Filtration Solutions for Landfill Leachate Treatment

www.cut-membrane.com

Safe Process Technology with Membrane Filtration

Landfill leachate treatment is one of the most challenging processes for membrane technology. Landfill leachate consists of water collected from rainwater that flows through the body of the landfill, water released from the disposed waste and water released as a result of biological degradation. Improperly sealed landfills can be affected by groundwater which increases the landfill leachate.

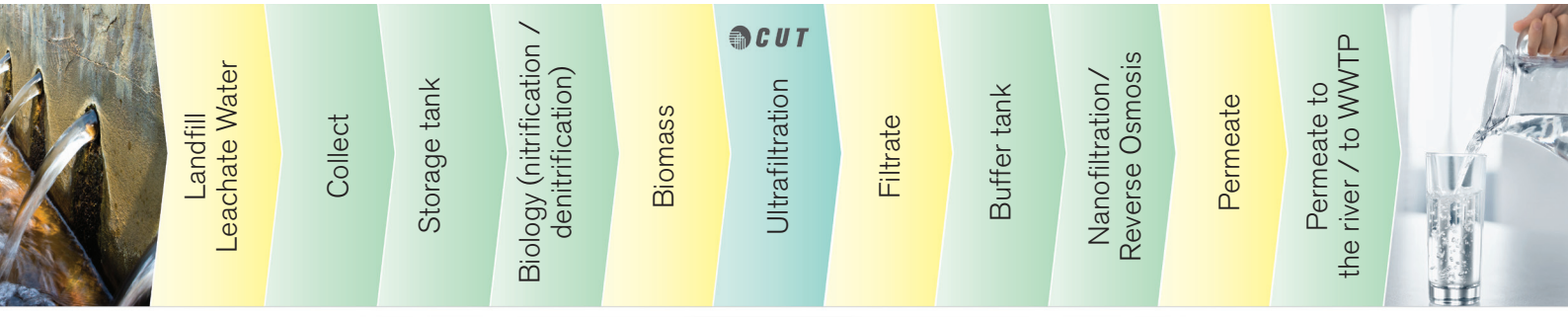
Various chemical compounds and a variety of particulates will leach as the water passes through the landfill. The composition of these will depend on the types of waste, the age of the landfill site and the climatic conditions such as the storm water quantity, the evaporation capability and seasonal fluctuations. High organic load and high salt concentrations should be considered as well.

The polluted water discharged from the body of the landfill has to be collected and treated. The treated effluent has to meet acceptable criteria to allow direct discharge into natural water sources or be pumped to Wastewater Treatment Plants (WWTP) for final treatment. Several treatment processes are available to reach this effluent quality level.

A combination of a Membrane Bio-Reactor (MBR) and nano-filtration (NF) or reverse osmosis (RO) is the state-of-the-art technology for treating landfill leachate. To ensure safe operation of the NF/RO membrane system, the landfill leachate should be pretreated properly. An MBR process based on biologic and cross-flow ultra-filtration (UF) membrane is a reliable approach.

The UF filtrate from the T-CUT module ensures a long service life for the NF/RO membrane. The resulting permeate from this leachate treatment can be discharged or further treated in a WWTP to ensure a safe landfill operation. The combination enables the organic and inorganic material in the leachate to be separated by up to 99%.

Schematic drawing of a process combination used for landfill leachate treatment



T-CUT - Ultrafiltration Module for Landfill Leachate Treatment

The T-CUT tubular module developed for continuous operation in MBR processes is highly reliable for long-term operation in landfill leachate treatment plants. Continuous product innovation ensures that the T-CUT module used in landfill leachate treatment plants provides excellent protection for the sensitive NF/RO elements against biomass. The advanced membrane production process and high quality assurance programs produces a T-CUT tubular module with high mechanical stability. This high mechanical stability and chemical cleaning resistance provides a product for even the most challenging applications.

Benefits of the new T-CUT Tubular Module

- Process high solids content
- High filtrate power
- Easy rinsing / cleaning
- Excellent pressure resistance
- High mechanical stability
- Long-term stability
- FRP and stainless steel housings
- New insert-style available (T-CUT Core)

Technical data T-CUT Series

Module Series		**4“**	**6“**	**8“**	**10“**
Connection Feed	[mm]	114.3	168.3	219.1	273
Connection Permeate	[mm]	48.3 [1.5“]	60.8 [2“]	73 [2.5“]	88.9 [3“]
Length [mm]	**Bore-Ø**		**Membrane Area [m²]**		
3,000	5.4	7.9	21.0	34.6	52.2
	8.2	6.6	15.0	27.4	41.0
	10.2	5.4	11.9	21.4	32.6
4,000	5.4	--- *	--- *	46.2	70.0
	8.2	--- *	--- *	36.5	55.0
	10.2	--- *	--- *	29.0	43.5
Connection Type			Victaulic*		
Housing Material			FRP*		
Temperature Range	[°C]		5 - 60		
Max. Operating Pressure	[bar]		10		
MWCO Pore Size	[kDa]		50; 100; 150; 200		

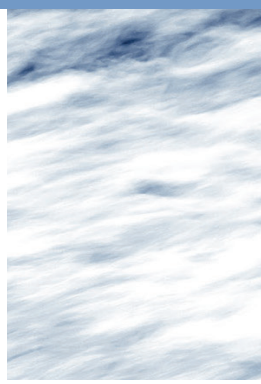
* more module-, housing- and connection variants upon request.

For further information regarding
waste water please visit us on:

www.cut-membrane.com

CUT Membrane Technology GmbH
Feldheider Str. 42
40699 Erkrath/Düsseldorf
Germany
Tel.: +49 (0) 2104 17632-0
info@cut-membrane.com
www.cut-membrane.com

CUT
Membrane Technology



Leachate 07/2017