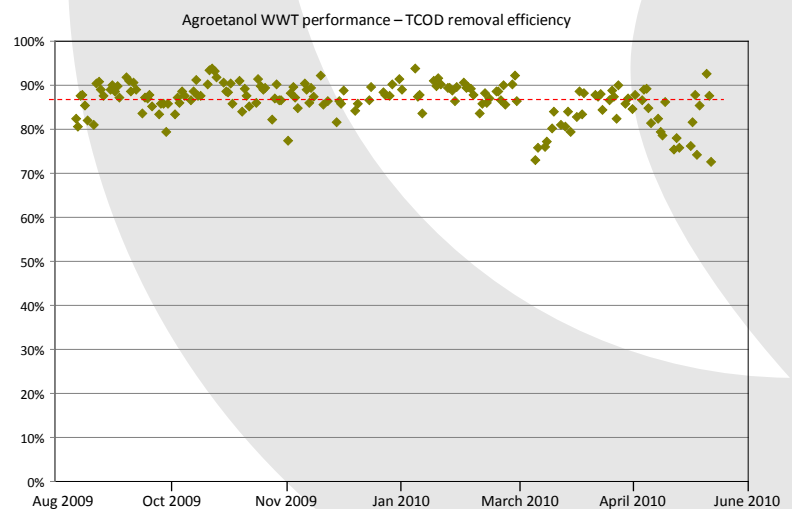
The client is a fuel bioethanol producer located in Sweden. At the production site in Norrköping, fuel ethanol is made from cereals, mainly wheat, triticale and barley. The stillage, which is left over after distillation, is dried and palletized and sold as a high value raw material for animal feed (DDGS). The produced bioethanol is blended in petrol, or sold as pure car fuel. Biothane provided anaerobic treatment for this plant.

### Raw Wastewater Characteristics

Flow	m <sup>3</sup> /d	1.440
COD load	kg/d	11.500
TSS	mg/d	100
TKN	mg/l	4
Phosphorus (PO <sub>4</sub> )	mg/l	1.5
Temperature	°C	<45

### System features

Conditioning tank	m <sup>3</sup>	40
Biobed® EGSB	m <sup>3</sup>	550
Emergency Biogas flare	N m <sup>3</sup> /h	300



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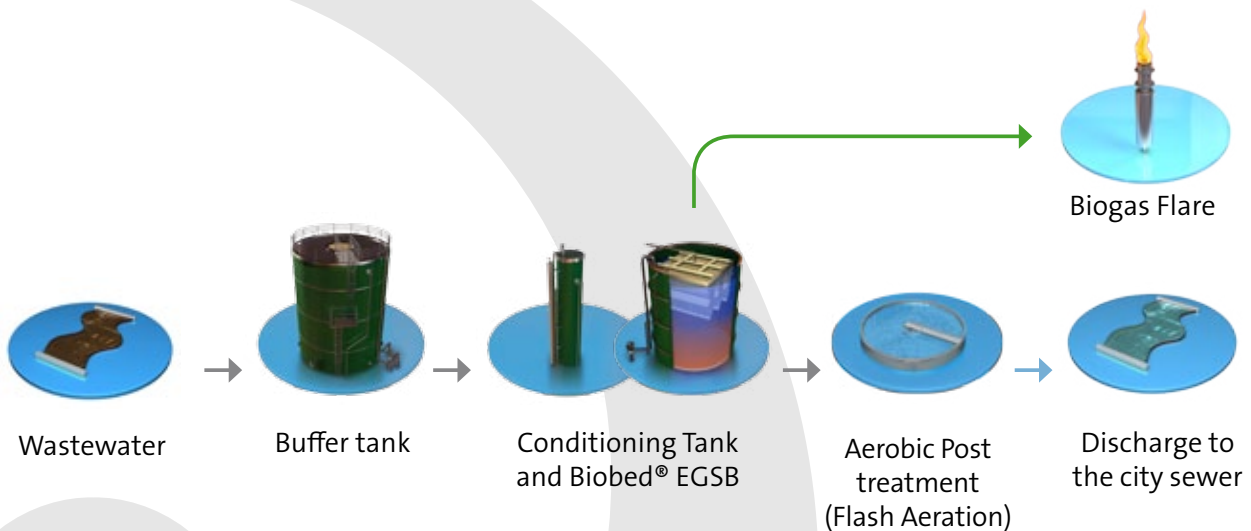
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### Treatment Process

The wastewater is collected in process sumps in the factory and the condensate water from DDGS drying is treated in a Biobed® EGSB reactor. Before anaerobic treatment, the wastewater is collected in a buffer tank and cooled to 38°C. In the Conditioning Tank micro- and macronutrients are added, and the pH-value is corrected. Inside the Biobed® EGSB reactor approximately 85% of the COD is converted into biogas by anaerobic bacteria. The treated water is disposed to the city sewer of Norrköping.



### Some other Biothane References in Biofuels Industry

Südzucker Bioethanol GmbH	Germany	2005
E3 Biofuels	USA	2005
Téréos Lillebonne	France	2006
Abener Energia	Spain	2006
Lurgi Gateway Ethanol	USA	2006
Hokkaido BioEthanol Co., Ltd	Japan	2007
Vivergo	UK	2008

**BIOTHANE SYSTEMS INTERNATIONAL**  
 sales.europe@biothane.com  
 Tanthofdreef 21 / PO BOX 5068  
 2600 GB Delft - The Netherlands  
 Tel.: +31 (0)1.52.70.01.11  
 Fax: +31 (0)1.52.56.09.27  
[www.biothane.com](http://www.biothane.com)

**BIOTHANE, LLC**  
 sales@biothane.com

**BIOTHANE ASIA PACIFIC**  
 sales.asia@biothane.com