

Aerofloat

Introduction to Aerofloat
Marine and Industrial WWT

Presented by Ray Anderson
September, 2011

- **Design proven through certification testing**
- **Achieved results**
- **Proven through increased Sales**

TABLE A1
SYNTHETIC GREYWATER RECIPE

Ingredient	Amount in 100 L	Product example
Sunscreen or Moisturizer	1.5 g 1 g	Commercially available sunscreen or moisturizer
Toothpaste	3.25 g	Commercially available toothpaste
Deodorant	1 g	Commercially available deodorant
Na ₂ SO ₄	3.5 g	Analytical grade
NaHCO ₃	2.5 g	Commercially available product
Na ₂ PO ₄	3.9 g	Analytical grade
Clay	10 g	Industrial grade
Vegetable oil	50 mL	Commercially available vegetable oil
Vegetable soup	50 g	Commercially available product
Full cream milk	60 mL	Commercially available full cream milk
Lard	25 g	Commercially available product (100% animal fat)
Shampoo/handwashing liquid	72 g	Commercially available shampoo/ handwashing liquid
Laundry	15 g	Commercially available laundry powder
Dishwashing (sink) detergent	1 mL	Commercially available dishwashing detergent
Dishwasher detergent	5 g	Commercially available dishwasher detergent
Secondary effluent (see Note)	4 L	Collected from secondary clarifier

Certification Test Results Discharge Specification and Statistics

AEROFLOAT CERTIFICATION TO AS 4995 2009 - appendix A results						
Treated Effluent	units	Discharge Criteria	% passed	% required to pass	Average % removal	
BOD	mg/L	Reduction	100%	90%	89.2%	
E.coli	/100mL	<100	98%	95%	99.99%	
Enterococci	/100mL	< 40	100%	95%	97.5%	
Oil and Grease	mg/L	<25	100%	90%	95.9%	
Total Phosphorus	mg/L	< 1	100%	90%	96.2%	
Suspended Solids	mg/L	< 50	100%	90%	92.5%	
Total Nitrogen	mg/L	<10	100%	90%	43.0%	

Certification Test Results Influent and Effluent Values

AEROFLOAT CERTIFICATION TO AS 4995 2009 - appendix A results							
Summary of Influent and Effluent Results							
	units	Average		% removal	90th percentile		% removal
		Influent	Effluent		Influent	Effluent	
BOD₅	mg/L	664	71.6	89%	987	109.4	89%
E.coli	/100mL	231714	11	100%	89200	28	100%
Enterococci	/100mL	156	4	98%	396	15.2	96%
Oil and Grease	mg/L	389	9.9	97%	783	16	98%
Phosphorus - Total	mg/L	11.7	0.4	96%	14.3	0.75	95%
Suspended Solids	mg/L	321	24	92%	472	34	93%
Total Nitrogen	mg/L	8.2	4.7	43%	9.8	6.3	36%

Discussion on Total Nitrogen and BOD₅

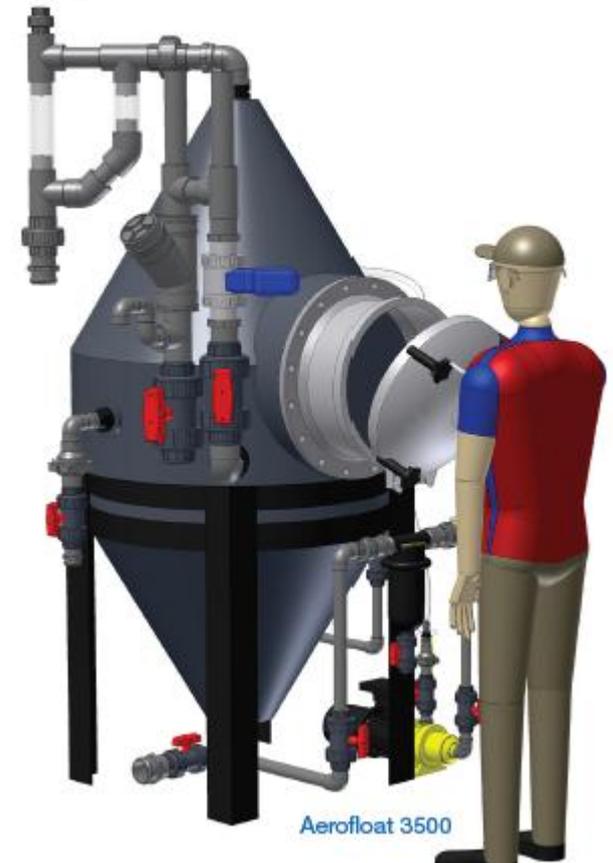
- **Total BOD vs Soluble BOD**
- **Aerofloat will not remove soluble Nitrogen or BOD**
- **Shampoos main contributor to soluble Nitrogen**
- **Can use Sodium based rather than Ammonia based shampoo**
- **Kitchen Waste Main Contributor to Soluble BOD**
- **Kitchen waste can be collected with Blackwater**

Aerofloat 3500

Aerofloat

Aerofloat 3500 design complete

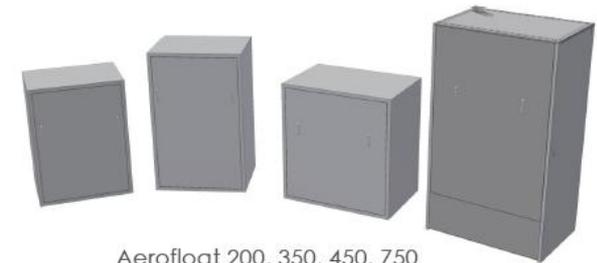
- A more sophisticated design for larger applications



Market Opportunity - Marine Applications

Aerofloat

- **200, 350, 450, 750 all currently operational in Australian houseboats**
- **Applicable also to bilge water treatment**
- **Land based collection systems?**



Aerofloat Model number	Treatment capacity litres / hour	Suitable for the following number of berths	Hours of operation per day	Dimensions Height-mm x width-mm x depth-mm	Holding tank size - length of 300mm pipe -metres	Operating Weight - Kg	Power usage - 240 Voltage supply
200	200	2 to 4	1.5 - 3.0	1000x750x570	6	195.00	270 watts
350	350	4 to 6	1.7 - 2.6	1200x750x570	6	245.00	270 watts
450	450	6 to 8	2.0 - 2.7	1000x930x630	6.0 - 10.0	295.00	410 watts
750	750	6 to 12	1.2 to 2.4	1630x930x630	6.0-9.0	395.00	410 watts

Treated Effluent Comparison with River Water

Aerofloat

**River
Water**



EPA Letter of Recognition

Aerofloat

Environment Protection Authority
www.epa.sa.gov.au



GPO Box 2807 Adelaide SA 5001
250 Victoria Square Adelaide SA
T (08) 8204 2000 F (08) 8204 2020
Country areas 1800 825 445

EPA 05/11702

Mr Ray Anderson
Managing Director
Aerofloat (Australia) Pty Ltd
PO Box 884
CARINGBAH NSW 1495

Dear Mr Anderson

I refer to your request dated Friday 12 March 2010, regarding Environment Protection Authority (EPA) recognition that the Aerofloat greywater treatment plant is suitable to manufacture and market for use on-board vessels travelling on South Australia's inland waters.

The legislative requirements in relation to on-board greywater treatment systems in South Australia are set out in the *Code of Practice for Vessel and Facility Management (marine and inland waters)*. The discharge standards are summarised as follows:

- Suspended solids less than 50mg/L
- Total grease content of less than 25 mg/L
- Nitrogen content of less than 10 mg/L
- Phosphorus content of less than 1 mg/L
- Enterococci of less than 40 cells per 100mL
- Biochemical oxygen demand is reduced by digestion, oxidation or other recognised treatment method

Based on the water quality results and the final report titled "Aerofloat Greywater Treatment Plant Report on Results of Prototype and Unforgettable Number 3 Treatment Units V4", of the recent commercial trials undertaken in conjunction with the EPA and Unforgettable Houseboats Pty Ltd, I can confirm that (provided the plant is operated in accordance with your operating and maintenance procedures), the Aerofloat greywater treatment plant meets the on-board greywater treatment system discharge standards for vessels travelling in South Australia's inland waters.

On behalf of the EPA, I congratulate Aerofloat (Australia) Pty Ltd and your associates for your commitment and achievements throughout the development of this new and exciting technology and we look forward to working with you in the future.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'PDolan', written over a light blue grid background.

Peter Dolan
DIRECTOR
SCIENCE & ASSESSMENT DIVISION
ENVIRONMENT PROTECTION AUTHORITY

Date: 24/3/10

EPA Letter of Recognition

Aerofloat

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Peter Dolan

DIRECTOR

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Date: 24/3/10