TREATMENT PLANT APPROVAL 08/2025
Plumbing and Drainage Regulation 2019, part 4.

Approval

1. The **Bio Pro Twin Poly** system (the system), as detailed in the Schedule, is manufactured and supplied by **EcoSeptic Pty Ltd** (ABN 80 086 310 474) trading as Biocycle ("the manufacturer"), has been assessed in accordance with:
   (a) section 19 of the *Plumbing and Drainage Regulation 2019,* and
   (b) the Queensland Plumbing and Wastewater Code, published on 26 April 2024.
2. A Treatment Plant Approval (TPA) is issued for **Advanced secondary-quality** wastewater treatment with **nutrient reduction** for the system, subject to the manufacturer's compliance with the Plumbing and Drainage Act 2018 and the conditions of approval outlined below.
3. This approval, together with its conditions and the attached Schedule, constitutes the complete TPA document.
4. Any modification to the design, drawings or specifications listed in this approval must be approved by the Chief Executive.

Conditions of approval

5. The manufacture, installation, operation, service, and maintenance of the system must conform with the conditions of this TPA.
6. The system, when tested by a certification accreditation body in accordance with AS1546.3:2017, was found to comply with the **Advanced secondary quality,** 10 EP/1500 L/day level. The system was also assessed on its ability to **reduce nutrients**. The system must continue to meet the following effluent criteria:

   (a) Advanced secondary quality treatment

Table 2.1 (Abrev) AS1546.3:2017 Advanced secondary effluent compliance criteria for an STS

Parameter	Advanced secondary effluent	
	90% of Samples	Maximum
BOD^5	≤ 10 mg/L	20 mg/L
TSS	≤ 10 mg/L	20 mg/L
*E. coli**	≤ 10 cfu/100 mL	30 cfu/100 mL
FAC[Þ]	Minimum 0.5 mg/L[†]	N/A
Turbidity [§]	N/A	10 NTU

* Where disinfection is required
Þ Where chlorine disinfection is required
† Minimum level, not 90% of samples
§ Where UV light is used for disinfection

   (b) Nutrient reduction capacity

   During the testing of the system, the treated effluent was tested for total nitrogen (TN) and total phosphorus (TP) concentrations. The system has the capacity to reduce the TN and TP concentrations as follows:

   - TN an average of 65.99 mg/L to 41.76 mg/L which represents a reduction of **36.71%**
   - TP an average of 9.88 mg/L to 9.19 mg/L which represents a reduction of **6.99%**

Treatment Plant Approval
Approved by: Michael Essery
Delegated Authority
Department of Housing & Public Works

Date: 13 June 2025

7. Each system must be serviced in accordance with the Certificate of Conformance, certificate number 7285-3450-01, issued by Global Certification Pty Ltd on 20 May 2025 and details supplied in the owner's operation and maintenance manual.

8. Each system must be supplied with —

   a. a copy of this TPA document
   b. details of the system
   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
   e. detailed instructions for authorised service personal for its operation and maintenance.

9. At each anniversary of the TPA date, the supplier must submit to the Chief Executive a list of all systems installed in Queensland during the previous 12 months. Where the Chief Executive is notified of any system failures the Chief Executive may randomly select several installed systems for audit. The Chief Executive will notify the supplier's nominated NATA accredited laboratory which systems are to be audited for BOD^5 and TSS. The sampling and testing of the selected systems, if required, is to be done at the supplier'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. BOD^5 for influent and effluent
   e. TSS for influent and effluent.

10. The Chief Executive may, by written notice, cancel this TPA if the manufacturer/supplier fails —

    a. to comply with one or more of the conditions of approval, or
    b. within 30 days, to remedy a breach, for which a written notice been given by the Chief Executive.

11. This approval may only be assigned with the prior written consent of the Chief Executive.

12. This approval expires on **13 June 2030** unless cancelled earlier in accordance with paragraph 10 above.

Michael Essery

Treatment Plant Approval
Approved by: Michael Essery
Delegated Authority
Department of Housing & Public Works

Director
Plumbing, Drainage and Special Projects
Date approved: 13 June 2025

Level 15,
53 Albert Street Brisbane
GPO Box 2457, Brisbane Qld 4001
Website www.hpw.qld.gov.au
ABN 61 331 950 314

TREATMENT PLANT APPROVAL 08/2025
Plumbing and Drainage Regulation 2019, part 4.

SCHEDULE

Bio Pro Twin Poly

Attachment 1 – Global Certification Certificate 7285-3450-01
Attachment 2 – Bio Pro Twin Poly Owner's manual
Attachment 3 – Bio Pro Twin Poly Schematic diagram

Treatment Plant Approval
Approved by: Michael Essery
Delegated Authority
Department of Housing & Public Works

Date: 13 June 2025

Attachment 1 – Global Certification Certificate 7285-3450-01

PRODUCT CERTIFICATE OF REGISTRATION

ECO – Septic Pty Ltd T/A Econocycle

Head Office: 65 – 67 Warradale Road, Warragamba, NSW 2752, Australia

Product Performance Testing

AS 1546.3:2017
Advanced Secondary 1500 L/day 10EP Level
with Nutrient Reduction of 36.71% in Nitrogen and 6.99% in Phosphorus

Model	Disinfection	Average Results over the Test Period	Servicing Frequency	Discharge	Manufactured and assembled
Ecoseptic model Eco Pro Twin Tank Poly 1500	Yes	TSS 5.17 mg/l BOD5 3.38 mg/l Turbidity 12.59 NTU E coli 4.87 CFU/100ml TN 41.76 mg/L TP 9.19 mg/L	3 Month Service 4.68 yearly sedimentation pump out or as required	Pumped via disinfection/pump chamber with chlorine dispenser	Manufactured and Assembled: 65 Warradale Road, Warragamba, NSW 2752, Australia
BioCycle model Bio Pro Twin Tank Poly1500	Yes	TSS 5.17 mg/l BOD5 3.38 mg/l Turbidity 12.59 NTU E coli 4.87 CFU/100ml TN 41.76 mg/L TP 9.19 mg/L	3 Month Service 4.68 yearly sedimentation pump out or as required	Pumped via disinfection/pump chamber with chlorine dispenser	Manufactured and Assembled: 65 Warradale Road, Warragamba, NSW 2752, Australia
The system took 2 weeks to meet the advanced secondary standard.					

This Certificate of Conformance to the Product Certificate Scheme for "Domestic Wastewater Treatment Units (AWTS)" remains the property of Global Certification Pty. Ltd. and is granted subject to the terms and conditions of the Contract Application, in respect of the Product certified on this page and the attached schedule to the Certification of Conformance, bearing the same number as this certificate.

Evan Miller - General Manager
Global Certification Pty Ltd

CERTIFICATION DATE:	DATE OF ISSUE:	EXPIRY DATE:	CERTIFICATE #:
16 May 2025	20 May 2025	16 May 2030	7285-3450-01

GLOBAL CERTIFICATION

Global Certification Pty Ltd
1C, 60 Enterprise Place, Tingalpa, QLD 4173, Australia
1300 495 855 | www.globalcertification.com.au

Global Certification Pty Ltd is accredited by The Joint Accreditation System of Australia and New Zealand (www.jas-anz.org/register) – accreditation number: 24480410AC

Attachment 2 – Bio Pro Twin Poly Owner's manual

bioCYCLE™

bioCycle Twin Poly Owners Manual

A reference guide

CONTENTS

PRE INSTALLATION INFORMATION

AFTER INSTALLATION CARE

OWNERS MANUAL & DETAILS

- Name .....
- Address .....
- Model .....
- Installation Date .....

Thank you for purchasing that system, which we believe, is the best available. The local environment will also show its appreciation.
Your bioCycle Wastewater Treatment System is designed to treat domestic wastewater to a very high standard. All that is needed are some common sense household approaches.
It is not only hygienically safe but also ideal to discharge above ground with no offensive odours.

It saves water usage (and water rates) by recycling through an automatic irrigation system, water that would under normal circumstance go to waste, adds value to your property and promotes garden growth. The system does all this quietly and is fully automatic.
The bioCycle system is a biological filtration treatment system and does not rely on strainer type filters to process household water.

IRRIGATION REQUIREMENTS

Irrigation requirements differ from council to council so please ensure that you refer to your site assessment report and/or council approval.

If your requirements are greater than the standard irrigation package supplied by us (ie. 50m ply pipe laid above ground and 4 sprinklers), please contact your bioCycle representative or local irrigation specialist. This may avoid potential hold ups of your final council inspection.

INSTALLATION INSTRUCTIONS (Plumbing)

The following instructions are to enable the proper installation of the bioCycle unit. It is necessary the follow these instructions so you don't void any warranties. Please ensure you have council permits/ approvals before installation of tank.

Please give minimum of one weeks' notice for your bioCycle unit, more notice is appreciated to ensure truck availability.

Risers, if required, should be ordered with bioCycle before delivery of the unit. If ordered separately, delays and additional delivery charges will be incurred. (Risers raise top of tank if there are drainage issues).

All deliveries are C.O.D payments and are to be given to the driver before unloading, unless other arrangements have been made.

When excavating the hole for the tank/s please ensure the excavation size is correct (if you have any doubt please contact your bioCycle representative). Absolutely free access to the excavation and the area for the truck is critical. The truck must be able to get within 1 metre of the tank excavation and the area for the truck to unload must be firm ground and less than 5% grade. The driver's judgement of the safe unloading and accessibility is final. Failure to comply will incur additional installation costs at your expense.

Ensure that the excavation has a level base. The base of the hole is determined by the height of the inlet pipe (this will also determine the overall height of the tanks/s). The base must be firm and be on a 50mm bed of sand or similar material. Failure to do so will void any tank warranty.

Backfill the tank/s with clean backfill free of large roads, sharp objects and rubbish, then fill tank/s with clean water immediately. This is best done with a hose. For plastic tanks fill pump out chamber first.

All plumbing and electrical connections must be carried out by licensed contractors in accordance with any government guidelines or council requirements.

Model Twin Poly- (plastic twin tank system) must also follow additional instructions supplied with the unit on delivery. These additional instructions include "ground anchors".

INSTALLATION INSTRUCTIONS (CONT)

CANCELLATION

If you wish to cancel a delivery, you must do so by 1:00pm the day preceding the delivery.

CANCELLATION DUE TO OVERNIGHT RAIN

If a site contact person and phone number has been provided by you we will try to contact that person/s between 5:30 – 8:00 am to ensure the delivery is still required. bioCycle cannot accept any responsibility for failure to contact your site person/s nominated.

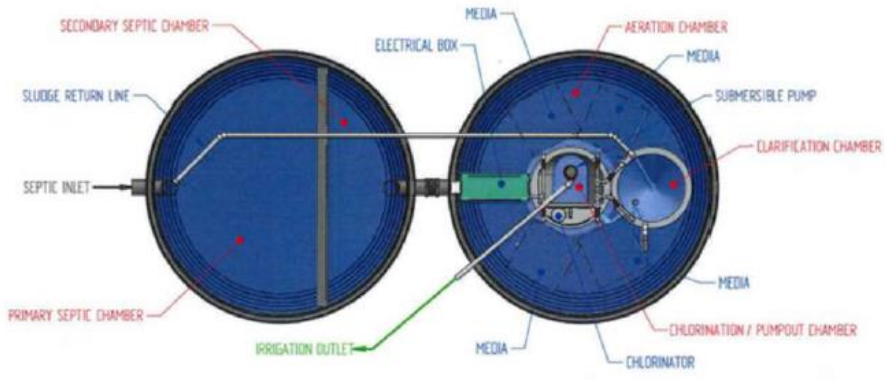
Late notice of cancellation will incur an UNLOADING FEE or return to site cost or crane costs to your account.

WHEN YOU ARE READY TO USE YOUR bioCycle SYSTEM

When the bioCycle is ready to be used, contact your representative and notify them that you are ready for the unit to be commissioned. Please give at least one weeks' notice. Please ensure that the plumbing and electrical have been connected and are operational. This commissioning involves the fitting of the irrigation and aeration pumps and the laying out of the irrigation line. It is advisable that the owner / occupier is onsite at this stage to ask any questions you may have on operations of the bioCycle unit.

It is now that your quarterly service will begin. These services will occur automatically from this date. If prior arrangements have to be made to gain access, please notify bioCycle of all your details including work numbers.

PLEASE NOTE – Follow instructions carefully so you do not void your warranty.

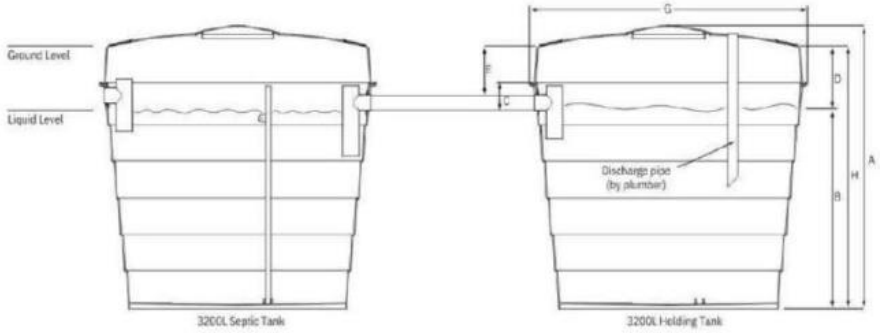


EXCAVATION DIMENSIONS

BIOCYCLE TWIN POLY

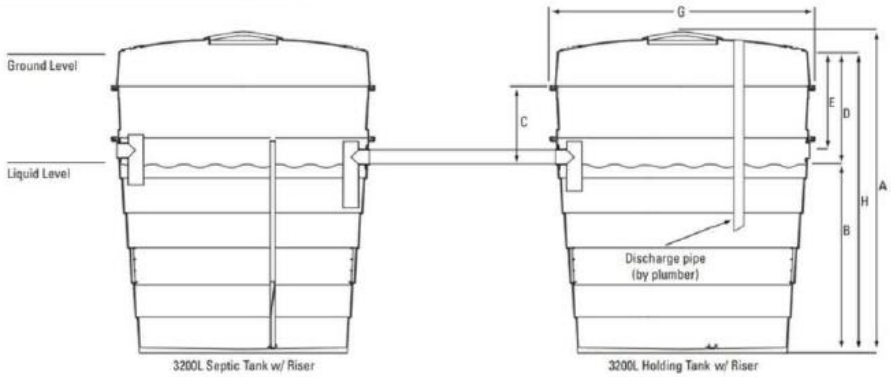
All Dimensions (mm), Capacities and Weights Nominal

A	Overall tank height	2038
B	Liquid depth level	1427
C	Tank rim to invert of inlet	200
D	Under roof to liquid level	460
E	Maximum cover to inlet pipe	350
G	Overall diameter	1998
H	Tank base to ground level	1887
	Capacity	3200L
	Weight	122kg



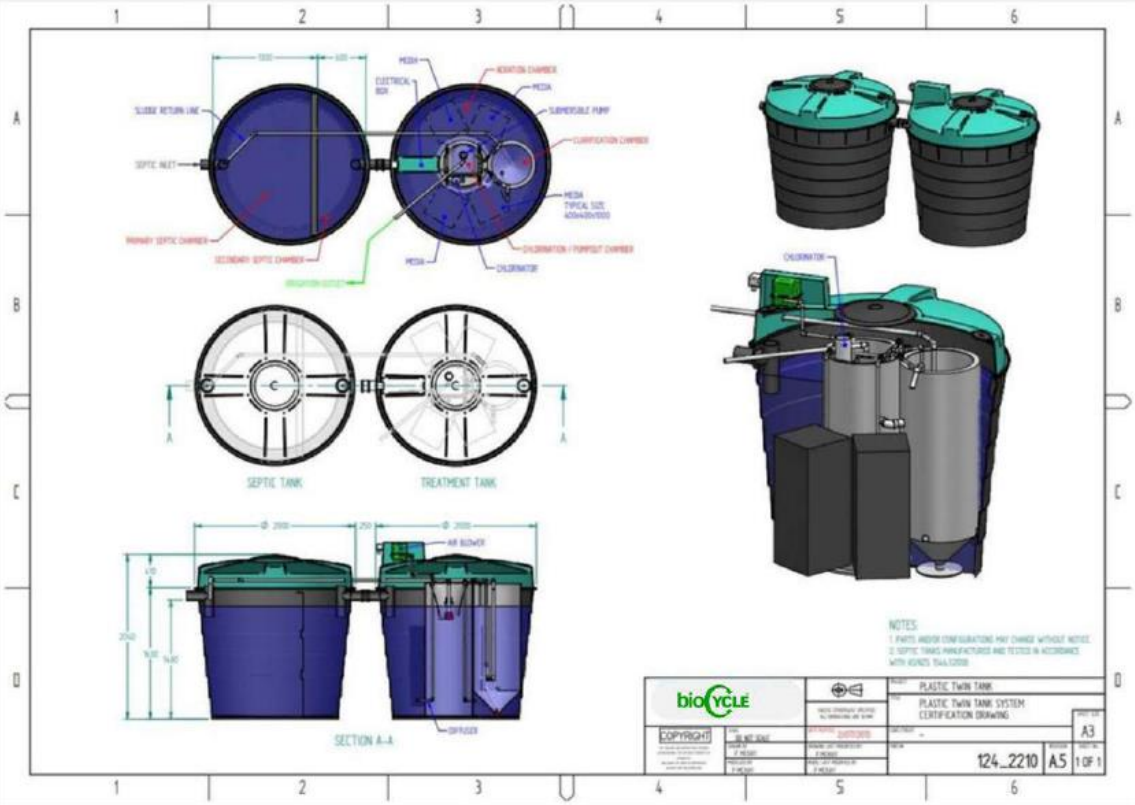
Dimensions Nominal (mm)

A	Overall tank height	2410
B	Liquid depth level	1427
C	Tank rim to invert of inlet	585
D	Under roof to liquid level	845
E	Maximum cover to inlet pipe	735
G	Overall diameter	1998
H	Tank base to ground level	2272
	Capacity	3200L
	Weight	159kg



SCHEMATICS

bioCycle TWIN POLY

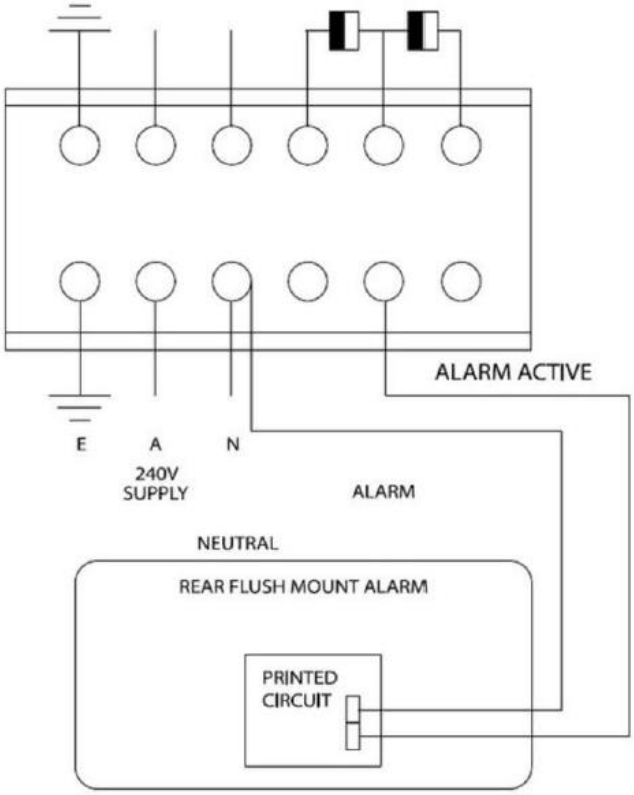


6

ELECTRICAL CIRCUIT DETAILS

RESIDENTIAL SYSTEM NOTE: All electrical work must be performed by a licenced electrical contractor in accordance with the S.A.A. wiring rules, (AS3000) and relevant local supply authorities rules.

- The preferred option is that the system be connected to a separate circuit
- The alarm panel should be fitted in a convenient location for the occupants to be aware of the alarm and access to mute function.
- Should the alarm be activated, switching to MUTE can turn off the buzzer. The alarm indicates high water level or loss of air. Each has a separate light, which will remain on until the fault has been rectified.
- It is most likely that the system will operate quite satisfactorilyfor several days even if a problem arises. However, if the warning is activated and none ofthe following solves the problem, please contact bioCycle as soon as possible.
- Irrigation Pump 550 watts - Aeration Pump 80 watts



7

TROUBLE SHOOTING

The bioCycle AWTS is supplied with a warning panel that alerts of malfunctions in its operations. The alarm panel must be left in the NORMAL position. Should the alarm be activated, switching to MUTE can turn off the buzzer. The alarm indicates high water level or loss of air. Each has a separate light, which will remain on until the fault has been rectified. It is most likely that the system will operate quite satisfactorily for several days even if a problem arises. However, if the warning is activated and none of the following solves the problem, please contact bioCycle as soon as possible.

PROBLEM	***WHAT TO DO***
Water Lights	Check the irrigations line and outlets are clear and not kinked or restricted. Clear filter (if fitted) Check power supply Allow 30 Minutes for system to catch up after power interruption
Air Light On	Check power supply Check that system is still making humming sound / blower working.
Offensive Smell	Check that smell is not coming from another source e.g. dry waste traps, damaged or low vents Check aeration pump operation
Irrigation not working	Clear outlets & or filters (if fitter) Check irrigation Pipework for damage.

8

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EQUIPMENT DESCRIPTION

The air blower is located under the cover on top of the tank. It provides fresh air to help the purifying microorganisms to carry out their job. The blower runs all the time. Although it is very quiet, a light humming noise can still be heard next to the blower.

Under the cover are the power sockets for the air blower and the submersible pump, as well as a two-pin socket for the high level float switch.
An automatic submersible pump delivers the treated water to the irrigation system. It is located within the pump-out zone of the tank.

POWER

The power should be left on at all times. Even if you are going on holidays or vacating the premises. If you encounter a blackout or you have to switch the power off for a short period of time, always check the blower is running again when the power is restored.

If the blower does not re-start, switch the power off again for 10 minutes before turning on again.

If the power is off for an extended period of time, say 8 hours, you should keep water usage to a minimum. You can still flush toilets and wash dishes but keep the shower short.

An alarm condition may occur after an extended blackout as the system may fill to high levels.
It should return to normal sometime after power is restored.
If the power is off for too long, the biological activity will die off and the system will need pump out.

9

DO'S AND DON'T'S

- Do advise us if the system won't be used for more than a month and always leave a contact name.
- Do use low / no-phosphorus or biodegradable products in their recommended quantities. Over use is expensive and unnecessary.
- Do endeavour to spread the washing loads over the week to obtain maximum efficiency.
- Do contact your accredited service agent or bioCycle head office if your warning device is activated after referring to trouble shooting manual.
- Do plant suitable flowers and shrubs in the irrigation / disposal area. (see page 13)
- Don't turn power supple off. If a power failure occurs, limit your water usage until power returns.
- Don't use or dispose of strong anti-bacterial products, insecticides, herbicides, pesticides or unused medicines into the system. These could damage the system or kill the bacteria that are required to purify the water and bad odours.
- Don't dispose of disposable nappies, condoms, tampons, sanitary napkins, cotton buds, any plastics, papers, cooking oils or fatty wastes into your system.
- Don't use any sanitizing agents other than those recommended by the manufacturer. Dangerous chemical reactions can occur.
- Don't allow unauthorized persons to tamper with your system.

TECHNIAL PROCESS DESCRIPTION

The bioCycle Wastewater Unit works on the combined principles of primary settling plus aerobic and secondary treatment. The treatment process is followed by nutrient removal through the irrigation system.

All the wastewater flows first into the septic zone where solids are settled out and the anaerobic microorganisms carry out the initial part of the purification process.
Once organic impurities have been absorbed within the aerobic culture of the microorganisms, the water passes to the secondary sedimentation zones.

Clear water flows over into the clarification zone and the occasional film of microorganisms are automatically transferred back to the primary zone to improve its performance. In the disinfection zone, mild controlled chlorinating is applied to complete the treatment process. The treated water is automatically pumped into disposal field.
bioCycle uses a special grade of chlorine based compounds so that when pumped onto the garden, any residual chlorine breaks down rapidly and allows for excellent plant growth.
Treated water quality is better than standards set by relevant health authorities on wastewater re-use for irrigation purposes.

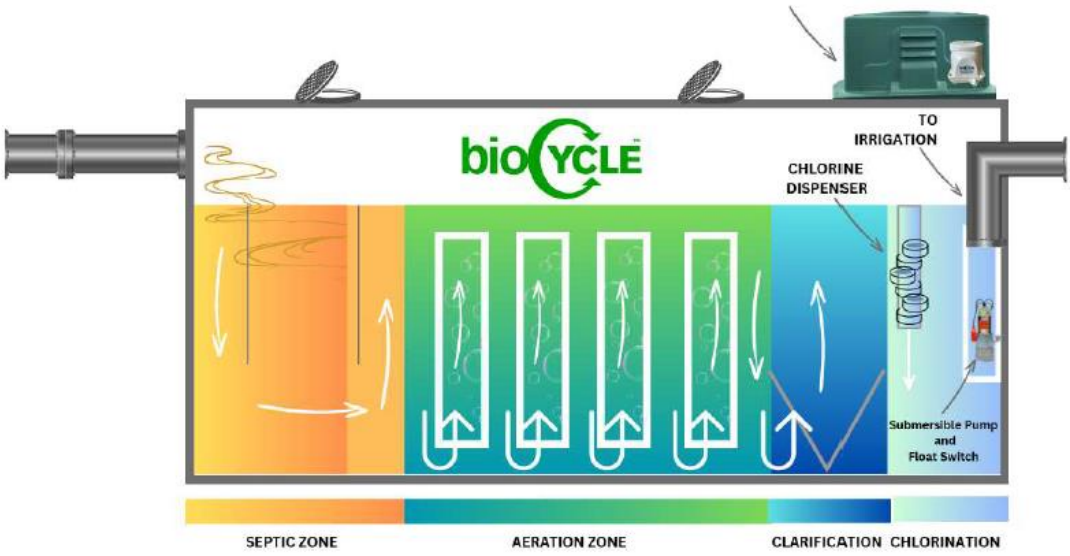
PRIMARY CHAMBER
Influent enters the chamber via the source whereby scum and solids capable of settling are separated from the raw influent. Primary treated effluent flows through a transfer port to the aeration tank. This tank will also act as a Storage Chamber for sludge returned via the Clarification Chamber.

AERATION CHAMBER
Water enters via the Primary Chamber. Air is introduced into this chamber via an air blower to create an environment for aerobic bacteria and other helpful organisms to consume the organic matter present. The aeration tank is designed in a manner to help prevent short circuiting of the wastewater to ensure extended aeration. Media is also present in the tank to support the growth of bacteria.

CLARIFICATION CHAMBER
The Clarification Chamber is essentially a quiescent zone where suspended particles/solids are settled out of the water. These particles are returned to either the septic or aeration chambers via a sludge return which aids in further biological reduction, de-nitrification and providing a constant food supply rich in microbes supporting the system through periods of limited flows.

DISINFECTION
Disinfection is achieved via low doses of Chlorine to kill off any remaining harmful organisms. This process is achieved through an automatic chlorinator with sufficient doses to last between 11 maintenance visits.

PUMP OUT



(Septic Tank)

Depending on the individual usage of your septic system, a slow but gradual accumulation of non-biodegradable matter may lead to the need for pump-out.

This applies to any septic tank and our service man will advise you if a pump out will be required.

bioCycle will be happy to advise and assist in this matter. Pump-out of the system is not a standard service procedure, and incurs an additional cost.

PLEASE NOTE
NEVER ALLOW PUMP OUT IN WET WEATHER OR SOON AFTER DUE TO THE RISK OF TANK FLOATATION.

12

IRRIGATION AREA

Your irrigation / disposal area will operate more efficiently and have less wet areas if covered with vegetation. The following is a list of some of the plants and shrubs that are suitable for planting in wet conditions. Consults your local nurseryman for the particular species that will suit your area and soil conditions.

PERENNIALS

- Agapanthas
- Canna
- Gazania
- Umbrella Grass
- Helleborus (Christmas rose)
- Hosta (Plantain Lilly)
- Shasta Daisy
- Marguerite Daisy
- Mazus

SHRUBS

- Aucuba
- Bauera
- Callistemon
- Bottlebrush
- Coprosma
- Cordyline
- Flax
- Strelitzia
- Photinia
- Viburnum

GROUND COVERS

- Grevillea
- Bougainvillea

GRASSES & CLIMBERS

- Kikuyu
- Buffalo
- Kennedya
- Hardenbergia

The treated effluent from domestic wastewater treatment systems should not be used for human consumption or to irrigate vegetables or fruit. The irrigation area should not be used for recreational purposes.

13

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WHICH CLEANING PRODUCTS

WASH POWDERS, LIQUIDS & SOFTENERS

Add Soft	Blue	Blue Gum	Snow Care	Castle
Cuddly	Dynamo Embassy	Fab	Fluffy	Omo
Gows	Launda	Love & Care Lux	More	Surf
Pree	Purelitle	Rinso	Softly	Ease Hurricane
Woolmix	Topwash	Cold Power	Parrys	Sunlight

DISHWASHING

- Bushland
- Finish
- Greenapple
- Kit Palmolive
- Sunlight Trix

SURFACE CLEANING

- Jif or similar cream cleansers / Spray & Wipe

TOILET CLEANING

- Hot water is an effective disinfectant and can be used with a little cream cleanser like JIF.
- Bleaches and antibacterial products are a NO NO!
- Avoid all products with bleach or ammonia.

NOTE: these are our recommendations and they are based on product knowledge at the time of writing.

- We do not intend to discredit any product or favour others, we are concerned primarily with the function of your unit.

If you accidently put the wrong products in your system, don't hesitate to call us.
We will advise on ways you can remedy the situation or suggest ways to recommence the bacterial activity.

14

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SERVICE & MAINTENANCE

It is a requirement of State and Local Government Authorities that The bioCycle domestic wastewater treatment system receive quarterly maintenance, by an authorised service contractor.

The owner or tenant of the property will be obliged to enter a service contract with bioCycle, your a gent or another authorised service company.

During the initial service period and subsequent service contract, our service technician will perform the following and the company will forward a written service report to the household and the local council authority.

- Sample water through the system for quality testing
- Measure residual chlorine & replenish chlorine supply
- Record water usage
- Inspect the septic tank
- Inspect the pump & blower operations
- Make any necessary adjustment, inspect the treatment
- tank including scum & sludge return, water & airflow
- Inspect operations and conditions if irrigation system
- Replenish the supply of disinfectant

15

Warranty

bioCYCLE™
LEADERS IN WASTEWATER TREATMENT

To certify that each and every bioCycle water treatment system is manufactured to strict guidelines and uses only quality components to ensure a product that is safe, reliable, effective and environmentally friendly.

Tanks 15 years from date of purchase

Pump and Electrics 2 years from date of purchase

Date of Purchase

Signed by

Stuart Day
Managing Director

bioCycle guarantees to repair or replace any part of the system requiring repair or replacement due to defective manufacture.

Such guarantee shall only apply to any defect of which notification is given within 24 months from the date of installation and under continuous service agreement with bioCycle or an authorised service agents.

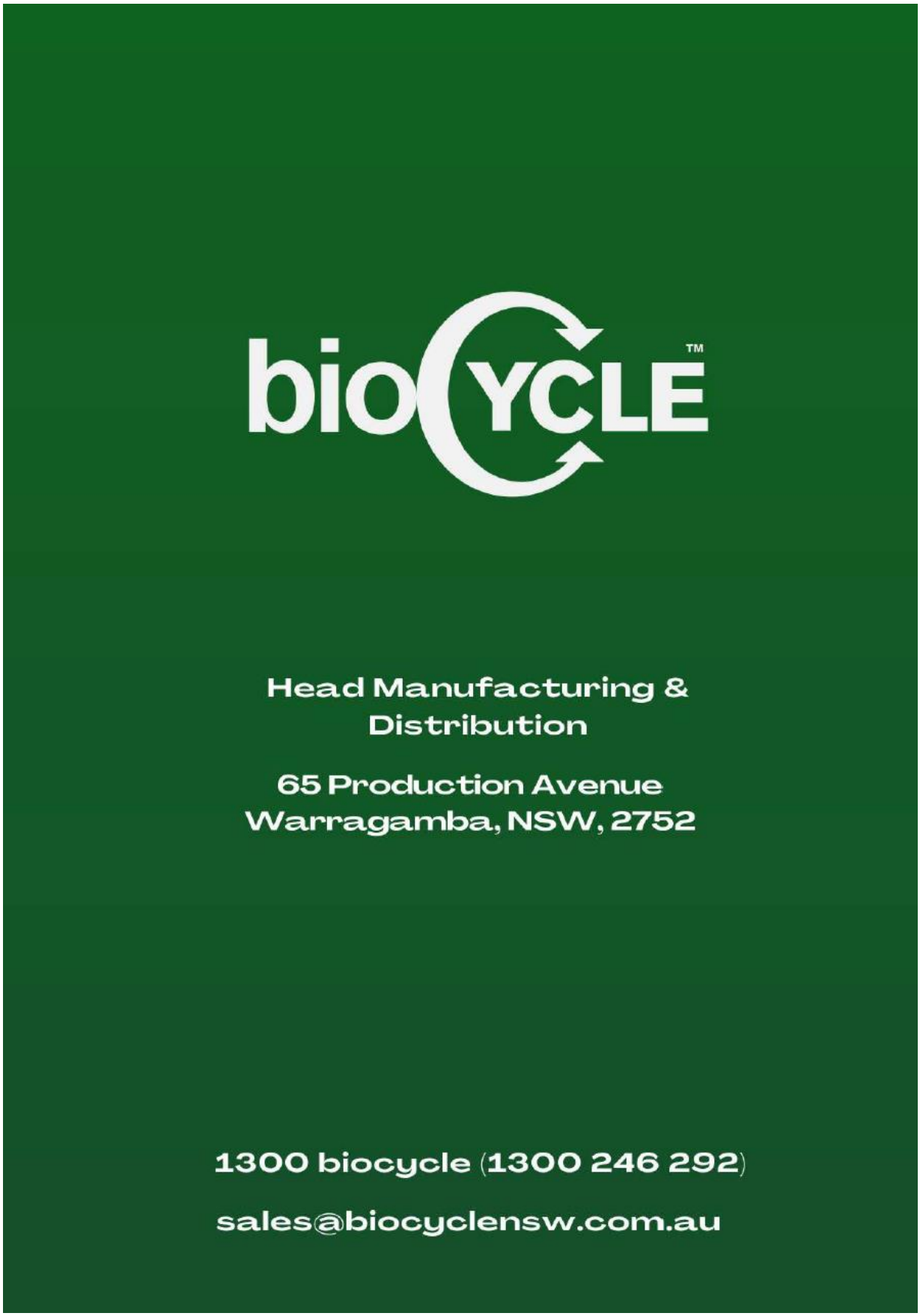
Concrete tanks are covered by the manufacturers warranty of Fifteen (15) years.

NOTE :

- Unauthorised work carried out on the bioCycle system will void this warranty.
- Freestanding above ground tanks are not covered by this warranty

bioCycle must be installed and operated in accordance with installation instructions.

NOTES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Attachment 3 – Bio Pro Twin Poly Schematic diagram