

BIOLOGICAL WASTE WATER TREATMENT



Solutions for humans and nature



Manufacturing ◊ Installation ◊ Planning ◊ Service

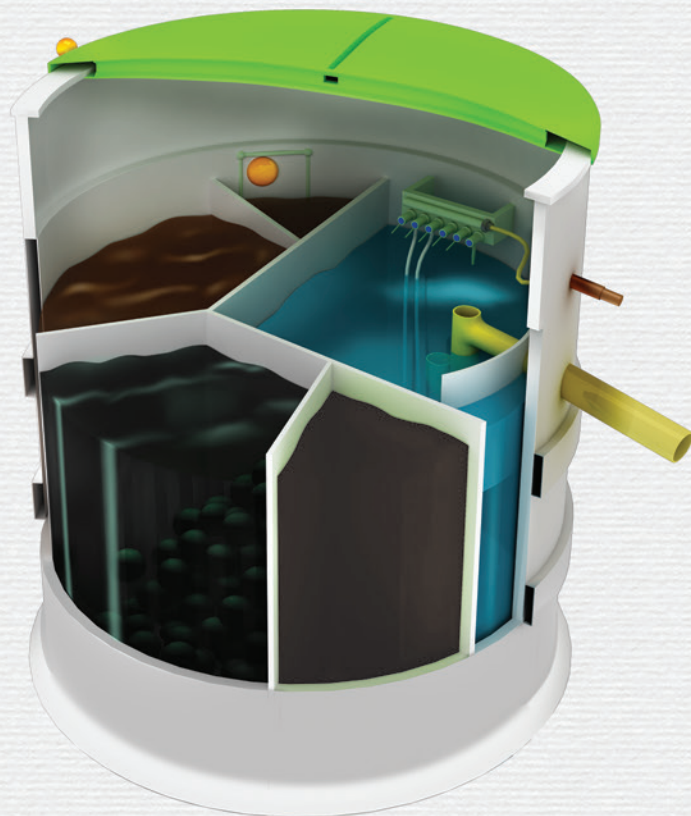


EN 12566-3: 2005+A1: 2009

www.biopro.ie

August & Co, a limited joint stock company was founded in 1998. The company manufactures, installs, plans and maintains biological wastewater treatment plants (WWTPs) using advanced patented (EU patent no. 5386) technology. The world is struggling with the environment and the pollution of water, and we have developed a technology that cleans effluent to a high standard. Our wastewater treatment plant and the treatment process technology are based on more than 40 years of research, development, and professional experience. Our installation base and well maintained units can be found in more than 10,000 individual homes, group schemes, schools, cafes, motels and other applications not only in Lithuania and the Baltic States, but also in many European, Asian and African countries.

The company is fully qualified to carry out the design and construction of waste water treatment plants for building works.



The company holds many certificates in several countries both for standards and quality assurance in accordance with quality management ISO 9001, environmental management ISO 14001 and occupational safety and health management system BS OHSAS 18001.

The main aim of the certifications is to ensure that you get the best performance and reliability for your investment at a lower cost, as well as higher environmental protection and improvements in health and safety. Our quality assurance is your guarantee for a better product.

The certifying laboratory PIA in Aachen, Germany is a recognized independent laboratory certified to test and approve packaged and/or site assembled treatment plants used for domestic wastewater treatment up to 50 PT in line with European Union directives Nr.89/106/EEC requirements for construction products and complies with EN 12566-3:2006 + A1: 2009.

The test results exceeded all expectations and surprised even the most experienced laboratory personnel.



Given the harmonious setting we have created around our plant & the environment, our company motto is:

Solutions for humans and nature

Comparison Chart

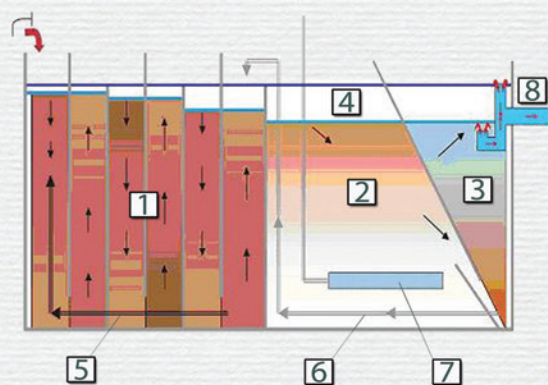
Items to Compare:	August & Co		Other companies that will meet the CE standard EN 12566-3 + A1		
	ATCP-8	AT-10			
Population Equivalent (min. - max.)	2 - 8	2 - 8			
Nominal load of organic pollutants (kg BOD ₅ /d)	0,48	0,48			
Device capacity (m ³)	3,00	3,00			
Does it accept normal waste (like toilet paper)?	Yes	Yes			
Is initial mechanical screening of the wastewater influent available?	Yes	Yes			
Does the plant treat household cleaners & chemicals?	Yes	Yes			
Removes phosphorus*	N/A	70,1 %			
Removes nitrogen*	50,8 %	78,3 %			
Removes ammonium nitrogen*	98,1 %	95,5 %			
Removes suspended solids*	95,5 %	95,8 %			
Removes BOD ₅ *	95,8 %	97,8 %			
Removes COD*	91,7 %	93,2 %			
How long is the commissioning period?	1 day	1 day			
How long can the equipment be operated without effluent flow?	180 days	180 days			
Excess sludge per year (m ³)*	1,5	1,5			
What is the moisture content of the sludge?	99 %	99 %			
Is the sludge reusable?	Yes	Yes			
Is it possible to re-use the treated water?	Yes	Yes			
Average annual electricity consumption (kWh)	270	270			
Does the unit give off any odours?	No	No			
Can the unit be opened for inspection easily?	Yes	Yes			
Does the unit carry the necessary certification and documentation 01.11.2010. CE declaration of conformity conforming to EN 12566-3:2005+A1:2009?	+	+			

*The data is confirmed by the accredited wastewater treatment technology testing institute PIA, Aachen (Germany).

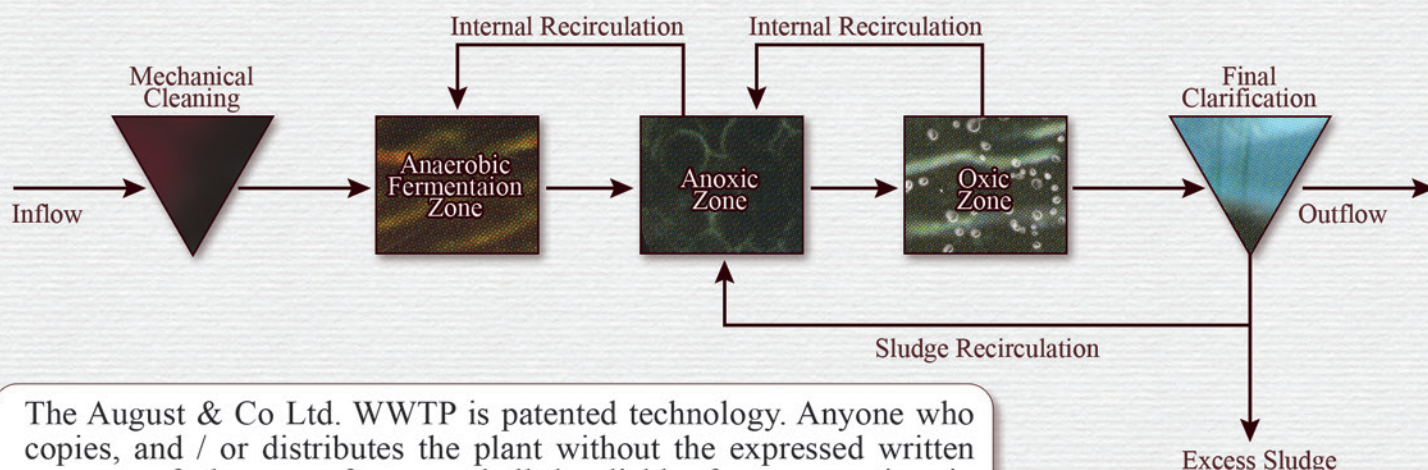
AUGUST & CO WILL MODIFY THE STANDARD PLANT DESIGN TO ENSURE CLEANING PARAMETERS ACCORDING TO YOUR REQUIREMENTS

PIA 2007-006 EN 12566-3:2005 + A1:2009		PIA 2007-021 EN 12566-3:2005 + A1:2009 With Filter		No. 00021/TSUS/Y/2009 EN 12566-3:2005+A1: 2009		PIA VEOLIA Protocol		PIA VEOLIA Protocol With Filter	
1. Treatment Effectiveness		2. Treatment Effectiveness		3. Treatment Effectiveness		4. Treatment Effectiveness		5. Treatment Effectiveness	
COD	88,1 %	COD	91,3 %	COD	88,1 %	COD	93,2 %	COD	95,0 %
BOD ₅	97,2 %	BOD ₅	98,1 %	BOD ₅	97,2 %	BOD ₅	97,8 %	BOD ₅	98,5 %
SS	94,0 %	SS	98,8 %	SS	94,0 %	SS	95,8 %	SS	98,7 %
NH ₄ -N	96,7 %	NH ₄ -N	96,0 %	NH ₄ -N	96,7 %	NH ₄ -N	95,5 %	P total	71,9 %
N total	61,7 %	N total	62,4 %	N total	61,7 %	N total	78,3 %	N total	78,3 %
P total	47,4 %	P total	50,1 %	P total	92,5 %	P bendras	70.1 %	Escherichia Coliform	99,99 %
		Faecal coliforms and Bacteria	99,9 %					Coliform bacteria	99,99 %
								Intestinal enterococci	99,99 %

1. Standard treatment that surpasses EU standards for waste water.
2. Filtered cleaning that guarantees a higher standard and bacteria reduction than required by the EU for discharges.
3. Treatment plant with the highest cleaning parameters for the Scandinavian countries, ensuring phosphorus removal.
4. Standard treatment that surpasses EU standards for waste water using the Veolia Protocol for stressing.
5. The highest standard of treatment possible for the effluent tested to the strict Veolia Protocol standard.



1. Anoxic chamber
2. Oxidic chamber
3. Final clarification chamber
4. Integrated Retention area
5. Internal Recirculation
6. Recirculation of the sludge
7. Fine-bubble aeration
8. Flow control device



The August & Co Ltd. WWTP is patented technology. Anyone who copies, and / or distributes the plant without the expressed written consent of the manufacturer shall be liable for prosecution in accordance with the laws of their country or state.

“August & Co“ biological waste water treatment YES:

Everything from a single source. Manufacturing, sales, design, installation and maintenance. **YES**

The waste water treatment plant can be left without effluent for 180 days without fear of malfunction, perfect for planning holidays, trips or seasonal work. **YES**

All cleaning including phosphorous and nitrogen removal are completed within the one unit. **YES**

Mechanical cleaning grill to trap non-organics that may get into the sewer system and will not break down in a biologic environment, like diapers, rubber gloves, and to trap papers and tissues until suitably dessicated. **YES**

A minimum generation of excess sludge, only 1.5 m³ / year. **YES**

Lowest power consumption, only - 0.75 kWh / day. **YES**

All units have unique identification numbers and are labelled with the required EU standards. **YES**

All plants are accompanied by required documentation. Technical equipment and EU Declaration passport containing the device identification number. **YES**

“August & Co“ biological waste water treatment NO:

NO damage to the environment, complies with the highest environmental standards;

NO use of additional chemical reagents for waste water treatment;

NO sensitivity to household chemicals (all chemicals used in household measures) and toilet paper;

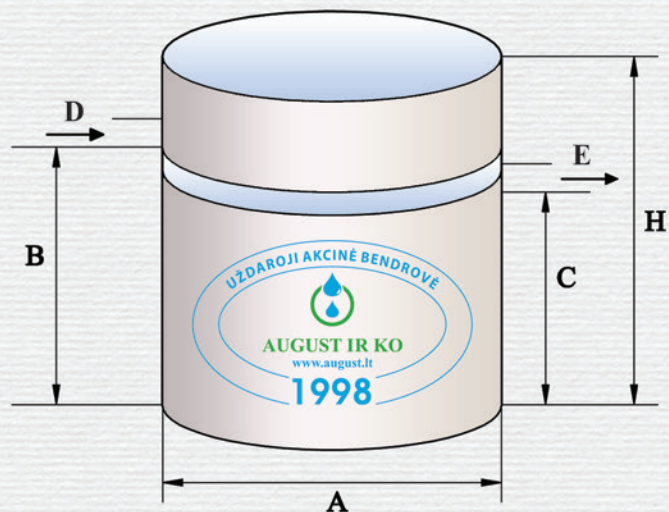
NO sensitivity to peak flows;

NO foul-smells, runs without sound and vibration;

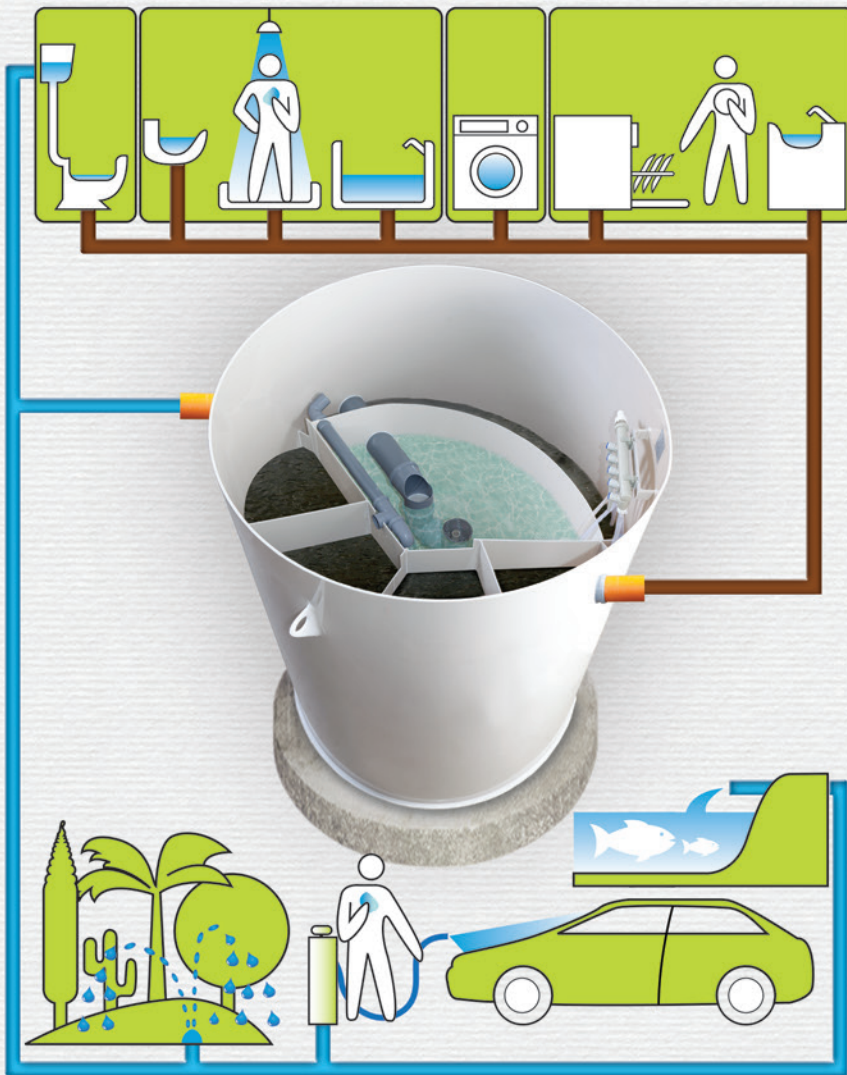
NO special care or transport required;

NO mechanical parts, filters, pumps, sludge bags or other unnecessary extra parts to wear down or require changing;





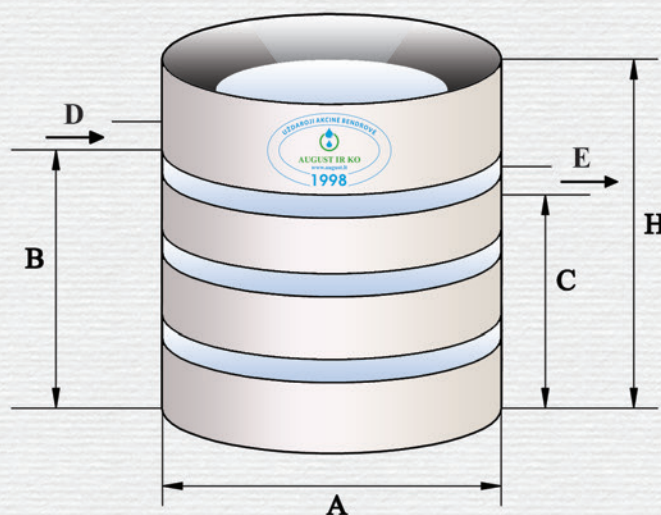
MODEL	POPULATION EQUIVALENT		AVERAGE DAILY LOAD (kg BOD ₅)	EXCESS SLUDGE (m ³ /year)	ELECTRICAL USAGE (kWh/day)	TECHNICAL DIMENSIONS					
	Min.	Max.				H(mm)	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)
AT-6	1	4	0,24	1	0,6	1800	1400	1300	1150	110	110
AT-8	2	6	0,36	1,5	0,8	2200	1400	1700	1500	110	110
AT-9	2	7	0,42	1,8	0,8	2200	1470	1800	1600	110	110
AT-10	3	8	0,48	2	1,2	2000	1750	1500	1250	110	110
AT-12	4	10	0,60	2,5	1,6	2200	1750	1700	1500	110	110
AT-15	5	12	0,72	3	2,2	2200	2050	1700	1500	160	160
AT-20	7	18	1,08	4,5	4,3	2700	2050	2200	2000	160	160
AT-30	10	25	1,50	6,3	7,4	3000	2300	2500	2300	160	160
AT-40	15	35	2,10	8,8	6,5	2700	2850	2200	2000	160	160
AT-50	20	50	3	12,5	11,6	3000	2950	2800	2600	50	160



MODEL	POPULATION EQUIVALENT		AVERAGE DAILY LOAD (kg BOD ₅)	HYDRAULIC LOAD		EXCESS SLUDGE PRODUCTION (m ³ /year)	ELECTRICAL USAGE (kWh/day)	TECHNICAL DIMENSIONS						
	Min.	Max.		(m ³ /d)	(m ³ /h)			H(mm)	A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	NO of REACTORS
AT-60 oval	20	60	3,6	9	1,61	10,1	18	3000	Length 3200 Width 2300	2880	2650	50-200	200	1
AT-75 oval	25	75	4,5	11,3	2,02	13,7	18	3000	Length 3600 Width 2300	2880	2690	50-200	200	1
AT-100 oval	30	100	6	15	2,69	18,3	24	3000	Length 3200 Width 2300	2880	2500	50-200	200	2
AT-120 oval	40	120	7,2	18	3,23	21,9	24	3000	Length 3200 Width 2300	2880	2650	50-200	200	2
AT-150 oval	50	150	9	22,5	4,03	27,4	24	3000	Length 3600 Width 2300	2880	2690	50-200	200	2
AT-75	25	75	4,5	11,3	2,02	13,7	18	3000	3250	2880	2690	50-200	200	1
AT-100	30	100	6	15	2,69	18,3	24	3000	3500	2880	2690	50-200	200	1
AT-120	36	120	7,2	18	3,23	21,9	24	3000	4000	2880	2690	50-200	200	1
AT-150	45	150	9	22,5	4,03	27,4	24	3000	4500	2880	2690	50-200	200	1
AT-200	60	200	12	30	5,38	33,7	36	3000	5000	2880	2690	50-200	200	1
AT-250	75	250	15	37,5	6,72	42,1	36	3000	5300	2880	2690	50-200	200	1
AT-300	100	300	18	45	7,01	50,5	48	3000	5500	2880	2690	50-200	200	1
AT-400	120	400	24	60	8,1	67,4	72	3500	6100	3340	3120	50-200	200	1
AT-500	150	500	30	75	13,44	84,2	72	3000	5300	2880	2690	50-200	200	2
AT-600	180	600	36	90	14,02	101,1	96	3000	5500	2880	2690	50-200	200	2
AT-750	225	750	45	112,5	20,16	126,3	108	3000	5300	2880	2690	50-200	200	3
AT-800	240	800	48	120	16,20	134,8	144	3500	6100	3340	3120	50-200	200	2
AT-900	270	900	54	135	21,03	151,6	144	3000	5500	2880	2690	50-200	200	3
AT-1200	360	1200	72	180	24,3	202,2	216	3500	6100	3340	3120	50-200	200	3

August & Co. Biological Waste Water Treatment Plant Efficiency

PARAMETER	PLANT EFFICIENCY AS a PERCENTILE		PLANT EFFICIENCY CONCENTRATION	
	Average	Maximum	Average	Minimum
COD	91.7%	95.6%	51.8 mg/l	36 mg/l
BOD ₅	97.0%	98.4%	10 mg/l	5 mg/l
SS	97.0%	98.0%	12.1 mg/l	9 mg/l
N-NH ₄	98.6%	99.7%	0.8 mg/l	0.2 mg/l
N total	80.7%	91.1%	14.8 mg/l	10.8 mg/l
P total	75.6%	89.0%	3.3 mg/l	1.3 mg/l





Closed-type, AT-5,000.
Population equivalent - 5,000.
Number of Reactors - 2.
Hydraulic Load - 750 m³/day.
Location - Hotel Le Méridien Vilnius, Lithuania.

MODEL	NUMBER OF REACTORS		AVERAGE DAILY LOAD (kg BOD ₅)	HYDRAULIC LOAD (m ³ /day)	EXCESS SLUDGE (kg/day)	ELECTRICAL USAGE (kWh/day)	TECHNICAL DIMENSIONS		
	Min.	Max.					LENGTH (m)	WIDTH (m)	HEIGHT (m)
AT-1000	1	4	60	150	30	144	11	9	3,5
AT-1500	1	6	90	225	45	195	12	9	4
AT-2000	1	8	120	300	60	260	13	10	4
AT-2500	1	10	150	375	75	300	12	12	4,5
AT-3000	1	12	180	450	90	360	13	13	4,5
AT-3500	1	14	210	525	105	421	14	13	4,5
AT-4000	1	16	240	600	120	481	18	12	4,5
AT-4500	1	18	270	675	135	534	18	13	4,5
AT-5000	1	20	300	750	150	587	20	13	4,5

August & Co. technology can handle up to 200,000 population or 30,000 m³/d



Open-type, AT-5,000.
Population equivalent - 5,000.
Number of Reactors - 2.
Hydraulic Load - 750 m³/day.
Location - Maišiagala pop., Lithuania

TESTVON VORSTELLE

PERFORMANCE RESULTS

August IR Ko
 Jurdass kelias 104A, 11307 Vilnius
 Lithuania

EN 12566-3

Results corresponding to the Irish National Annex for IS EN 12566-3

Small wastewater treatment system VFL® bioreactor AT
 Modified continuous activated sludge process (with filter)

Normal operating daily load*	0.32	kg/d
Normal hydraulic daily load	1.20	m³/d
Maximum hydraulic daily load	1.20	m³/d
Maximum organic loading rate (test)	0.32	kg/d
Chemical oxygen demand (calculation method)	0.32	kg/d
Removal	99	%
Efficiency		
by continuous process		
COD	88.1	%
BOD ₅	97.5	%
SS	95.7	%
TP	94.3	%
Effluent	50 mg	
	7 mg	
	1.1 mg	
	17 mg	
Efficiency		
by VFL®		
COD	88.1	%
BOD ₅	97.5	%
SS	95.7	%
TP	94.3	%
Effluent	50 mg	
	7 mg	
	1.1 mg	
	17 mg	
Electrical consumption		
* at a flow different to 3.60 m³/d (BOD ₅ load)	1.20	kWh/d
* determined for temperatures > 12 °C in the bio-reactor		

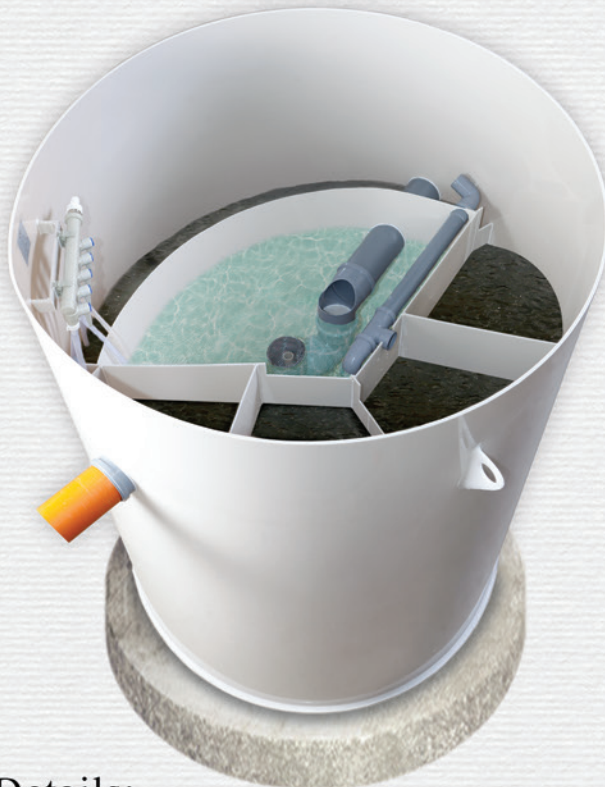
Project location: Ireland, Co. Wick
PIA – Institut für Abwassertechnik GmbH
 (PIA GmbH)
 Hergerväher Weg 30
 D-52574 Aachen

Certified according to
 ISO 9001:2008

Notified body number: 1719

This document replaces either the declaration
 of conformity or the CE marking.

Oliver Lütke February 2012

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