



ON-SITE SEWAGE MANAGEMENT SYSTEMS ('OSMS') APPROVAL TO OPERATE ('ATO') **CONDITIONS** and MINIMUM MAINTENANCE REQUIREMENTS

Failure to regularly maintain your OSMS may result in system failure with consequent human and environmental health impacts and legal liabilities, not to mention expensive repairs and or replacement. These conditions will help minimise the likelihood of a failure and maximise the life span of an asset that can be expensive to replace.

General Conditions That Apply To All On-site Sewage Management Systems (OSMS)

1. Regularly check for OSMS failures which are generally indicated by:
 - (a) Plumbing fixtures and fittings not draining properly indicate a damaged or blocked pipe or possible septic tank failure.
 - (b) Surcharge of effluent at ground level either around the tank, or down the slope at the land application area/s.
 - (c) Foul odour emanating from the tank or land application area/s.
2. Contact your OSMS technician as soon as you suspect a failure or when alarms (where fitted) are activated. Cease all discharges of household wastewater to the OSMS until it is repaired.
3. In the event of OSMS failure always cordon off affected areas so that people, pets and livestock do not come into contact with untreated or partially treated sewage.
4. Minimise water usage in the building/s to reduce the load on the system, via for example dual flush toilets, low flow shower roses, front load washing machines.
5. Minimise the amount of grease, oils, vegetable matter and grit entering the system via sink strainers and putting grease and oil in the garbage or compost. This will help reduce the frequency of septic tank pump outs required.
6. Use only septic safe cleaners and detergents around the home. Chemicals such as disinfectants and bleaches can kill the bacteria in your system leading to foul odours and potential system failure. Do not dispose of other waste, chemicals or medicines down the sinks and drains, for the same reasons.
7. Stormwater, either via connecting pipes or overland flow, should not be allowed to enter tanks and reed beds. Stormwater should be directed away from your Land Application Area/s.
8. Protect all components of your OSMS, including the connecting pipes, from damage by vehicles, hooved animals (cows, goats, pigs, horse etc), tree roots etc.
9. The OSMS shall be operated in accordance with the manufacturer's recommendation.
10. Use protective clothing and gloves when handling any components associated with waste water management. Always wash yourself well using warm water and soap after coming into contact with any components, sewage, or composted sewage when you are checking your OSMS. Never enter treatment tanks, gases and bacteria can be harmful to your health.
11. Provide copies of pump out receipts, service and repair reports to Council and keep copies. Having a good record of service, repair and pump put history will add value to your asset when it is time to sell.

Recommendation:

If you are unaware of your OSMS service history it is wise to engage an OSMS technician to come out and provide a service report and advise if repairs or a pump out is required, or you can come into Council to examine the records for installation plans, design reports and service records where they exist from the previous owner or installer. An application form is sometimes required to access records, refer: <http://www.byron.nsw.gov.au/faq/public-access-to-documents-and-files#t136n34960>

Important Note:

An application under section 68 of the Local Government Act is required before new systems are installed or replacing existing systems. The application process will enable Council to ensure the system adequately assesses the risks to human health and the environment, is appropriately sized to manage the load and meets Byron Shire and NSW Government guidelines.

Installing or upgrading an OSMS without Council approval is an offence that could lead to notices or penalties being issued and or works having to be redone. Contact Council, we are here to help you protect human health and the environment.



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PRIMARY TREATMENT

Septic Tanks, Grey Water Tanks, Aerated Tanks and Biological Filter Tanks.

These tanks are the primary (first) treatment component of an OSMS, they are designed primarily to remove solids, but some nutrients are also removed via the bacteria activity in the tank.

The water coming out of the septic tank is referred to as 'effluent' and is usually quite clear and relatively odourless if your tank is working properly. Beware however; the effluent is very high in bacteria and potentially viruses that have high potential for negative health impacts for humans, animals and the environment. Contact should be avoided at all times.

Effluent from the tank enters the next stage of treatment, see Secondary Treatment section.

Maintaining your Tank/s:

1. Check sludge and scum depth at least annually.
2. Regularly pump out your septic tank to avoid solids discharging to your Land Application Area which can lead to blockages that can be expensive to repair and replace. The pump out frequency will depend on the load, the number of people using the system and how well you keep solids (other than faecal matter) out of the system. Ask your OSMS technician or Council for advice.
3. Your tanks should have an outlet filter or baffle, check and clean regularly. If one is not present ask your plumber to install one to keep solids out of your Land Application Area.
4. As per manufacturer's instructions.
5. Treated grey water is NOT to be connected to handheld hose or spray for garden.

Aerated Wastewater Treatment System

The Aerated Wastewater Treatment System (AWTS), is a more complex septic tank that improves the quality of the effluent via bacterial nutrient removal, they sometimes include a Disinfection stage, (refer Disinfection section).

AWTS are reliant upon air injecting blowers or agitators to maintain bacterial activity and pumps to move the water around and eventually pump it too your Land Application Area.

Because the effluent is pumped from the tank via mechanical and electric components regular servicing is required (every three months), because if any components fail there is high potential that this style of system will overflow creating a human health and environmental hazard, potentially leading to expensive repairs to your tank and or your Land Application Area.

Maintaining Aerated Wastewater Treatment System:

1. Refer: General Conditions That Apply To All Systems section.
2. Arrange quarterly service reports via a qualified OSMS technician and provide copies of your service report to Council, (usually done by your OSMS technician but check).
3. Contact your OSMS technician as soon as any alarm is triggered.
4. The reports your OSMS technician provides at each service should include an assessment on the:
 - a) Pumps,
 - b) Air blower,
 - c) Alarm lights or beepers
 - d) Filters,
 - e) Sludge depth,
 - f) A sludge bulking test (not always required).
 - g) Effluent quality: colour, odour, acidity and dissolved oxygen level
 - h) Replenishment of the disinfectant (where applicable),
 - i) The Land Application Area (see relevant section)



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Biological Filter Systems

Biological Filters treat wastewater to a higher standard than Septic Tanks. Biological Filter Systems use air to assist bacteria, microbes, worms and beetles to break up organic material in wastewater. Typical systems use a single chamber and two pumps, one for effluent and one for air.

Wastewater passes through several layers of organisms on finely structured humus, coco peat and other media designed to accumulate microbes.

Maintaining your Biological Filter System:

1. Refer: General Conditions That Apply to All Systems.
2. Arrange quarterly service reports via qualified OSMS technician and provide copies of your service report to Council. A copy of the report is usually sent to Council by your OSMS technician, please check to ensure this is the case.

Dry Compost Toilets

Dry Composting Toilets use bacteria, microbes, worms and beetles to decompose human faeces mixed with wood shavings, lawn clippings and other organic matter into humus. Dry Composting Toilets collect and treat only toilet waste (blackwater) to a primary standard (a similar standard as septic tanks). Greywater from the bathroom, laundry and kitchen needs to be treated separately, either by a separate Greywater treatment system or by a septic tank or aerated wastewater treatment system.

Dry Composting Toilets collect urine and faeces in a sealed chamber beneath the toilet pedestal, where bacteria, microbes, worms and beetles decompose the mixture of human waste and extra organic matter. About three-quarters of the material is converted to carbon dioxide and water vapour. Air drawn through the compost pile removes these gases and assists the microorganisms to break down the material. The remaining compost moves slowly down a sloping floor by gravity as more material is added to the pile. It then moves under a dividing baffle into a humus chamber. After a period of time that varies with usage (from every 2-3 months to once a year) this material is suitable to remove. Excess liquids drain to a small absorption trench and / or may be treated with Greywater.

Maintaining your OSMS including Waterless Compost Toilet

1. Refer: General Conditions That Apply to All Systems.
2. Refer to relevant Primary Treatment Section (for Grey Water tank conditions).
3. The waste chute is to be cleaned when necessary.
4. Bulking material such as lawn clippings, peat moss, shredded leaves, paper, cardboard and other finely chopped vegetable matter should only be added through the toilet chute as recommended by the manufacturer, (not applicable to desiccating toilets).
5. The system shall not be used for the disposal of sanitary napkins, disposable nappies, non-compostable materials such as plastics or liquid household products (such as paints, oils, pesticides, chemicals, bleaches or medications).
6. The composted humus from a compost toilet shall be buried under clean friable soil in a level area not subject to erosion within the property boundaries. Burial should ensure that a minimum of 75mm coverage is maintained for a period not less than 3 months.
7. Composted material may contain potential disease producing agents (microbes and viruses) and as such shall not be disposed of directly in an area used for the production of root or vegetable crops for human consumption.



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8. Composted humus from a Compost Toilet shall only be used in an area used for production of root crops for human consumption where:
 - a. The composted humus removed from the humus closet has been placed in a separate lidded compost bin providing aeration for a period of not less than 3 months. No further addition or removal of composted humus must occur during this additional compost period; or
 - b. Humus treated under condition 8 has been allowed to season in the ground for a period of not less than 3 months before it is recovered and used.
9. The compost chamber must be connected to an underground trench of adequate capacity, regularly check to ensure that liquid is not accumulating within the compost chamber.
10. Refer to Land Application Areas: Trenches section.

SECONDARY TREATMENT: FURTHER NUTRIENT REMOVAL

Wetlands or Reed Beds

A Wetland or Reed Bed is essentially a large watertight vessel (usually concrete or plastic) that is filled with gravel and planted with water tolerant plants such as reeds and rushes. Effluent from the treatment tank passes through the root zone of the reeds where further solids and dissolved nutrients are removed. The water always remains below the gravel surface, thus excluding human exposure, mosquito breeding and unpleasant odours. Effluent from the Wetland is then discharged to your Land Application Area (see Land Application Areas section).

Maintaining your OSMS including wetland

1. Refer: General Conditions That Apply to All Systems section.
2. Refer to Primary Treatment section.
3. If the home remains empty for an extended period and there is no rain it may be necessary for a small amount of water to be allowed through your system to keep the wetland plants watered e.g. via a dripping tap.
4. Do not apply pesticides or herbicides in close proximity to the wetland. It is important that growing plants are healthy. If plants die, they need to be replaced.
5. Wetland plants and leaf litter will require routine pruning and removal.
6. Plants should not be allowed to block the inlet and outlet pipes or damage the container, check regularly.
7. Please wear protective clothing when undertaking maintenance and avoid maintenance when you feel unwell or have open wounds. Always wash with warm water and soap afterwards.
8. Check for Wetland failure, that are generally indicated by:
 - (a) Foul odours.
 - (b) plants dying or dead.
 - (c) Cracks or leaks in the wetland container.
 - (d) Water evident above the gravel or overflowing from the container.
9. Servicing: an annual report by a qualified OSMS technician. A copy of the report is usually sent to Council by your OSMS technician, please check to ensure this is the case

Intermittent Sand Filter

The term Intermittent Sand Filter is used to describe a variety of filter beds of sand or other granular materials. Sand Filters provide further solids and nutrient removal from septic tank effluent. They generally consist of an impervious excavation or structure filled with uniform washed sand that is placed over an underdrain system. The wastewater is dosed onto the surface of the sand through a distribution network and allowed to percolate through the sand and then pumped to the Land Application Area, sometimes via a disinfection system. The Sand Filter size has been specifically designed to treat the wastewater load for your system.



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Maintaining your OSMS including a Sand Filter

1. Refer: General Conditions That Apply to All Systems section.
2. Refer to Primary Treatment section.
3. Servicing: quarterly. A copy of the report is usually sent to Council by your OSMS technician, please check to ensure this is the case.
4. System failures are generally indicated by:
 - (a) The water level inside the sand filter rises above the normal operating level.
 - (b) A Surcharge of effluent from the sand filter.
 - (c) Foul odours emanating from the sand filter or land application area.
 - (d) The pipes leading away from the sand filter become blocked.
5. When the Sand Filter performance deteriorates to a point where the water quality is unsatisfactory (dirty or smelly), or where water cannot pass through the filter then repairs are necessary, contact your OSMS technician.

Disinfection

Some OSMS will require Disinfection because of either their proximity to sensitive receptors such as neighbours, waterways, high water tables, or because of the land application method, where there may be a higher likelihood of contact by humans or animals.

Disinfection is usually by way of chlorinating or exposure to ultra violet (UV) light. The disinfection process is after the treatment in the tank in the case of an AWTs and sometimes after the Sand Filter or Wetland. The disinfection process only works well when the rest of the system is working well as the effluent has to be clear and have minimal particles.

Maintaining your OSMS including Disinfection system:

1. Refer: General Conditions That Apply To All Systems section.
2. Refer to: relevant Primary Treatment section.
3. Refer to relevant Secondary Treatment section.
4. Servicing is normally done as part of servicing other system components.

PUMP WELL - PUMP TO IRRIGATION

Some systems will have a Pump Well after the Primary Treatment tank or the Wetland / Reed Bed or Sand Filter, The Pump Well pumps effluent to the Land Application Area.

The Pump Well pump and volume is designed relevant to the load on your system, with sufficient capacity and pump size to ensure that if the pump line is blocked or the pump has failed, that the wastewater will not immediately overflow. They usually have a warning alarm or light that indicates a failure and may also have a filter attached.

Maintaining your OSMS including Pump Well:

1. Refer: General Conditions That Apply To All Systems
2. Refer to: relevant Primary Treatment section.
3. Refer to relevant Secondary Treatment section.
4. Servicing: quarterly.



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LAND APPLICATION AREAS

Trenches

Trenches or 'absorption trench' are the land application methods associated with older style OSMS where effluent is usually gravity fed from a standard septic tank to the trench located nearby and down slope.

These systems are generally not approved for installation anymore as they rely on absorption of the water that may lead to the effluent affecting groundwater.

They are built below ground and can be filled with gravel and or consist of a durable self supporting arches resting on gravel. Trenches are usually relatively narrow and deep.

Maintaining your OSMS including trench:

1. Refer: General Conditions That Apply To All Systems section.
2. Refer to: relevant Primary Treatment section.
3. Refer to relevant Secondary Treatment section.
4. Maximise sun exposure, prune shading plants.
5. Regularly check for signs the system may be failing, indicated by
 - (a) Foul odours.
 - (b) Excessively wet areas or smelly surface water near your tank or Land Application Area.
 - (c) Lush growth of plants on, around and down slope of trench.
6. Contact your OSMS technician if failure is evident.

Evapotranspiration Beds

Evapotranspiration is the process that removes water from land covered by vegetation through evaporation (loss of water from soil or wet vegetation) and transpiration (loss of water from small openings in the leaves of plants and grasses). Evapotranspiration (ETA) beds reduce reliance on effluent absorption into the soil by maximising water loss through evaporation and transpiration thereby minimising the likelihood of impacts on groundwater and making the water and residual nutrients available to plants.

Effluent is distributed through the bed by a system of slotted pipes. Capillary action draws effluent up from a lower gravel bed through sand to supply the root zone of vegetation (usually grass) on top of the bed. They are wider and shallower than trenches.

There may be a splitter box at the beginning of your ETA beds that is designed to evenly disperse the effluent into each ETA bed.

The ETA beds have been designed specifically for the load that your system has i.e. the more bedrooms you have the larger the land application area needs to be.

Maintaining your OSMS including ETA beds:

1. Refer: General Conditions That Apply To All Systems section
2. Refer to: relevant Primary Treatment section.
3. Refer to relevant Secondary Treatment section.
4. Maintain 100% vegetation cover avoid planting large trees over the bed.
5. Maximise sun exposure, prune shading plants.
6. Whenever you have the ETA beds checked ask your OSMS technician for a written report and provide a copy to Council.
7. Regularly check for signs the system may be failing, indicated by
 - (a) Foul odours.
 - (b) Excessively wet areas or smelly surface water.
 - (c) Lush growth of plants down slope of ET beds trench.



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- (d) A diversion drain should be maintained to prevent 'water logging' of the ETA bed via stormwater run-on.
- (e) Roof waters and rain water tank overflows should be diverted away from the ETA area.
- (f) ETA beds may have inspection ports that allow the inspection of the bed to ensure they are getting wet but not waterlogged.

Subsurface Irrigation

Subsurface Irrigation uses a network of polyethylene pipes located just under the ground's surface to apply pumped effluent to the root zone of plants in your Land Application Areas. The Land Application Area may be divided into different fields via an indexing valve that changes the irrigation area each time it receives a surge from the pump.

Other components include flush valve/s so that the pipes can be periodically flushed if sediments build up inside and air release and or vacuum release valves that facilitate the even distribution of the effluent. Subsurface irrigation relies on a pump that may be part of your AWTS or a stand alone Pump Well (see previous sections).

Your Subsurface Irrigation area has been designed specifically for the load that your system has i.e. the more bedrooms you have the larger the land application area needs to be. It should not be altered without Council approval.

Maintaining your OSMS including Subsurface Irrigation:

1. Refer: General Conditions That Apply To All Systems section
2. Refer to: relevant Primary Treatment section.
3. Refer to relevant Secondary Treatment section.
4. Maintain 100% vegetation cover and avoid planting large trees in the area.
5. Maximise sun exposure, prune shading plants.
6. Divert roof waters, rain water tank overflows and surface flows away from the Land Application Area.
7. A quarterly service is required by a qualified OSMS technician, usually done as part of servicing other system components.
8. Ensure your OSMS technician checks the indexing, air release and flush valves regularly and that the system receives a flush periodically.
9. Regularly check for signs of system failure that, generally indicated by
 - (a) Effluent spraying on the surface of the land application area from a split or broken pipe.
 - (b) Alarm activation associated with failure of the pump connected to the sub-surface irrigation pipe work.
 - (c) Foul odours.
 - (d) Excessively wet areas or smelly surface water.
 - (e) Lush growth of plants down slope Subsurface Irrigation area.

Other Conditions and Information We Are Obligated to Provide Under Legislation

1. Any failure of the OSMS likely to cause a risk to public health or the natural environment should be reported to Council within seven days of the failure occurring.
2. The ATO is valid whilst renewals fees (paid via your rates notice) remain current.
3. Council reserves the right to revoke or modify an ATO, this may include reducing the duration of length of time that an approval is valid and/or placing additional management or monitoring conditions on the approval where a problem with a system is identified.



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4. A new approval to operate is required when:
 - a) The system is altered because of an upgrade.
 - b) New plumbing connections are made to the system e.g. an ensuite is added, a shower is or toilet is installed in the shed or the studio etc.
 - c) When the property changes hands.
5. Failure to have a current ATO is an offence under the Local Government Act 1993 and attracts penalties of \$330 (2014). Renewal is now made easier via the payment of the fee on your rates notice.
6. An ATO does not mean that the OSMS was approved to be installed, installed as approved or maintained as required; however Council can help you answer these questions too.
7. An ATO does not mean your OSMS is operating as designed and free of defects. For new owners we highly recommend that you engage an OSMS technician to verify the system is operating as designed and as required by these conditions.

Why Are These Conditions Imposed?

To minimise the likelihood that sewage and waste water management at your property will have adverse and potentially insidious affects on you, your family, visitors and tenants, neighbours, the wider community and the natural environment.

Poorly managed sewage has potential to:

- spread disease: the likelihood that humans and animal come into contact with sewage and waste water must always be minimised,
- contaminate ground and surface water that you or other people may be using,
- create foul odours affecting community amenity,
- attract rodents and undesirable insects that can also spread disease,
- have adverse effects on soils, that are an important component of on-site sewage management,
- have adverse effects on native vegetation.

Management of your system consistent with these requirements is also a legal requirement under the Local Government Act 1993 and associated regulations that also empower Local Government to:

- Enter and inspect properties, via prior written notice.
- Recover costs associated with inspections, notices and court actions.
- Charge an administration fee for service (your Approval to Operate fee).

Local Government also has authority under the Protection of the Environment Operations Act 1997 to

- Enter and inspect any premises at or from which an authorised officer reasonably suspects pollution has been, is being or is likely to be caused-at any time, without prior notice.
- Recover costs associated with inspections, notices and court actions.

Operating your system as required, keeping records and providing copies to Council will also ensure you

- Obtain the most out of an asset that is expensive to replace.
- Ensure you are in a good negotiating position when it comes time to sell.
- Will minimise the likelihood that Council will have to instigate any interventions via notices, penalties and or legal proceedings that can incur fees and charges.

Please keep a copy of this document in a place where you can readily find it.

If you ever have any questions or doubts about your OSMS feel free to contact us.

Council and the Community appreciate your commitment to the protection of human health and the environment for the benefit of all living things.