

Reed Bed Treatment System

Sewage treatment plant Fronhausen

Operating company:
Zweckverband Mittelhessische
Abwasserwerke
Teichweg 24
D-35396 Gießen, Germany

Strengthening and enhancement of a
rotating disc reactor wastewater treatment
plant for domestic sewage with artificial
wetlands and sewage sludge drying
basins

Population equivalents:
5.000 PE

Planning: 2000 – 2003
Construction: 2005 – 2006

Wastewater treatment plant from 1962:
- rotating disc reactor

Structural alteration measures:
- new screen
- new process, measuring and control
technology

Effluent (2010):	Legal Limits:
COD: 15 mg/l	55 mg/l
BOD: 3 mg/l	10 mg/l
NH ₄ -N: 1,1 mg/l	10 mg/l
P _{tot} : 3,7 mg/l	5 mg/l



Enhancement of the old rotating disc reactors:
- 1 polishing pond
- 2 reed planted artificial wetlands
- 1 reed planted sludge drying bed

Design parameters:
760 m³/d (dry weather) – 3.320 m³/d
(rainy weather)

Space requirement for polishing pond:
760 m²

Space requirement for artificial wetlands:
5.320 m²

Hydraulic loading rate (2010):
187 l/m² · d

Space requirement for reed planted
sludge drying bed:
2.065 m²

