

TREATMENT PLANT APPROVAL 02/2024

Plumbing and Drainage Regulation 2019, part 4

Approval

1. The **BioCell ADGF01** (“the System”) described in the Specifications and Drawings in the attached Schedule and manufactured by **Greywater Solutions Pty Ltd** (“the manufacturer”) (ABN 38 522 491 905) (“the manufacturer”) has been assessed in accordance with the *Queensland Plumbing and wastewater Code Version 1 2024*.
2. Approval is granted for the system as an “**High-quality effluent**” wastewater treatment system, subject to compliance by the manufacturer with the requirements of the *Queensland Plumbing and Wastewater Code - Schedule 1*, and the *Queensland plumbing and Drainage Regulation 2019* and the conditions of approval detailed below.
3. As no changes have been made to the system, this approval replaces the previous Treatment Plant Approval (TPA) TPA 08/2021 Amendment 1 issued on 22 December 2023.
4. This approval, the conditions of approval and the Schedule comprise the entire Chief Executive Approval document.
5. Any modification by the manufacturer to the design, drawings or specifications scheduled to this approval must be approved by the Chief Executive.

Conditions of approval

6. The manufacture, installation, operation, service, and maintenance of the system must be in conformity with the conditions of this Treatment Plant Approval.
7. The system may only be used on premises that generate per day:
 - (a) a maximum hydraulic loading of 800 L; and
 - (b) a maximum organic loading of 700 g BOD₅.
8. For the system to meet the requirements of an “**High-quality effluent**” greywater treatment system, the system must produce the following effluent quality —
 - (a) 90% of the samples taken must have a BOD₅ less than or equal 10 g/m³ with no sample greater than 20 g/m³; and
 - (b) 90% of the samples taken must have total suspended solids less than or equal 10 g/m³ with no sample greater than 20 g/m³; and
 - (c) 90% of the samples taken must have thermotolerant coliform count not exceeding 10 organisms per 100 mL with no sample exceeding 200 organisms per 100 mL.
 - (d) The total chlorine concentration shall be greater than or equal to 0.5 gm³ and less than 2.0 g/m³ in four out of five samples taken.
9. Each system must be serviced in accordance with the manufacturers details supplied in the owner’s service and maintenance manuals.
10. Each system must be supplied with —
 - (a) a copy of this Treatment Plant Approval document;
 - (b) details of the system and ancillary equipment;
 - (c) instructions for authorised persons for its installation;
 - (d) a copy of the owner’s manual to be given to the owner at the time of installation; and
 - (e) detailed instructions for authorised service personal for its operation and maintenance.

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11. This approval does not extend, apply to, or include the land application system used in conjunction with an approved system installed on premises.
12. At each anniversary of the Treatment Plant Approval date, the manufacturer must submit to the Chief Executive a list of all systems installed in Queensland that they have received an installation and commissioning certificate for during the previous 12 months.
13. Where the Chief Executive is notified of any system failures that they believe are a result of poor design or faulty manufacture, the Chief Executive may randomly select a number of installed systems for audit. The Chief Executive will notify the National Association of Testing Agencies (NATA) accredited laboratory nominated by the manufacturer, which systems are to be audited for Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS). The sampling and testing of the selected systems, if required, is to be done at the manufacturer's expense. The following results must be reported to the Chief Executive;
 - (a) Address of premises.
 - (b) Date inspected and sampled.
 - (c) Sample identification number.
 - (d) Biochemical Oxygen Demand (BOD₅).
 - (e) Total Suspended Solids (TSS).
14. The Chief Executive may, by written notice, cancel this approval if the manufacturer fails —to comply with one or more of the conditions of approval; or within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.
15. This approval may only be assigned with the prior written consent of the Chief Executive.
16. This approval expires on **30 April 2029** unless cancelled earlier in accordance with paragraph 14 above.

Lindsay Walker



Director
Plumbing, Drainage and Special Projects
Date approved: 29 April 2024

Level 15,
53 Albert Street Brisbane
GPO Box 2457, Brisbane Qld 4001

Telephone +61 7 3008 2557
[Plumbing and drainage | Business Queensland](#)





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SCHEDULE

ADGF01 Greywater Treatment System.

Attachment 1 – ADGF01 Greywater Treatment System - Operators manual.

Attachment 2 – ADGF01 Greywater Treatment System - Schematic diagrams.

Attachment 1 – ADGF01 Greywater Treatment System - Operators manual.

BioCell Grey Water Filter Customer Manual

Private & Confidential
Bio Cell Grey water filter Customer Manual no 6

Introduction

Your *BioCell* Unit is a living breathing ecosystem, engineered to silently change your greywater into valuable reuse water.

Provided you operate the *BioCell* Unit within the loading specification and as described in this manual, you can expect to always have quality reuse water produced.

Care of your *BioCell* Unit

What can go down the drain?

- Biodegradable soaps and low phosphorus detergents
- Septic-safe disinfectants, bleaches and toilet cleaners in small dilute amounts
- Washing machine and dishwasher wastewater
- Shower and bath wastewater
- Milk and drinks

What should not go down the drain?

- Paints or solvents
- Pesticides or herbicides
- Poisons or drugs
- Oil
- Concentrated bleach, caustic soda or detergent
- Antibiotics or medicines
- Toxic materials
- Products containing heavy metals
- Storm / roof water
- Pool or spa waste
- Septic tank bacteria or enzymes are not necessary
- Incinerator garbage grinder scraps

Getting the best from your *BioCell* Unit

Your *BioCell* Unit is designed to operate at a peak quantity of 800 litres of greywater per day. The buffer tank installed as the first point to hold greywater has a capacity of 1100 litres, therefore this can hold more than one days greywater. Therefore it is important not to overload the unit for extended periods otherwise the performance of the Unit will be compromised. Be conscious of excessive greywater generation.

If your household or facility loading is consistently above the 800 litres per day some actions to help reduce the load on the unit are:

- spread your wastewater flow through the day, for example, if possible try to space out showers, loads of washing and the dishwasher.

- Install water conservation fittings on showers and toilets to help reduce water usage saving hot water, green house gas production and power.
- If your house is on mains water or a gravity fed supply, please consciously reduce water consumption to the bare essentials during a power failure, as this will ensure you can continue essential water usage for a prolonged period.

Be careful when mowing or operating any plant near the *BioCell* Unit or tanks not to damage the tank lids or to build up material around the tank surface. The tank is at least 30mm out of the ground to stop rainwater entering the system. Contact *BioCell* if the lid is damaged to obtain a replacement.

Do not plant trees or shrubs in close proximity to the unit or tanks. This will avoid root penetration or damage of the system.

Ants, rats or mice should be actively discouraged from residing in the Unit. These can damage the Unit structure.

Safety precautions

The following safety precautions will ensure safe and effective use of your *BioCell* Unit:

- Keep children away from your *BioCell* Unit – it's not a suitable play area
- Keep the access cover and their safety screws in place to prevent children or animals from entering the tanks or the Unit.
- Protect any *BioCell* Unit treated water dispersal area from all vehicular traffic and livestock – nothing heavier than a lawn mower
- Your irrigation system is your responsibility, and *BioCell* only pass on any warranties offered by the various manufacturers and specified at the time of purchase so avoid digging in your irrigation area as you may damage or cut your irrigation dripper pipes.
- The inside of your *BioCell* Unit is defined as a confined space under Workplace Health and Safety legislation as it could potentially contain a hazardous atmosphere and will certainly contain human pathogens – please leave it to a licensed *BioCell* service technician trained to work safely in such conditions to open and work on your unit.

Warranty & Maintenance

Your *BioCell* Unit comes with a 12 month service contract and warranty and there is no service fee for this period, provided you operate the system within the design specification as discussed above.

Under our service contract, Your *BioCell* Unit will be maintained for the first 12 months by an approved serviceperson free of charge. Following this period you are required by state laws to have a Service Contract with the supplier to certify the performance of the system.

Your obligations

Your system includes a failsafe warning light. Please notify the *BioCell* Licensee immediately if this light switches off. This indicates a failure in the system and must be attended to by a *BioCell* approved technician immediately.

With our innovative annual Service Agreement we are just as interested in ensuring your system is always operating perfectly as you are. Please treat us as your partners in helping create a cleaner environment.

Notify your *BioCell* Licensee of any new owner if you move house as we will need to arrange transfer or renewal of the service contract with the new owner.

Let us know if you change your phone number otherwise we can not continue to provide service to your unit as we will not be able to contact you in the event of a failure or to arrange a routine service visit.

Notify your *BioCell* Licensee if your average or peak usage exceeds what the system is designed to treat. We may be able to augment your system or install plumbing fixtures into your facility economically that will allow your system to operate within specification.

Notify your *BioCell* Licensee if you have accidentally disposed of any of the above unsuitable things. Timely maintenance could prevent a more costly service charge.

Troubleshooting Guide

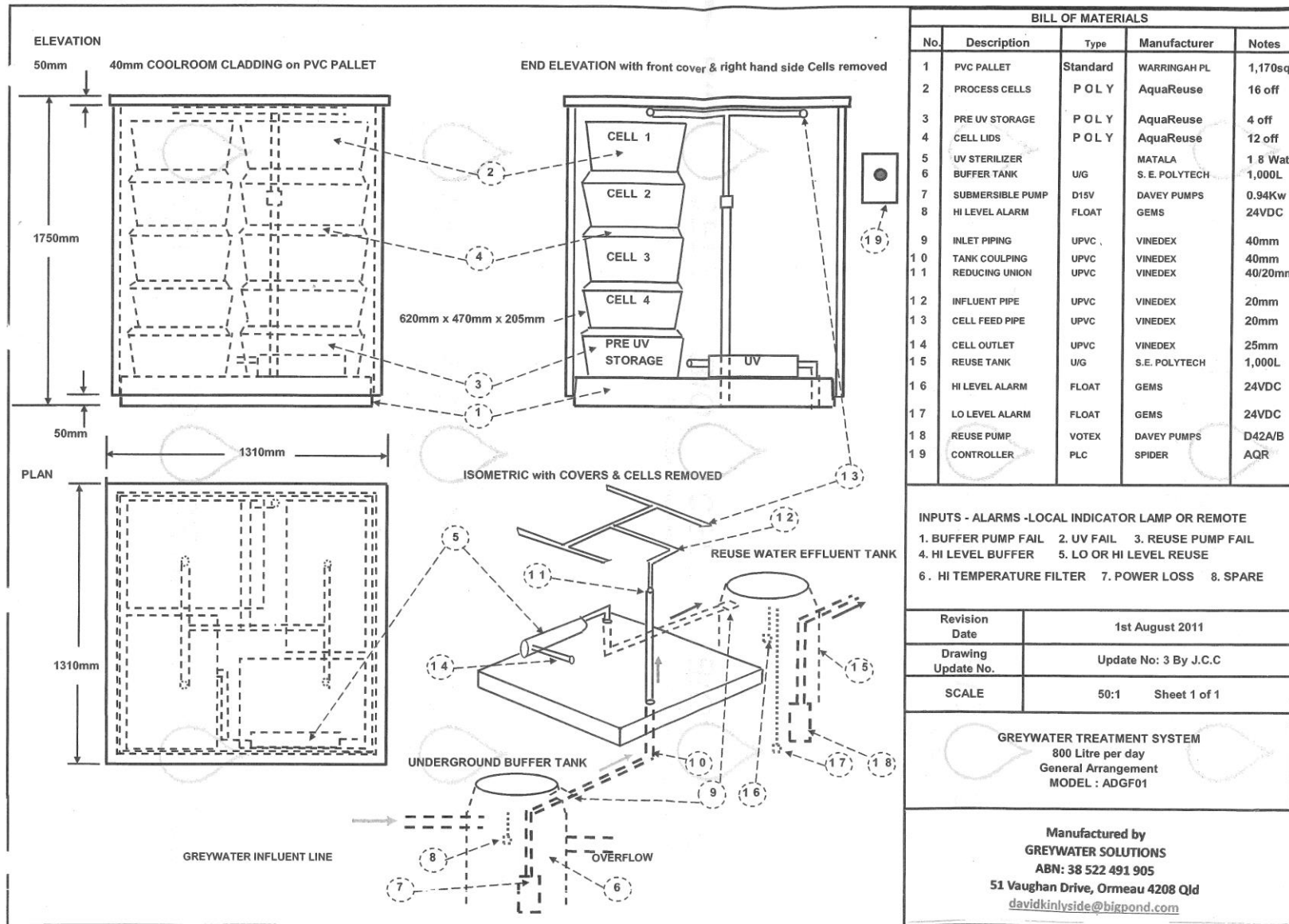
The most common cause of alarm activation is a power failure to the unit. Make sure you or your children do not turn the power off at any time. Before we make an emergency visit you may be asked to check some simple things such as if there is power on to the *BioCell* Unit.

There is an emergency storage capacity of at least 1100 litres in the event of a pump failure and there is a freely drained refuge area above the emergency overflow level to protect the key organisms in your system in the event of a prolonged power or pump failure and your system should resume normal operation without problems after pump operation is restored.

Please do not attempt any maintenance yourself, there are strict Workplace Health and Safety and environmental legislation regarding disposal of hazardous waste and wastewater.

For on-line advice, management hints and in-service updates contact Greywater Solutions greywater@onthenet.com.au

Attachment 2 – ADFG01 Greywater Treatment System - Schematic diagrams.



Treatment Plant Approval
 Approved by: Lindsay Walker
 Delegated Authority
 Department of Energy & Public Works

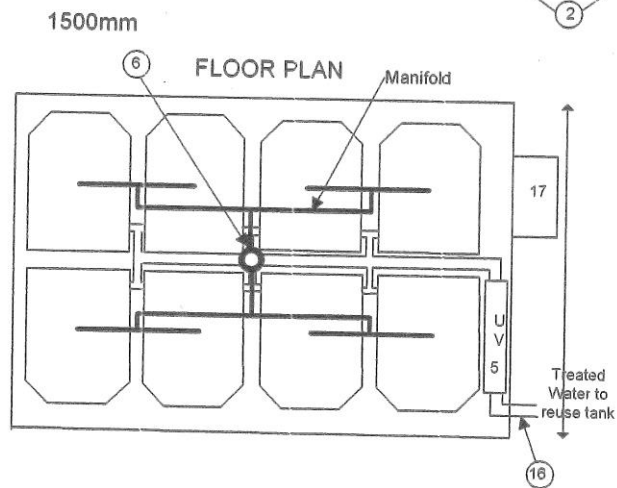
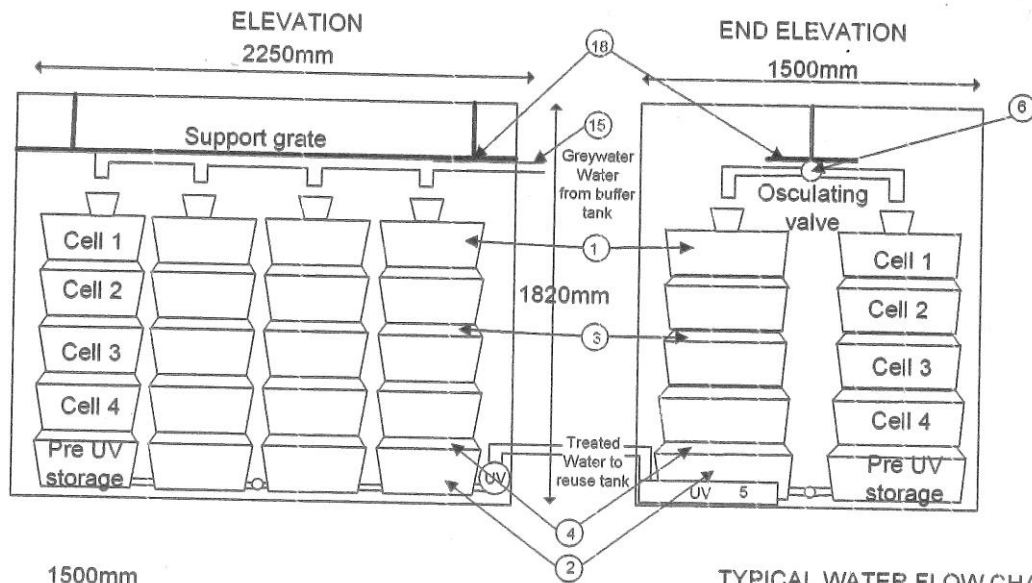
Treatment Plant Approval

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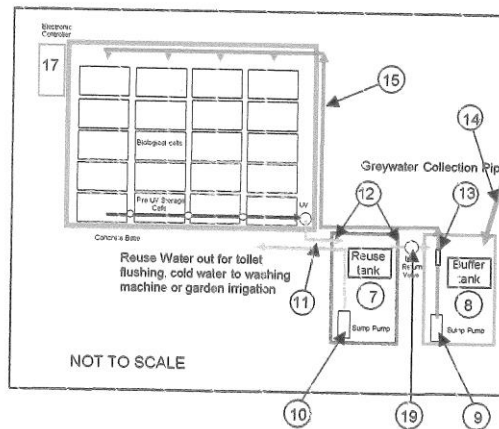
Delegated Authority

Department of Energy & Public Works





TYPICAL WATER FLOW CHART



BILL OF MATERIALS				
No.	Description	Type	Manufacturer	Notes
1	Flow Through Cells	Poly	AquaReuse	32 cells
2	Pre UV Storage Cells	Poly	AquaReuse	8 cells
3	Air Flow Cell Lid	Poly	AquaReuse	24 lids
4	Closed Cell Lid	Poly	AquaReuse	8 lids
5	UV Sterilizer		Matala	1 Off
6	Osculating Valve	upvc	Fimco	1 Off
7	Buffer Tank	U/G	S.E. Polytech	1 Off
8	ReUse Tank	U/G	S.E. Polytech	1 Off
9	Submersible Pump	D15v	Davey Pumps	0.94Kw
10	Submersible Pump	D42A/E	Davey Pumps	1 Off
11	Inlet Piping	upvc	Vinedex	40mm
12	Tank Coupling	upvc	Vinedex	40mm
13	Reducing Union	upvc	Vinedex	40/20mm
14	Influent Pipe	upvc	Vinedex	20mm
15	Cell Feed Pipe	upvc	Vinedex	20mm
16	Cell Outlet	upvc	Vinedex	25mm
17	Controller	PLC	Spider	AQR
18	Cable support tray	Alum	EzyStruts	1 Off
19	Non Return Valve	Brass	Tornado	2 of

INPUTS-LOCAL INDICATOR LAMP
Buffer Pump Fail, Reuse Pump Fail, High Water Level
Power Loss, Power On

Revision Date: 1st June 2023
Drawing By: D Kinlyside
License No: PD30452
Scale: 1:50

GREYWATER TREATMENT SYSTEM
1600 litres per day module system
Model: ADGF02

Manufactured by
GREYWATER SOLUTIONS PTY LTD
ABN: 38 522 491 906