



User Manual

EnviroTas-AS

Advanced Secondary
Wastewater Treatment
System

wastewater
peace of mind

03 6234 7782
sales@envirotas.com.au



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NOTICE: The information in this manual is provided as a guide only and contents are subject to change without notice.



Foreword

Dear Homeowner,

Congratulations on your purchase of an EnviroTas Advanced Secondary Wastewater Treatment System! You have invested in a world-class Treatment System that will recycle all your household waste effluent into clean, odourless water suitable for irrigation on your lawns and garden. The EnviroTas-AS is fully manufactured here in Tasmania and is accredited as an Advanced Secondary Treatment System for plumbing installations in Tasmania (Certificate Number: DOC/24/7010).

It is important to note that only qualified personnel can install, commission, service and maintain your Wastewater Treatment System. Please ensure that any electrical supply and connection works are performed by a qualified electrician. It is also critical to note that your system requires servicing on a regular basis to meet the requirements of system accreditation and your plumbing permit. More information on system servicing is provided under Maintenance and Servicing on page 8.

This manual is designed to help you understand your system and support a long, trouble-free service life. Please read it carefully before operating the system and keep it in a safe place for future reference. Correct use of your system is essential, including being mindful of the products you use and what you allow to go down your drains. Pages 8 and 9 provide a helpful guide on how to keep your system healthy and operating at its full potential.

EnviroTas can offer you complete peace of mind for your wastewater treatment, from installation to maintenance & servicing, we are here to help! We would like to thank you sincerely for your support and we look forward to working with you. Please be free to call us at any time with any queries.

P: 03 6234 7782

E: sales@envirotas.com.au

From the Team at EnviroTas

wastewater peace of mind

03 6234 7782

sales@envirotas.com.au

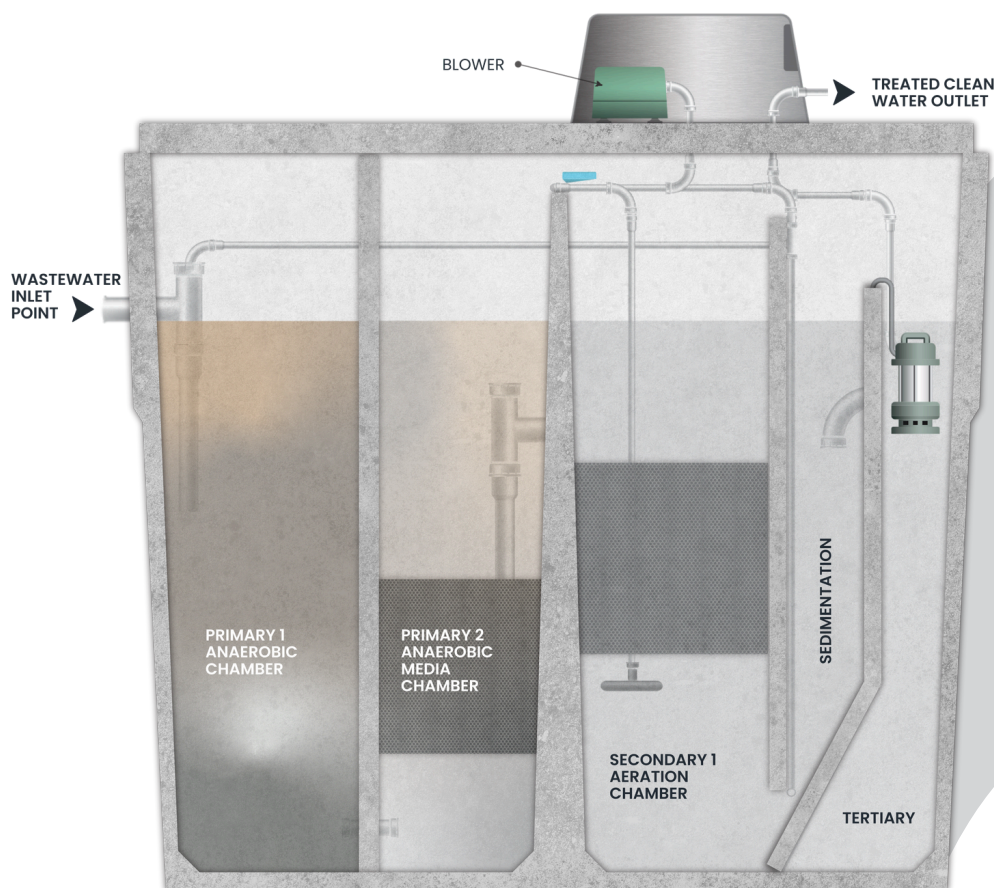
6 Hale Street Derwent Park Tasmania 7009

EnviroTas-AS Advanced Secondary Wastewater Treatment System

The EnviroTas-AS is an Advanced Secondary Wastewater Treatment System and one of the most advanced systems in the world. It is a state-of-the-art treatment plant that recycles all household waste effluent into clean, odourless water suitable for irrigating under lawns and onto the garden.

The system produces class-leading treated effluent quality thanks to a five-stage treatment process using anaerobic and aerobic bacteria to digest waste, and a nutrient reduction process that reduces total nitrogen and phosphorus outfalls.

The EnviroTas-AS incorporates a 5-stage treatment process which is illustrated below:



The Envirotas-AS Wastewater Treatment Process

Primary Treatment

The first stage of treatment is to separate the solids from the liquids. The solids, mainly toilet wastes, remain in the first chamber where a settling process takes place. The process is accelerated by the presence of anaerobic micro-organisms which multiply rapidly under ideal conditions, ensuring that the offensive faecal solids are turned into an inert waste. It is critical that the microbial action in the first tank is not hindered by the discharge of chemicals through household drainage fittings, e.g. chemical toilet cleaners and other anti-bacterial cleaning products.

Secondary Treatment

The subsequent treatment stages are mainly concerned with the aeration of the liquid wastes. Once more, microbes present in these liquids are used to assist in the aeration process. The micro-organisms are called aerobes and will thrive and multiply in the presence of oxygen. It is therefore important that a constant air supply is always being maintained. The air is supplied from an air pump installed in a green plastic enclosure on the cover slab.

Sedimentation

Following aeration, the liquid wastes will settle under quiescent conditions. Any solid particles, which are suspended in the aerated effluent, will settle out and are returned automatically via a sludge return to the first chamber. The clarified water is ready for irrigation.

Tertiary Treatment

If your system distributes the outfall above ground, then chlorination is required by law (AS 1546.3:2017). Due to the quality of the treated effluent, sub surface irrigation does not require chlorination. However, if required, a mild dose is used for preventing biofilm growth in the irrigation system.

Nutrient Reduction

The aerated, clarified, and disinfected water contains natural nutrients such as phosphates and nitrates. The Envirotas-AS reduces the nutrient concentration by up to 75%, to a level that is both safe and beneficial for the environment.

Owners Responsibility

Pre-Commissioning

Please ensure the following items are completed prior to commissioning:

- Your EnviroTas-AS is filled with a maximum of 5300 litres of potable water.
- The treated effluent dispersion/irrigation area is completed, council inspected and connected to the discharge pump out line from your EnviroTas-AS.
- The electrical power supply is installed and connected to your EnviroTas-AS.
- The sewage drains from your home are installed, connected to your EnviroTas-AS and council inspected.

Once these items are complete, an EnviroTas technician will attend your site and commission your EnviroTas-AS. A commissioning certificate will be provided and submitted to your local council.

Maintenance & Servicing Responsibilities

As the owner of your EnviroTas-AS, you are entirely responsible for its ongoing operation and maintenance.

It is a requirement of system accreditation and a condition of your plumbing permit that your Wastewater Treatment System is maintained and serviced regularly by an approved service provider. It is the system owner's responsibility to establish a service agreement, we can help and guide you through this process. EnviroTas is an approved service provider, and we will submit service agreement proposals for your consideration as part of our documentation. EnviroTas has a team of highly qualified wastewater technicians, and we currently service over 1400 properties all over Tasmania.

It is your responsibility to ensure that free access is always available to your Wastewater Treatment System for maintenance purposes. It is also your responsibility to ensure that the treated effluent dispersion area is suitably maintained.

Please note that the existence of a service contract does not transfer the responsibility from the owner to the supplier or its agents. EnviroTas cannot accept responsibility for warranty or operation if the system is not serviced and maintained continuously after commissioning.

Operation

Once your household sewer drainage has been connected correctly to your EnviroTas-AS, it can be used for its intended purpose immediately; provided your garden area has been landscaped to the satisfaction of and signed off by your local Council. The landscaping requirements are very essential as you cannot irrigate on barren dirt.

The entire operation of your EnviroTas-AS is automatic. Please do not make any adjustments to the air supply or pumping equipment. Should you require further information on the operation of the system, please contact the team at EnviroTas on 02 6234 7782.

Legal Requirements

In the best interests of both the homeowner and the general public, certain requirements are imposed by the regulating bodies regarding the installation of wastewater treatment systems.

The following points are provided as a guide only, please double check and confirm with your local regulating body for further information.

- Your EnviroTas-AS is to be installed in the approximate position indicated in the plan.
- Your EnviroTas-AS may not be used until the site has been inspected and Council considers that the effluent and sullage can be completely disposed of on the site without nuisance or likely danger to health and conforms with permit conditions.
- No fruit or salad vegetable growing on the property shall be irrigated with the treated effluent from your EnviroTas-AS.
- There shall be no irrigated water run-off from the allotment to the adjoining properties, public places, or reserves.
- An owner's manual is to be provided with the unit.
- A detailed service report is to be provided upon completion of each service. The date of each service shall be entered on the record sheet. A copy of this report is to be provided to the owner and the regulating authority, and also must be kept on file by the service provider.
- The owner shall enter into a service contract with the manufacturer, distributor or their agents or a service provider approved by the local regulating authority.
- The service contractor shall adjust each unit, its ventilation and irrigation system, when directed to do so by the Department of Health, or local regulating authority.
- The yard or garden areas of the allotment should be turfed and/or landscaped to the satisfaction of the local regulating authority and the Department of Health before the system is used for irrigation purposes.

Detailed conditions of installation are stated on the approval (Plumbing Permit) issued by the regulating body. Please read them carefully and ask for advice should it be necessary.

IMPORTANT NOTE

If you should ever sell your property, please advise us so we can transfer the Service Contract & billing to the new property owners.

Generic Irrigation Area Requirements

It is a Health Authority requirement that: There shall be no irrigated water run-off from your allotment to adjoining properties, public places, or reserves.

You are not permitted to water the council footpaths and care should be taken not to allow any run-off onto your neighbour's land. During maintenance inspections by the maintenance technician a report will be forwarded to the local council on the condition of the irrigation area.

To ensure that the wastewater remains on the site and does not cause environmental harm or a nuisance, the table below is a generic guide to setback distances. Please note this information is a general guide only, you must refer to your local governing body for specific requirements in your area.

Sensitive feature	Setback distance for wastewater irrigation areas (metres)			
	Prohibited	Discretionary	Permitted	Comments
Surface water including a watercourse carrying water for part or all of the year for most years, lake or marine water	<20	20 – 50	>50	The measurement shall be taken from the high water mark or the top of an embankment or cliff if directly adjacent to a waterway.
Property boundaries	<2 (upslope and side slope)	2 – 3	>3	If the natural ground level, measured at the boundary, is at a lower elevation than the natural ground level where the irrigation is located, the boundary shall be deemed to be down slope (Note1)
	<5 (down slope)	5 – 50	>50	
Buildings – sprinkler systems	<1 Where the plume of the sprinklers land (Note 2)	1 – 5 Where the plume of the sprinklers land (Note 2)	>5	
Buildings – drip systems	<0.5 (Note 2)	0.5 – 5 (See 2)	>5	
Swimming pools - (Including surrounding paved areas)				
Level sites	<3	3 – 5	<5	
Down slope (See Note 1)	<3	3 – 5	<5	
Upslope	<6	6 – 8	<8	

Note 1: The down slope is intended to represent the direction of the wastewater flow across or through the soil after being discharged in the irrigation area.

Note 2: This must be determined by a suitably qualified Geotechnical engineer that is certifying the wastewater design.

Maintenance & Servicing

Scheduled Servicing

It is a requirement of system accreditation and a condition of your plumbing permit that your Wastewater Treatment System is maintained and serviced regularly by an approved service provider. As the system owner, it is your responsibility to establish a service agreement, however we can help and guide you through this process. Please note that failure to have regular stipulated servicing carried out could result in a breach of public health legislation and subsequent legal proceedings.

EnviroTas is an approved service provider, and we will submit a service agreement proposal for your consideration as part of our documentation. EnviroTas has a team of highly qualified wastewater technicians, and we currently service over 1600 properties all over Tasmania.

Our technicians will carry out a comprehensive service that will ensure your system is operating effectively and within the standards set by regulatory authorities, including:

- Sight-check overall system health and performance.
- Check condition of all system pipework.
- Check system odour levels.
- Check sludge levels in each treatment chamber.
- Check performance of aeration diffusers and adjust as required.
- Test/check operation of air blower, clean air filter.
- Test/check operation of discharge submersible pump.
- Replace spent chlorine tablets if required.
- Measure/record dissolved oxygen levels.
- Measure/record pH.
- Clean irrigation filter.
- Check condition and performance of irrigation dispersion area.

Our specialist wastewater technician will record all information on a service certificate. You will receive a copy of this certificate for your records, and we will also lodge this certificate with your local council.

An EnviroTas-AS with below ground dispersion requires only 2 services per annum. An EnviroTas-AS with above ground irrigation will require 4 services per annum, this is a legal requirement as defined under AS 1546.3:2017.

Septic Tank/Compartment Pumpout (Desludge)

Depending on individual household usage, it will be necessary to periodically remove the solids from the EnviroTas-AS tank. This service must be carried out by a person or organisation approved by the Health Department. Desludging is required every 5 years by accreditation. Your EnviroTas specialist wastewater technician will advise you when this is necessary for your system and will provide you with a written quotation.

Keeping Your System Healthy

To ensure your EnviroTas-AS is operating effectively and within the standards set by regulatory bodies, it is necessary to avoid certain products entering the system.

Your treatment system relies on bacteria for treatment, so any product used to kill bacteria is detrimental to system efficiency, can cause bad odours and damage the workings of the system. The following tips are helpful in ensuring your EnviroTas-AS operates effectively and trouble-free:

- Use cleaning products that are bio-degradable and low phosphorus.
- Don't allow the following items down any drain connected to your treatment system:
 - Dyes or colourings.
 - Strong caustic, alkalis, oils, acids, bleaches, disinfectants, or chemical detergents.
 - Bio-degradable detergents that contain disinfectants (e.g. chlorine bleach), benzene or phosphates. Benzene converts to carbolic acid which is a strong disinfectant.
 - Antibiotics.
 - Newspapers, paper towels, sanitary items, wipes (even 'flushable' wipes) etc.
- Be aware most products advertised as clean-green and septic-friendly are often based on natural oils (eg Eucalyptus/Tea Tree) and these can decrease the effectiveness of your system.
- If possible, spread your washing loads over a week, e.g. 1 or 2 loads per day.
- Adhere to recommended dosages of cleaning and wash products.
- Don't exceed the maximum design load or subject the system to hydraulic shock loads (use of washing machines, shower/emptying of baths at the same time).
- Don't switch off power to your system.
- If the alarm is activated, eliminate the problem as soon as possible.
- Avoid the use of garbage disposal units in sinks.
- Avoid pouring quantities of oil/fats, alcohol, dairy products or fruit juice into the drains to the system.

If you need to use any products not permitted to enter your EnviroTas-AS, it is best to do this in a bucket and discard the contents appropriately after use.



Product Use Guide

The washing machine and dishwasher are generally the biggest users of water in a house, so you need to ensure you are using the correct products for these washes. It is difficult to specifically label which washing and cleaning products will be safe for Wastewater Treatment System systems as the product ingredients are continually evolving and changing.

As a rule of thumb, liquid products are more likely to be safe for your system than powder or tablet form. Avoid anything antibacterial and look for products that are phosphate-free or low-phosphate. Most products marked biodegradable/green etc. are safe for use in your EnviroTas-AS, however some plant-based cleaners are powerful antibiotics and will cause your system not to work effectively.

Moderation is key with all cleaning products. Your EnviroTas-AS will cope with a small amount of incorrect products but to keep everything working as required please follow our suggestions. Your EnviroTas maintenance technician will advise if there are any incompatible products affecting the operation and biological condition of your system.

Washing Powders, Liquids and Softeners

Avoid stain removal and eucalyptus. Look for low phosphorus, low sodium and low sulphur products. Incompatible soakers can be used in a bucket and then disposed of appropriately when finished.

Dishwashing

Avoid dishwashing liquids that promote being antibacterial, go for products that are non-toxic, non-chlorine based and biodegradable.

Surface, Bathroom, & Floor Cleaners

Look for environmentally friendly and biodegradable products.

Most cream cleaners are suitable. Toilet fresheners are not recommended. Avoid any antibacterial, bleach or ammonia-based cleaners. Use hot water and detergents on floors. Alternative non-product cleaners are recommended such as Enjo, Norwex etc. Koh products are known to work very well with AWTS.

Personal/Pet Hygiene

Anything you can use on the human body is generally safe for your system in small doses (except strong antibacterial handwash in excessive quantities). Take care that no pet wash runoff, including flea products etc, drains into your system.

Landscaping Around EnviroTas-AS & Irrigation

Water Catchment

Take care not to create a water catchment area around the EnviroTas-AS as this can cause fusion of your air pump during periods of heavy rain. Avoid this problem by creating channels to take rainwater away from the vicinity of your Wastewater Treatment System.

Plant List

This list is only intended as a guide and local knowledge should be sought regarding your local area. This is a list of Tasmanian natives that generally tolerate wet soils and extra nutrients. Thanks and credits to Plants of Tasmania Nursery at Ridgeway for this compilation.

Trees	Height
Swamp Paper-Bark	4-6m
Woolly Tea-tree	5m
Cape Pillar She Oak	+/-5m
Cheese-wood	5m

Small Shrubs & Tufties	Height
Tassal Cordrush	1.2m
Mountain Cordrush	.5m
Tassel Sedge	1m
Lime Bottle Brush	2m
Slender Honey Myrtle	2m
Tasman Flax Lily	.6m
Button Grass	.8m

Shrubs	Height
Rices Wattle	3-5m
Yellow Bottlebrush	2-5m
South Esk Pine	3m
Shiny Tea Tree	2m
River Tea Tree	2.5m
Common Tea Tree	2m
Yellow Paperbark	3m
Swamp Melaleuca	2-3m
Scented Paperbark	2-3m

Warranty

EnviroTas-AS and Components

Structure	Warranty	Service Life
Concrete Tank	15 years	20 years
Internal Baffles (Concrete)	15 years	20 years
Concrete Top Lid	15 years	20 years
Concrete Access Covers	15 years	20 years
Fittings	Warranty	Service Life
Pipework (PVC etc)	15 years	20 years
Fixings (Stainless etc)	15 years	20 years
Filter Media	15 years	20 years
Electrical Components	Warranty	Service Life
Control Box	1 year	5 years
Alarm Panel	1 year	5 years
Irrigation Pump	2 years	3 years
Air Pump	1 year	3 years
Float Switch	1 year	3 years
Distribution Bed	Warranty	Service Life
Irrigation area	2 years	7 years
Irrigation components	1 year	5 years

Please note that warranty is conditional upon an EnviroTas maintenance technician servicing the system continuously after commissioning. Owners who tamper with the system or its components run the risk of voiding their warranty while incurring additional costs associated with restoring the system to its correct operational procedure.

All mechanical devices have an expected service life of approximately 3 years however this does vary between brands used. Electrical components such as alarm panels have an estimated service life of 5 years. Service life is the time for mechanical and electrical parts to operate before a breakdown/failure can be reasonably expected.

No warranty is given for the irrigation system, components used, and all supply/discharge lines where the irrigation system has been installed by others.

EnviroTas reserves the right to decline any warranty claim where the Wastewater Treatment System itself has been installed by others.

Troubleshooting, General Maintenance and FAQ

Plumbing Problems – Household fittings not draining away.

Please check the inlet to your Wastewater Treatment System for blockages. Usually, the line can be cleared at this inlet point by inserting a rod down the inlet pipe. If there is no blockage at the inlet, there is likely a blockage in your sewage drainage pipework.

Action: This should be referred to your local plumber for corrective measures.

Plumbing Problems – Odour in the house.

Probable cause:

- The loss of a water seal in fittings, allowing gases to escape.
- An incorrectly constructed Educt Vent. These should be constructed to ensure the proper dispersal of gaseous by-products prevalent in all forms of sewage treatment. The vent should be positioned at least 600mm above the highest point in the house so that prevailing winds will carry away such gases.

Action: Both causes should be referred to your local plumber for corrective measures

Tripping of a circuit breaker in fuse/meter box.

Probable cause:

- Irrigation pump failure.
- Air blower failure.
- Power supply damage/failure.

Action: Press mute button on your alarm panel and call an EnviroTas technician to resolve the issue.

Irrigation does not appear to be working – High Water Alarm.

Probable cause:

- Power switched off.
- Blocked irrigation filter.
- Irrigation pipework leak, break, kink, or blockage.
- Blocked dripper or sprinkler heads.
- Irrigation pump failure.

Action: Check power to your system is switched on. Check irrigation lines and filters for any signs of blockages, kinks, breaks, splits in pipe, poorly fitting connections, or obvious signs of leakage. Check irrigation area to ensure that drippers/sprinklers are functioning normally. Clean and repair as required. If the problem cannot be easily resolved, please call EnviroTas.

Persistent odour.

Probable cause:

- Air blower failure – (indicated by ‘low air’ alarm).
- Chemical imbalance.
- Excessive chemicals and/or disinfectants.
- Excessive water usage.
- Vent blockage.

Action: if low air alarm is on, press mute button on your alarm panel and call envirotas to resolve. If low air alarm is off, check electrical box to confirm that air blower is running. If unable to hear blower operating, call envirotas to resolve.

Check chemical usage for system compatibility (please refer to the product use guide on page 10).

Contact envirotas for assistance if unable to identify incompatible chemicals.

If suspected blocked vent call envirotas to resolve. Please note all plumbing requirements must be carried out by a licensed plumber.

Circuit breaker reset.

A power surge, power cut or voltage drop may trip the circuit breaker and trigger the warning system of your envirotas-as. This is characteristic to protect the equipment within the system. If the alarm does not clear itself within 12 hours, it may be necessary to reset the tripped circuit breaker.

To do this, open your switchboard and look for the circuit breaker marked ‘envirotas’ or similar. If it is in the ‘off’ position, toggle the switch to the ‘on’ position. The blower will immediately re-start and the system will function normally. The alarm may take up to 12 hours to clear.

If the circuit breaker switch will not stay in the ‘on’ position, please contact envirotas.

Running costs/electricity consumption.

The average daily running cost of your envirotas-as is very low. The annual usage of electricity for the system is similar to that of an average household refrigerator; however, you can use the following as a guide:

Air blower (p/day)

60 watts x 24 hours = 1.44kw usage

1.44kw x \$0.25* per kw = \$0.36 p/day approx.

Submersible pump (p/day)

400 watts x 1.5 hours** per day = 0.6kw usage

0.6kw x \$0.25* per kw = \$0.15 p/day approx.

*the cost/kw tariff noted is approximate only. Please refer to your electricity supplier for the correct tariff before calculating your daily running costs.

**the operating time of 1.5 hours is approximate only and is entirely dependent upon the hydraulic load on the system.



Envirotas Group Pty Ltd

6 Hale Street Derwent Park TAS

03 6234 7782

sales@envirotas.com.au

www.envirotas.com.au

ABN 13 669 303 235

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