Central WWTP Lahnstein-Braubach

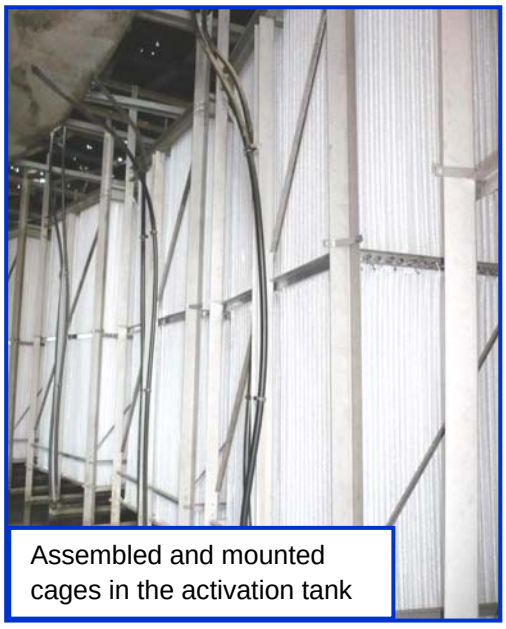
Lahnstein near Koblenz, Germany

- **Municipal**
- Size: **44 000 PT**
- Maximum inflow: 20 000 m³/d

- Bio textiles: 3,8 m x 0,96 m
- 2 basins each with 28 cages à 2 x 2 m each with 64 biotextiles
- Total volume of the biological tank: 3 300 m³
- Nitrification and denitrification with intermitting aeration

Control of cage, bio textiles and aerators

Because of risen legal requirements the necessity of targeted nitrogen elimination became apparent.
In the course of the reconstruction in the years **1999/2000** the fixed-bed material **Cleartec® Biotextil** was installed in both aeration tanks to increase the active biomass.
Besides the targeted N-elimination the carbon degradation also increased.



Assembled and mounted cages in the activation tank

Because of a design failure of the former planner it was necessary to **replace the biotextiles in 2008**. The distances necessary for the optimized function and the long life time of the bio textiles were kept, furthermore the textiles where fixed better through a third supporting loop.

Results of the reconstruction:

- The discharge values improved again
- Even in the cold winter 2008/09 the discharge values for nitrogen, which are only valid for the warm season were kept
- The **sludge volume index (SVI)** is in the average only about **70 ml/g**

Excerpt from the operating data:

	1998 – before installation of Cleartec® Biotextil	**2008 – after reconstruction with Cleartec® Biotextil (values from August)**			
	Degradation rate	Total influent [mg/l]	Total effluent [mg/l]	Degradation rate	Limiting values [mg/l]
COD	93,9 %	887	29	96,7 %	90 // 60 self declared
BOD_5	97,8 %	441	3	99,3 %	20
N_{tot} anorg.	42,6 %	55	9	83,6 %	18
NH_4-N	74,7 %	54	4	92,6 %	-

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