BAF 2

Eurotank Wastewater Treatment Plant

Owners Manual

Version EB 1.1 2026/27

Designed in Accordance with EN 12566-3, NSAI Sr66 , DoLGHE part H Building Regulations

Note: This manual is only a general installation guide. Installation methods and conditions will vary with each individual site. We take no responsibility for installation. Please ensure that the person installing your sewerage treatment systems is suitably qualified, experienced and insured. We recommend that the installation of every system is planned and supervised by an experienced engineer with professional indemnity insurance. If uncertain about any element of the installation please contact our office. Installation & Supervision service available on request.

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1.0 General Information

This manual provides an explanatory report on the installation, treatment and technical drawings in relation to the Eurotank BAF2 sewage treatment plant. It is important to read this manual and **Eurotank Installation Guide document** (available on request) in its entirety before installation and use, as this manual represents a general guide to the best practice for the installation of the sewage treatment plant. This manual should not be used for any other system.

The Eurotank BAF2 can cater for populations of 4-400 persons – but this manual relates to the packaged units. The instructions in this manual are of a general nature. Therefore, for each installation it is important to consult an appropriately trained or qualified person to ensure that this product is acceptable for your specific site conditions. This manual should be kept in possession of the owner for the lifetime of the product. Should the system be transferred to a new owner, it is important that this manual is also transferred to allow the new owner to become familiar with the operation and appropriate warnings.

1.1 System Components

The system comprises a 1 piece Concrete tank with three separate chambers. One chamber is half the tank and the other chambers are one quarter of the tank. The tank weigh approximately 6000kg. The primary chamber is empty, the aeration chambers contain media and diffusers, and the final clarifier chamber is empty, or contains a pump for a system with a pumped outlet. The control unit and air blower are located in the housing on the tank lid. Plastic 600mm diameter twinwall pipe sets are available for deep installations as risers.

2.0 Health and Safety

When installing and maintaining a wastewater treatment plant it is of vital importance to ensure that a high level of health and safety is adhered at all times. It is crucial that the following instructions are read and understood prior to installation by everyone involved in the installation of the unit.

- Every time you are conducting work or inspections on the unit follow all the information provided in this manual and any other applicable health and safety guidelines that apply.
- The personnel responsible for the installation of the unit must hold the appropriate qualifications for their work and follow the guidelines supplied with the equipment.
- All electrical work must be carried out by a suitably qualified, experienced and insured person.
- Take note at all times of the presence of water when installing the unit and when completing electrical work. Appropriate Personal Protective Equipment (PPE) must be in good condition, fit for purpose and worn at all times. E.g. safety footwear, high visibility vests, overalls, face visors and gloves. This will prevent contact of harmful micro-organisms contained in the sewage and sewage effluent.
- After working on the installation or maintenance of the unit remove potentially contaminated clothes, wash hands thoroughly and wash hands prior to eating or drinking, etc.
- Never enter a tank unless you hold the appropriate “Confined Space” training.
- Work such as de-sludging and carrying out maintenance is potentially dangerous therefore, should never be done alone.
- Use appropriate lifting equipment when required.
- Covers should not be left off or unattended and all covers should be locked or in a fenced off area.

SUMMARY: If you are not qualified, experienced or insured– do not work on the unit. Installation Service available on request.

3.0 Wastewater Treatment Process

The Eurotank BAF2 sewage treatment plant is designed to provide an efficient and effective method for treatment of wastewater. The process is a form of activated sludge treatment in which aeration, settlement and decanting. The tank is divided into three chambers for a high quality treatment process that treats effluent to the required level of 20mg/l Biological Oxygen Demand (BOD) and 30mg/l suspended solids, which is specified for compliance with EN 12566-3.

For the treatment process four stages are involved. Each of these stages occurs individually in each of the chambers within the tank.

The stages are:

1. Primary Settlement: The wastewater flows into the prechamber for primary treatment. Solid substances settle and are partially broken down by anaerobic bacteria and then transferred by gravity flow into the biological reactor for treatment.

2. Biological Reactor: Biological cleaning now occurs. The wastewater is circulated and aerated in the reactor using air fed in through the aerator oxygenating and developing bacteria. It interacts with the floating media which are colonized by purifying micro-oraganisms.

3. Treated liquor then flows to the clarification chamber where settlement occurs where the sludge material sinks (sedimentation) to the bottom of the system. This allows clarified water to form at the top of the chamber. The clarified wastewater is then discharged into the outlet drain by gravity or fitted effluent pump and hence lowers the water level in the reactor.

4. The secondary sludge (excess sludge) is transferred back to pre-chamber one.

3.1 Gravity or Pumped Systems

The Eurotank BAF2 units are available in either gravity or pumped systems. Pumps are available in various sizes, which are available to suit the specific requirements of the customer.

Where effluent from the system can flow downslope to the discharge point then a gravity system can be used. Where the treated effluent needs to be pumped to a higher level or to a pumped discharge percolation area, then a pumped outlet is necessary. Where it is necessary to pump a long distance then a non-return valve is recommended. The need for a non return valve is to be determined by the purchaser's engineer/installer. We take no responsibility for malfunction due to not installing a non return valve. Where the pumped outlet is feeding a pressurised distribution network then it may be necessary to have a separate pump chamber to achieve the required pumping volume and flowrate. Full treatment unit/ pump station/ pipe networks available on request

3.2 Pump Specification

The outlet is by gravity displacement for domestic system. For a pumped outlet system a submersible electrical pump is used, eg. DAB NOVA 300 with float switch. This pump has a maximum flowrate of 150l/min and can pump to a maximum head of 7m. Alternative pumps may also be used. When replacing a pump, it should be replaced with an identical model and using the brackets provided as location of the pump is of importance to the process.

4.0 DrawIng of Standard Domestic System

Eurotank BAF is available in various tank configurations but chamber sizing and layout remain the same. Example BAF2 P6 Sytem Spec Sheet

EuroTank BaF2 Secondary Wastewater Treatment Systems

Supplied By: Tpw Systems Ltd, Wexford Sales /Service 087 2600438

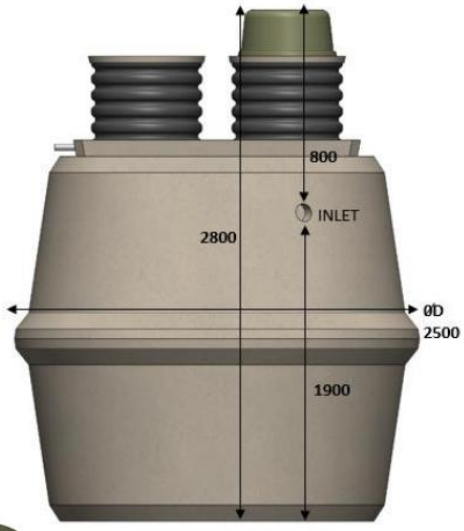
053/9137650 Email npquaid@gmail.com web: www.TPW.ie

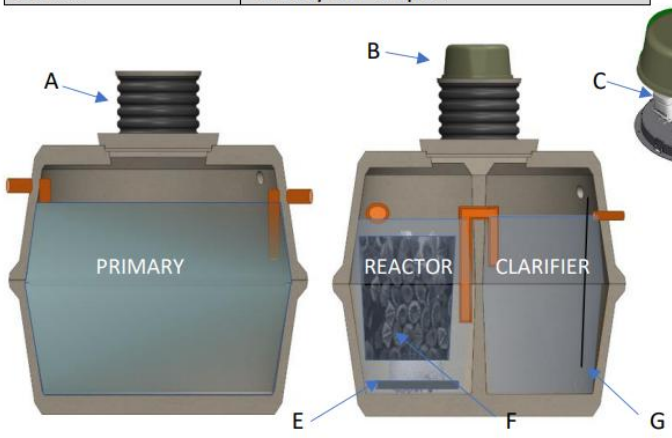
Description:

TPW Eurotank BAF2 is a very strong **Concrete**, Economical, Efficient, Wastewater/Sewage Treatment System for use in domestic housing and commercial applications.

The system is **En12566/3 & NSAI SR66 Certified** as listed on Pia Gmbh for Irish Use. Eurotank BAF uses Moving Bed Technology in a 3 stage Biological Aeration Filtration process as a very simple method of treatment with great effluent quality. The range comprises various tank sizes, comes fully built and delivered with a lot of installation advantages. Full after-sales service nationwide service.

Population Equivalent PE	6 TO 50 Tank configurations for 6, 12, 25, 50 and up to 300
Certification	By Pia Gmbh To En12566/3 SR66 as listed for Irish use. (ATTACHED)
Effluent Quality	BOD_5 - **11 mg/lt** *<20mg/l required* SS - **12mg/lt** *<30mg/l required* NH_4-N – **6.2 mg/lt** *<20mg/l required* Exceeding Irish Requirement
Electrical Consumption -Cable -Protection	1kwH/D 2.5mm2 x 3 core SWA (up to 100m run) RCD 16 amp,230v ,30ma ,Bs 4293 standard
Alarm	Audible For Pump Failure
Outlet	Gravity or Pumped





A Pvc Risers, sealed no leaks, Ground Adjustable
B: Enclosure, Aesthetic control unit housing
C: ECO Blower unit
D: Control unit with built in Mcb`s & alarm
E: Sludge return, solids removal & activated sludge
F: Media Bed **G:** Aeration Diffusers

Internal Treatment Process & Chamber Layout

The Process has 3 Functions Housed in 3 Chambers
Chamber 1 – Primary settlement chamber, receives raw Sewage and Wastewater & settle solids.
Chamber 2 – Reactor, Biological treatment with use of aeration and high spec Fluidised Media
Chamber 3 – Clarifier, any remaining soilds are allowed settle and are returned to primary chamber to aid activated sludge process
Final Effluent leaves chamber 3 Via gravity or float switched pump.

5.0 Installation

5.1 Transportation

The tank should be securely tied on a level base and free from any debris to prevent any movement, destruction or potential injury occurring during delivery. When lifting the tank it is important to ensure that the tank is empty and is lifted by crane or other appropriate certified for use lifting equipment. All lifting should be completed by an experienced operator.

5.2 Initial Inspection

Prior to installation all unit should have a visual inspection completed by the purchaser. The unit should be checked for any damages such as cracks or defects. If any damage is present on the tank, please contact your supplier immediately and do not install the tank as once the tank is delivered and accepted any claims for damages will be classified as void.

5.3 Siting

The required minimum distances for installation of a septic tank or wwts from such items as dwellings, boundaries and watercourses in Ireland must be in compliance with the local authority of the specific area or the Environmental Protection Agencies (EPA) manual titled "The Environmental Protection Agency Code of Practice Domestic Waste Water Treatment Systems (Population Equivalent ≤10)". The typical minimum distances for the tank and percolation area in Ireland are outlined below. These are only guidelines – and advice should be obtained from your engineer when positioning the system.

Table 6.2: Minimum separation distances from the entire DWWTS

Features			DWWTS – periphery of tank/plant and infiltration/ treatment area (m)
Public/group water supply abstraction points/wells			60
Down-gradient domestic well	3 ≤ PV ≤ 10 (usually SAND- or GRAVEL-dominated material)	Depth of soil/subsoil > 2.0 m between invert level and bedrock, and water table 1.2–2.0 m	60
		Depth of soil/subsoil 2.0–8.0 m between invert level and bedrock, and water table > 2.0 m	40
		Depth of soil/subsoil > 8.0 m between invert level and bedrock, and water table > 2.0 m	30
	10 < PV ≤ 30 (usually SILT- or SAND- or silty GRAVEL-dominated material)	Depth of soil/subsoil 1.2–8.0 m between invert level and bedrock	45
		Depth of soil/subsoil > 8.0 m between invert level and bedrock	30
	30 < PV ≤ 120 (usually SILT/ CLAY- or CLAY-dominated material)	Depth of soil/subsoil 1.2–3.0 m between invert level and bedrock	40
		Depth of soil/subsoil ≥ 3.0 m between invert level and bedrock	30
Alongside domestic well			25
Up-gradient domestic well			15

Features	DWWTS – periphery of tank/plant and infiltration/ treatment area (m)
Karst feature	15
Lake or foreshore	50
Watercourse/stream	10
Open drain or drainage ditch	10
Adjacent tank/plant and percolation area, polishing filter or infiltration area	10
On-site dwelling house	7 (tank/plant)
	10 (free water surface constructed wetland)
	10 (infiltration/ treatment area)
Neighbouring dwelling house	7 (tank/plant)
	25 (free water surface constructed wetland)
	10 (infiltration/ treatment area)
Surface water soakaway[a]	5
Road	4
Slope break/cuts	4
Trees[b]	3
Site boundary	3
Heritage features, NHA/SAC/SPA[c]	See note

PV, percolation value.

[a] The soakaway for surface water drainage should be located down-gradient of the infiltration/treatment area; it should also be ensured that this distance is maintained from neighbouring storm water disposal areas or soakaways.

[b] Tree roots may lead to PFPs developing. The canopy spread indicates potential root coverage.

[c] The distances required depend on the importance of the feature. Therefore, advice should be sought from the local authority and/or from the the Department of Housing, Local Government and Heritage, specifically the National Monuments Service and the National Parks and Wildlife Service.

Other factors that should be taken into account when considering the location of your tank include the following:

- During maintenance and de-sludging an odour may occur from the sewage treatment plant, as a result of this the direction of the prevailing wind should be assessed.
- The unit should be installed in a location where it will not be subject to any superimposed loads. If the situation occurs where the unit must be installed near an area of traffic or where other superimposed loading can be applied, a reinforced concrete slab designed by a structural engineer should be installed. This slab will limit the load being transmitted to the unit. Beaming or other load spreading solutions may be required.
- Provide sufficient access for the sludge emptying tanker when de-sludging and during installation provide adequate access for excavator and delivery
- The water table and groundwater conditions must also be analysed as site water can damage the system. If the tank is subjected forces of water during installation it may result in floatation occurring, which will lead to difficulties and an inadequately installed tank. It is critical that sufficient drainage is provided to permanently discharge any groundwater.

5.4 Excavation

The excavation should be conducted in accordance with the appropriate Health and Safety Requirements. Excavation for the system should allow a clearance of 300mm between the tank an the sides of the excavation.

NOTE: These installations notes are guidelines only. The specific installation methodology depends specifically on the ground type, soil type, position of system, depth of installation, water table level, bedrock level, etc. It is mandatory that your indemnified engineer approves the installation plan prior to commencement of any work.

5.5 Dry Normal Ground Conditions

Sites are classified as "dry" when at all times water lies below the base of the tank and drains naturally. The tank can be installed as per 5.6.

5.5.1 Abnormal or Wet Ground Conditions

Sites are abnormal if groundwater is expected to reach top level of the installed tank at anytime, if the excavation contains sharp rock or an uneven base.

5.5.2 Deep or Trafficked Installation

An installation is deemed to be deep if the top of the tank is 1.8m below ground level. Tanks installed under areas that are loaded with traffic or vehicles (other than pedestrian or lawnmower) are deemed unsuitable for normal installation.

5.6 General Installation Procedure

For installations deemed to be dry as per 5.5

- Excavate a hole 300mm between the tank and the sides of the excavation and 200mm below
- the bottom of the tank.
- Machinery and machine operators used to lift the unit must have relevant certification and qualification to carry out the procedure
- Material used to backfill should be loose stone free and impermeable.
- The unit should be **PERFECTLY LEVEL** in all directions.

5.6.1 Installation Procedure for Wet Ground Conditions, Deep installations (>1.8m Below Ground Level) or conditions in 5.5.1 or 5.5.2

NOTE: These installations notes are guidelines only. The specific installation methodology depends specifically on the ground type, soil type, position of system, depth of installation, water table level, bedrock level, etc. **It is mandatory that your indemnified engineer approves the installation plan prior to commencement of any work.**

Guidelines – A concrete slab may need to be poured at the base of the excavation, typically using 25n20 concrete reinforced with A393 mesh. The tank can be placed on the slab and should then be filled with water. It is highly recommended that the excavation be backfilled with dry lean concrete surrounding all of the Tank. TPW Systems / Eurotank can offer Engineering solutions to all abnormal installations on request.

5.7 Risers

Where a deep installation is proposed then it will be necessary to install risers on the access manholes. The access manhole in the tank is designed to suit 600mm diameter twinwall corripipe. These risers should be sealed to prevent water ingress occurring. Risers are available on request.

5. 8 Lids

The standard lid is only suitable for pedestrian/lawnmower duty but not for medium/heavy traffic duty. If there will traffic over the lid it is recommended that the lid is replaced with a manhole cover with a suitable load rating – and that the associated concrete plinths and concrete surround are installed to support the proposed loads.

Where the standard lid supplied with the system is used – it is recommended that the access cover is fenced off to prevent traffic or interference over the lid.

6.0 Ventilation

All sewage treatment plants should be vented in accordance with BS 6297:1983. To allow the system to have a free flow of air and dispense odour it is vital for the system to provide suitable ventilation, the most common method of ventilation is to utilise a soil vent stack at the dwelling.

7.0 Electrical Power Installation

All electrical work must be carried out by competent personnel capable of completing the electrical installation using suitable material and complying with current regulations. It should be ensured that the electrical wiring and all other electrical system parts are in good working order. Under no circumstances is the system to be started if damage is present. Warning tapes should be placed on the cable and additional warning tape should be at a depth of 150mm.

It is not feasible to state a specific electrical installation method due to variance of site conditions and distance. In general terms the cable protection is by a suitable RCD to the standard of BS 4293 and a MCB to BS 3871. The RCD should a minimum of 16 amp, rated 230V, 30mA. 2.5mm² 3 core SWA is appropriate for runs less than 100m and loads up to 0.75 kW. While 4mm² 3 core SWA is adequate for runs less than 100m and loads up to 1.55kW. The Eurotank system requires a 3 core SWA cable to be run from the fuse board to the control panel which is located on the tank. The cable between the tank and the control panel should be run in a duct where deemed necessary. This work must be done by a suitably qualified electrician.

8.0 Disposal of Effluent

Despite the treated wastewater from the system being cleaned to a very high level, in most circumstances it will be required to dispose of the treated wastewater to ground. The preferred method of effluent disposal will be subject to your specific location and should be stated in the regulations related to your planning application. Designs of percolation areas should be carried out by your own engineer. Any consent that needs to be obtained prior to commencement of the discharge is responsibility of the homeowner. A sampling chamber should be fitted to comply with regulations for sampling purposes when required. Percolation area designs available on request.

9.0 Post Installation Checks

After installation the following checks must be conducted

- All plant (electrical pumps) are connected correctly.
- The height of the extraction points is correct.
- The tank and the chambers are water-tight (perform leakage checks).
- Sufficient aeration/ventilation is present (e.g. whether a roof vent is present).
- Ensure during the connection work that all cables and hoses are long enough for the units to be removed from the tank without any problem.

10.0 Warranty

All goods, within a twelve month period from delivery of system to site, that have been judged to be flawed and under normal circumstances have failed to perform their operation successfully will be repaired or replaced by TPW Systems/ Eurotank without charge. If applicable, this clause of Eurotank warranty is restricted to repair or replacement of the goods but doesn't include costs such as installation, transportation or similar affiliated costs on site.

This warranty is based upon the following conditions:

1. Tpw Systems /Eurotank being granted the opportunity to examine the goods to analyse that the goods are actually flawed.
2. The goods have been used strictly in accordance with the instructions supplied by Tpw Systems /Eurotank and this manual
3. Any claim being sought by the buyer must be alerted to Tpw Systems/Eurotank within seven days of detection.
4. To maintain warranty coverage for the second year, the product must be serviced by an authorized service technician within 12 months of installation or commissioning. If the required annual service is not completed, the warranty will remain valid for the first year only, and all warranty coverage beyond this period will be void.

11.0 Maintenance

The maintenance of the sewage treatment system is crucial, as it will ensure that the system operates efficiently. Failure to provide maintenance to the system will result in damage that will cause increased costs for replacement goods and maintenance in the long term. Failure to have annual maintenance completed will void any warranty.

There are some basic checks that the owner should be able to carry out that will avoid the need for call out of a service engineer. Below are some self-help checks that may be helpful:

Note: All maintenance should be done in conjunction with appropriate Health and Safety guidelines.

- Check the access lid is correctly and completely connected at all times.
- Avoid large quantities of the following to enter the system: oils, disinfectants, bleaches, milk, food, nappies and baby wipes.
- The aerator should be inspected frequently to ensure it is operating efficiently. The home owner should be able to hear the aerator if it is operating. The vent on the unit can become blocked. or covered from a wide range of objects e.g. overgrown grass.
- Failure of the outlet Effluent pump will be signalled by an Audible alarm built into the control unit.
- Obstructions can occur at the inlet and outlet. These obstructions can usually be removed by rodding.
- Ensure the electrical supply is operating correctly by a visual inspection. Contact an appropriate and competent person to repair the electrical works. Do not attempt to repair the electrical faults yourself.
- Check the level of sludge in the unit. If the unit is required to be de-sludged, it is the responsibility of the owner to arrange for the tank to be de-sludged. The unit requires to be desludged when sludge is occupying 30% of the volume of the first chamber. **Never empty the second chamber** (biological reactor). This can damage the air diffuser membranes and remove essential media and bacteria.
- Check all pumps and pipework are not blocked.
- Visually inspect for any surface water entering the unit.

11.1 Maintenance Schedule

The following maintenance schedule should be adhered throughout the year:

Weekly check:

- The aerators and pumps should be checked to ensure they are working efficiently. A quick check can be conducted by listening to hear if the motor is running.
- At the sample point location, check if the treated wastewater is discharging correctly from the unit.
- Keep alert for any leaks or odours.
- Listen for audible alarm.

Six month check:

- Walk the entire system and inspect for any odours, leaks, lodged surface water and any discrepancies.
- Is there a smell or bad odour when the lid is lifted.
- Inspect the aerator/pumps for any obstructions or blockages. If any obstructions or blockages are present it is important to replace or repair, depending on the circumstance.
- Visual check for mechanical damage.
- Vents are clear from any blockages or obstructions.
- Ensure lids are secure.
- Ensure there is strong airflow (bubbles) in the reactor chamber.

Annual Service:

- TPW Systems / Eurotank recommends that all systems are serviced annually by ourselves or suitable qualified service engineer.
- This will ensure that the system is operating efficiently and will provide maximum benefit for your system in the long term. The annual service should include:
- A thorough inspection on all plant.
- The removal of any scum or grease located on the sides of the unit.
- All lids are fitted securely.
- Manual activation of all pumps.
- Sludge Levels
- Determine if the unit needs to be de-sludged, and if not approximately when it will be required to be de-sludged.
- Clean all aerators/pumps and replace these if they are not able to perform their function effectively. Including filters etc.
- Check that the inlet and outlet of the unit are functioning correctly.
- Perform air pressure test.
- Inspect all pipework and hoses to ensure no blockages or obstructions are present.
- The results and the work performed must be recorded in a maintenance report. The maintenance report must be presented to the relevant authorities upon request.

11.2 The Do's and Dont's for Unit Owners

11.2.1 The Do's

- Conduct weekly inspection
- Have a service engineer or Tpw Systems Ltd conduct a full service on the system once per year.
- Use liquid detergents when washing clothes and dishwashers.
- If possible wash your clothes throughout the week rather than all in one day.
- Prior to placing any item down the toilet or sink consider if this will affect your system.
- Contact TPW Systems for any questions or concerns you may have.

11.2.2 The Dont's

- Place any medicines, baby wipes, incontinence pads, poisons, weedkillers/pesticides, tampons, mouth wash, nappies. condoms or similar items down the toilet.
- Place any cooking oil, grease, fat or similar items down the sink.
- Use a waste disposal unit as the system may not be large enough to facilitate the waste.
- Wash all your clothes in one day.
- Direct leachate from a condensing boiler into the system.
- Direct effluent from a water softener into the system.
- Allow any surface water to enter the system.

This list is not exhaustive. No responsibility is taken for any system malfunction where any item or substance not classified by Eurotank as normal sewage enters the system. If in doubt – contact us. Any items that do not break down quickly such as baby wipes or hair can have a serious impact on the operation of the system

11.3 Maintenance Service

TPW SYSTEMS LTD offers a nationwide service on wide range of maintenance aspects for all parts of the customer's treatment system through our highly skilled workforce. Please contact us to discuss with a member of our team a service inspection that will be of benefit to you and to obtain contact details for your closest agent.

The servicing contracts offered by Tpw Sytems / Eurotank typically include the following items:

- Validation that all equipment is operating correctly.
- Validation that blowers and pumps are operating correctly.
- Test on ventilation.
- Visual inspection of the unit and surrounding area.
- Replacement of systems components if required.
- Sludge measurement.
- Cleaning replacement of filters

11.4 Sludge

In order to ensure that the system operates efficiently sludge has to be removed from the units primary chamber. The removal of sludge is the responsibility of the system owner. Generally, sludge is required to be removed from the unit once per year. The de-sludging must be conducted by a competent contactor. The primary chamber is the ONLY chamber that needs to be desludged.

11.4.1 De-sludging Procedure:

- Remove the access cover for the de-sludging.
- Place the hose of the vacuum tanker at the very bottom of the accumulated settled sludge in the first chamber to ensure all sludge is removed.
- When removing the hose from the unit ensure that no sludge is dropped back into the unit.If possible use a clean water hose to remove any residual solids that still remain on inside of the unit.
- Refill the tank with clean water. NOTE: Tank should never be emptied of water during desludging as you risk flotation / tank collapse.
- Close the access cover for the de-sludging securely.

De-sludging procedures vary depending on how the system was installed and the de-sludging equipment being used. We do not accept any liability for damage caused during desludging. If you have any concerns, please call us for advice.