



Installing an Aerobic Treatment Unit (ATU)

Aerobic Treatment Units (ATU's) are an alternative to conventional septic tanks and provide an improved quality of onsite effluent treatment. They normally consist of a treatment tank and irrigation area.

If you intend to install an ATU to treat and dispose of wastewater you will need to apply to the Shire by completing an "Application to Construct or Install an Apparatus for the Treatment of Sewage".

As the units are an onsite effluent disposal system they are not accepted as an alternative to sewer if it available to the property.

Application Process

Depending on the volume of waste water produced, approval to install an ATU should be sought from either:

- The Shire of Exmouth if the development is a single dwelling or building that produces no more than 540 litres of wastewater per day.
- The Executive Director of Public Health if the development is more than a single dwelling or a building that produces more than 540 litres of wastewater per day.

In addition to completing the application form and submitting the scheduled fees, the following details must also be provided:

- ☐Type of system to be installed;
- ☐Manufacturer's name;
- ☐Model number;
- ☐Capacity;

A detailed site layout plan (in duplicate or triplicate as the case requires) drawn to a scale of 1:100 showing:

- block dimensions,
- contours indicating natural ground fall, wells, bores, dams, watercourses and depth to groundwater,
- proposed location of the building and all other structures including sheds, swimming pools and paving,
- details of any site modifications e.g. cutting and filling,
- details and location of any diversion trenches to collect surface or migrating subsurface water,
- details and location of roof stormwater disposal,
- proposed location of the ATU and surface irrigation disposal area, and
- distances between the components of the unit and boundaries, buildings, other septic tank/ATU, and other structures on the boundary alignment.
- details of the treatment disposal system including:
 - position of irrigation lines,
 - information as to the location of irrigation discharge points,
 - method of construction of surface irrigation disposal area bed, including the materials to be used,
 - number and location of plants or shrubs in the irrigation area. (see attached for a list of suitable plants and shrubs), and
 - where a split irrigation system is used; details of mechanisms to ensure an even discharge to each area and to prevent overloading of individual areas.



- a detailed house layout plan drawn to a scale of 1:100, showing reference to plumbing
- details as required by the Regulations.

Components

Aerobic Treatment Unit:

The ATU must be a type that is approved by the Department of Health. All manufacturers are required to have their system approved by the Department of Health prior to providing them for sale. It is recommended that you ask your manufacturer/supplier to provide proof of their product approval.

Irrigation:

The treated effluent from an ATU may be used to surface irrigate garden areas but can only be used on landscaped areas. It is not approved for any use in vegetable gardens.

Surface Spray Irrigation must comply with the following requirements:

- All pipework and fittings shall be polyethylene complying with AS2698, "Plastics pipes and fittings for irrigation and rural applications"(see your supplier for information);
- UPVC pipes, UPVP fittings and garden hoses shall not be used;
- Pipework laterals shall be buried to a depth of at least 150 mm and the irrigation system shall be permanently fixed;
- Irrigation pipes are required to be fixed and buried at least 150 mm below the surface;
- The spray heads shall be suitable for use with reclaimed effluent. The spray plume shall not have a diameter exceeding 3m or a plume height exceeding 600mm above the finished surface level of the irrigation disposal area;
- A minimum of 150 m² is required for surface irrigation and the irrigation area shall not be divided into more than two separate areas;
- The disposal area shall maintain at least 300 mm of permeable soil above an underlying limiting layer eg rock or hard pan;
- The disposal area shall be maintained so that its entire surface area has 100 mm of friable soil and a 50mm top cover of mulching material (pine bark etc);
- The planting of any form of food crop/fruit trees etc is not permitted within the irrigation area;
- The disposal area is not to be located on land prone to waterlogging or subject to floodwater inundation;
- Except for maintenance purposes, pedestrian traffic should be excluded from the surface irrigation disposal area;
- The surface irrigation disposal area must have at least two warning signs clearly positioned to inform the occupants of the premises that reclaimed effluent is used for irrigation. These signs must be on a white background with RED lettering of at least 20 mm in height and worded as follows:-

WARNING – RECLAIMED EFFLUENT NOT SUITABLE FOR HUMAN CONTACT/CONSUMPTION

- The reclaimed effluent must be evenly distributed over the entire disposal area without spray drift, pooling and/or run-off from the area.
- All storm or surface water must be diverted away from the surface irrigation system disposal area.

Dripper Irrigation

Disposal of effluent from an ATU serving a single dwelling is permitted by a dripper irrigation disposal system which complies with the criteria set out below and subject to any conditions imposed in the manufacturer's approval of the dripper system. A dripper irrigation disposal system shall either substrata or subsurface;

- A sub-strata dripper system is where the system is placed on top of the ground surface and covered with a minimum of 100mm of approved material (e.g. bark, woodchip) placed over the irrigation pipe work.
- A sub-surface dripper system is where the system is buried a minimum of 150mm below the ground surface.

The disposal area requirements for sub-strata or sub-surface dripper irrigation systems shall comply with the following:

Bedrooms	m2
Sandy Soils	
1-2	60
3	80
4	90
5	100
All other Soils	
Up to 5	150

- The disposal area shall be maintained as a permanent dedicated area for the purposes of effluent disposal. In addition the area set aside for a sub-strata system be a passive area (i.e. not subject to human traffic).
- No part of the disposal area shall be altered by any person without the prior approval of the local government.
- The sub-strata dripper irrigation areas shall be planted out prior to use with suitable plants or shrubs.
- No part of a sub-strata or sub-surface dripper irrigation system shall be paved or built over. The disposal area must be maintained in such a manner to provide access for maintenance.
- The surface irrigation disposal area must have at least two warning signs clearly positioned to inform the occupants of the premises that reclaimed effluent is used for irrigation. These signs must be on a white background with RED lettering of at least 20 mm in height and worded as follows:-

WARNING – RECLAIMED EFFLUENT NOT SUITABLE FOR HUMAN CONTACT/CONSUMPTION

- All storm or surface water must be diverted away from the disposal area, and stormwater disposal systems must be excluded from the area.
- The growing of vegetables on any part of a disposal area is not permitted.
- Cover material over sub-strata irrigation area shall be maintained at the required thickness (100mm) at all times.
- Effluent disposed by dripper irrigation systems shall be chlorinated to prevent organic growth in the distribution pipework and fittings.

Note: A dripper irrigation system shall only be installed by the manufacturer who shall provide written certification to the local government prior to the local government issuing a certificate to use the apparatus, stating the system complies with and is installed in accordance with the approval granted to the manufacturer under (see attached from 'Technical Information').

Landscaping

The disposal area shall be landscaped to prevent pooling of effluent or runoff from the area.

- An adequate number of plants, suitable for the transpiration of reclaimed effluent and salt and

nutrient tolerant (see attached list) shall be planted over the disposal area.

- All landscaping and the provision of friable soil, mulching material and plants shall be completed when the ATU is commissioned for use or within 30 days of occupancy of the premises.

Set Back Distances

To protect buildings, structures and adjoining properties, a range of minimum set back distances are necessary:

Setbacks				
Item	Spray Irrigation (m)	Dripper (m)		ATU (m)
		Substrata Drippers	Sub Surface Drippers	
Closed fence boundaries min height 1.2m	As determined by LG	0.5	0.5	1.2
Open boundaries	1.8	0.5	0.5	1.2
Buildings	1.8-3*	0.5	0.5	1.2
Surface Irrigation Disposal Area	na	na	na	1.8
Dripper Irrigation Area	na	na	na	0.5
Water Bodies (incl bores) intended for human or animal consumption or water catchment areas	30	30	30	6
Paths, driveways and carports	1.8	0.5	0.5	1.2
Swimming Pools	3-6*	2	0.5	1.2
Water Table	0.5 -1.8**	0.5	0.5	na
Subsoil/open drain	na	3	3	na

* Dependant on slope

** Dependant on soil type

Maintenance

The owner of a premises where an ATU is installed must ensure that at all times satisfactory arrangements are in place for the maintenance of the ATU by an authorised person as required by Regulation 42A.(1) of the Regulations.

Maintenance of an ATU shall be carried out at intervals of not more than 3 months between each maintenance service.

The 3 monthly maintenance schedule should include tests and checks of the following:

- i. sludge buildup;
- ii. turbidity;
- iii. chlorination equipment; free chlorine residual value;
- iv. air supply to aeration tank; or flow distribution and slimes growth on filter media; or growth on biodiscs;
- v. noise levels from electric motors, pumps, and aerator;
- vi. alarms - air supply, water level, chlorine tablet supply;
- vii. effluent filter (cartridge in effluent pipeline);
- viii. irrigation lines and spray jets;
- ix. disposal area - plant condition, evidence of surface water.

A maintenance report is required to be prepared in duplicate after each inspection.
The duplicate being retained by the authorised person, and the original forwarded to the local government.

Notice of Completion

Once installation has been completed please notify the Shire of Exmouth in order to arrange an inspection.

Please note: It is an offence to use a system for disposing sewage unless the local authority has given a permit to use the system.

For more information on Aerobic Treatment Units (ATU's) please contact the Shire's Environmental Health Department on (08) 9949 3000.

26 March 2013