

### EGG WASHING PROCESS WATER TREATMENT, IRELAND

#### Project Description

The end customer is an egg producing company. The produced eggs from a 500.000 chicken resident equals a 2800 P.E. plant in terms of produced organic load at a relatively low hydraulic load that only equals 500 P.E. Together with newterra gmbh the plant constructing company started up the 1st phase in 2005 treating 35 m<sup>3</sup>/day. Due to the successful business start and long term reliability of the process water treatment plant the end customer decided to extend the capacity towards 100 m<sup>3</sup>/d in 2009. Target of the plant has always been to reduce the organic load by 99,9 % so the treated water can be released into a very sensitive river beside the plant. The plant extension has been realized very successfully during 2009 and since then the performance has been extraordinary.

#### Performance characteristics

Flow: 100 m<sup>3</sup>/day  
 Membrane surface area: 420 m<sup>2</sup> (3 x MA04-40)  
 Flux rate: 11 l/m<sup>2</sup>h

Waste water feed:  
 Total daily flow (DWF) 100 m<sup>3</sup>/day  
 Peak flow (3x DWF for 30 min) 12.5 m<sup>3</sup>/h  
 Total BOD<sub>5</sub> loading 1693 mg BOD<sub>5</sub>/l  
 Total COD loading 4528 mg COD/l  
 Amm.-N 50 mg/l  
 Total TN loading 216 mg/l  
 Total P 25 mg/l  
 TSS 1564 mg/l  
 pH 9-12

Discharge into sensitive river area



#### Technical Data

	Design Inlet	Design Outlet	Effluent sample (6/11/9)	Effluent sample (6/11/9)	Effluent sample (4/12/9)	Effluent sample (18/1/10)	Effluent sample (10/2/10)	Average results	% average removal
BOD	1693	5	2	2.6	2	3	1.5	2.7	99.9
COD	4528	25	18	14	19	71	24	28.5	99.6
Amm-N	50	5	0.106	0.08	0.04	0.09	0.22	0.9	99.8
Total-N	216	20	3.06	3.9	12.9	4.2	13.6	9.6	98.6
Total-P	25	1	0.146	0.13	0.27	0.22	0.28	0.3	99.4
SS	1564	5	2	3	3	2	3	3.0	99.9
Nitrate-N				2.5	3.1	4.2	11.5	5.3	

newterra GmbH, a subsidiary of newterra Group Ltd, is the technical center of development and excellence of the globally successful MicroClear® flat sheet membrane for MBR (membrane bioreactor) applications. The evolution of the filtration module, by specially developed and optimized production machines, to the ISO 9001 certified manufacturing process of the MicroClear® membranes, is 100% produced at the site in Langgoens, Germany (near Frankfurt).