Owners' Manual

Operation, Maintenance and Troubleshooting

B-Series Advanced Wastewater Treatment Units

Revolutionary Waste Treatment

Advanced Wastewater Treatment Units (ATU's) that deliver unsurpassed performance at an unbeatable price.

Bluewater

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Operation and Maintenance Manual

This manual is designed to provide you with all of the information you need to ensure a long and trouble free life for your ATU.

Model & Serial Number

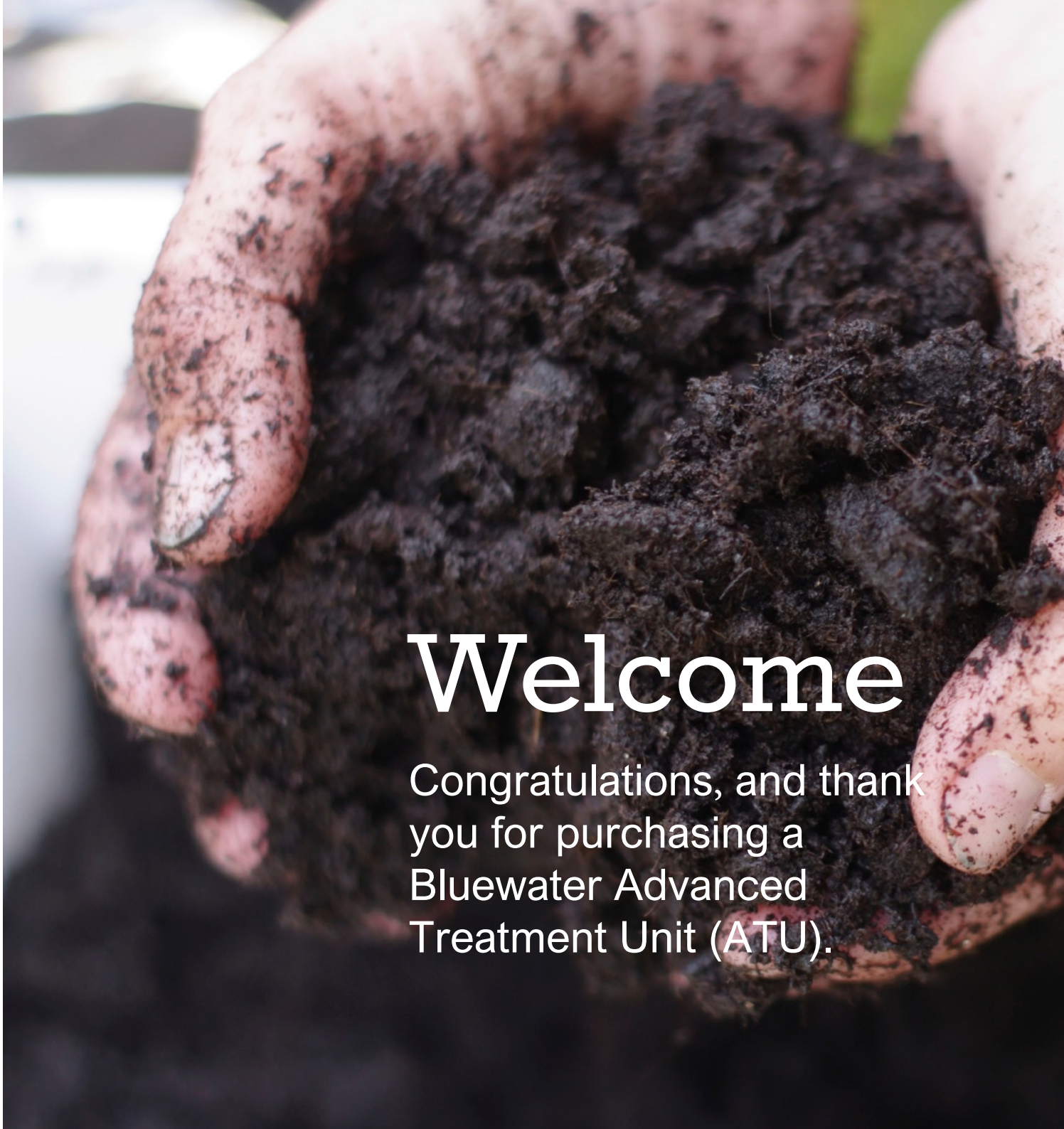
Every unit is delivered with two data plates. One is attached to the top of the Inner Chamber Lid; the second must be located next to the Air Blower. These plates carry details of the Bluewater supplier and serial number, which should be quoted during any future enquiries.

The Model and Serial number may also be found on your Bluewater Invoice. Please make a separate note of this below, as you will be asked to quote it if you contact us.

The Bluewater ATU system was tested and certified to NSF/ANSI Standard 40, Class 1, by NSF International.

Model # _____

Serial # _____



Welcome

Congratulations, and thank you for purchasing a Bluewater Advanced Treatment Unit (ATU).

Basic System Design

The effluent produced by Bluewater ATU's exceeds all effluent water quality requirements set out by NSF/ANSI Standard 40.

Class 1 designation requires a maximum of 25mg/l CBOD5 and 30 mg/l TSS - the six month daily average for Bluewater is <5mg/l CBOD5 and 3 mg/l TSS.

NSF (www.nsf.org) based in Ann Arbor, MI, certified Bluewater ATU's as meeting the American National Standards Institute (ANSI) Standard 40 Class 1, the highest standard possible for Advanced Wastewater Treatment Units.

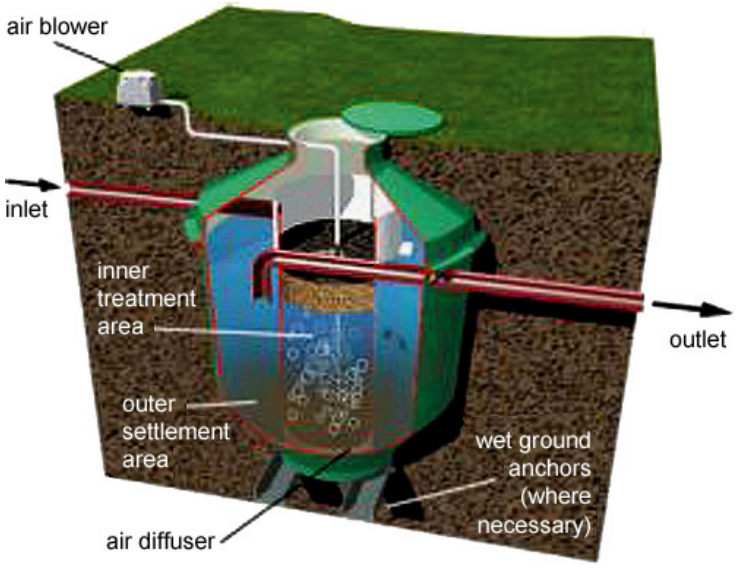
Very simply, your Bluewater ATU consists of 2 chambers: an inner Treatment chamber and an outer Settling chamber.

Air is blown into the ATU by an electrically powered compressor. The air is circulated from the bottom of the air inlet pipe through two or more diffusers located at the bottom of the inner chamber. The air rising through the liquid inside this chamber increases the oxygen supply to the microorganisms that are naturally present in the system.

This accelerates the growth and activity of these naturally occurring microorganisms or “biomass”, which break down and degrade the solids to a clear effluent and a non-toxic sludge.

The greater the biomass inside the ATU, the quicker and more efficient the degradation of the organic solids introduced to the system. To improve the efficiency of the unit, the inner chamber contains plastic media. This media provides a large surface area to which the microorganisms adhere and grow.

The diffused air also operates as an ‘Air Lift’ which re-circulates solids from the outer Settlement chamber to the inner Treatment chamber. This recirculation ensures that the effluent is completely treated by making both chambers aerobic. The process runs continuously 24 hours a day.



Initial Start Up

Process overview

Once your Bluewater unit has been installed, operation may commence.

The unit's air compressor runs continuously to feed air to the diffusers located in the base of the treatment chamber. This oxygenates the waste and ensures constant circulation of the waste through the system. As our unique design has no corners, there is nowhere for sludge to accumulate and to become septic. This simple but effective approach significantly reduces any odor from the system.

Once the unit is in operation, biomass builds up on the surface area of the plastic media within the treatment chamber, and is also retained in suspension circulating around both chambers. Maximum growth of the biomass, and therefore full efficiency of the unit, is normally achieved within 3 to 7days from start-up.

For your peace of mind the unit comes with an air delivery failure alarm. If air delivery to the system is interrupted for any reason the alarm will sound and flash (please refer to service and troubleshooting below). If the alarm is not alerting you to a problem, the compressor is operating and there is no odor from the system, you may rest assured that the unit is functioning properly.

What Can Be Treated?

Your Bluewater Unit treats all normal human and household waste.

As with all ATUs, your Bluewater cannot break down non-organic waste so, in order to maintain the efficiency of your system, you should take the usual care and precautions to ensure that such items do not enter your waste systems (sinks, toilets etc.).

To avoid overloading the system we advise against the use of a grinder waste unit in your kitchen sink unless it feeds the ATU through a grease-trap. We suggest however, that this waste is best disposed of by composting, remembering that you must remain compliant with any relevant local regulations.

Operating Instructions

After completion of the installation process, plug the compressor and the low-pressure alarm into 110v electricity supply and turn them both on and make sure that the blower is operating. Once you have turned the unit on, following the list of "Dos" and "Don'ts" listed below completes your operating responsibilities as the system owner.

Looking After Your ATU

Do's and Do Not's

Once operating, your Bluewater ATU will effectively treat all regular domestic wastewater provided the unit is sized, installed and maintained correctly.

All regular household cleaning products can be used in sensible quantities with your ATU. Please bear in mind however, that your Bluewater ATU works by bio-degrading your waste. Some chemicals present in household cleaning products are intended to destroy micro-organisms, so the overuse of anti-bacterial or fungicidal cleaners and bleach may upset your system and seriously impair its efficiency. In order to preserve the quality of your system's effluent, we also advise against the use of ammonia based products.

Bluewater strongly recommends the use of laundry and dishwasher products that are "Environmentally Friendly". These help to maintain the biological balance and efficiency of your unit.

What to do...

- DO familiarize yourself with the contents of this manual. Our systems are designed to be as simple as possible to operate but will work better and longer if the few simple rules and procedures contained in this document are followed.
- DO comply with any local regulations that may conflict with, override or supersede the contents of this manual.

What not to do...

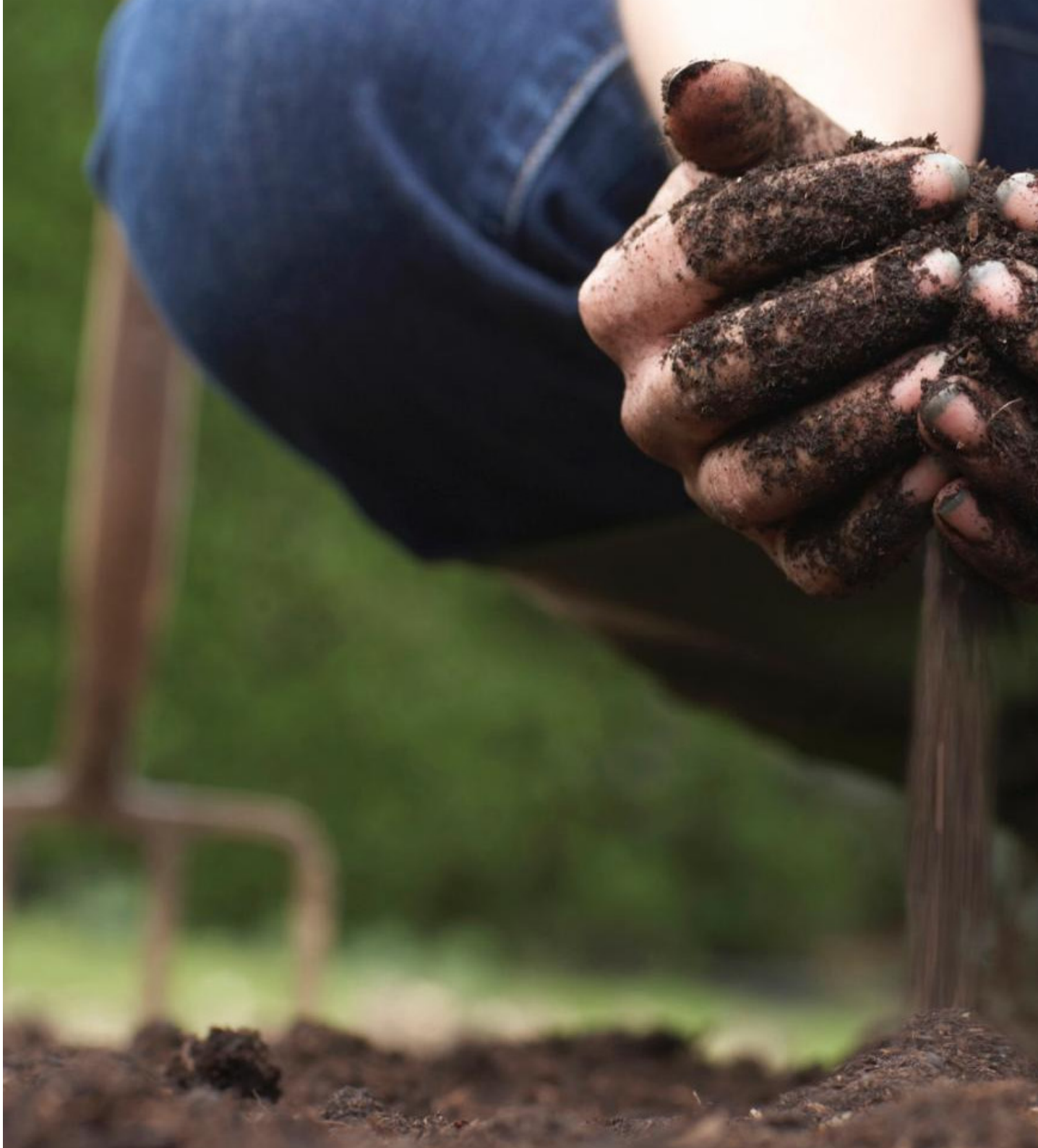
- DO NOT permit non-organic or non-biodegradable products, such as coffee grounds, chemical waste, disposable diapers, tampons, sanitary napkins, cigarette butts, latex / rubber products, paint, solvents, drain cleaners or excessive quantities of bleach, grease or cooking oil to enter the system.
- DO NOT allow the discharge from a water softener to enter the system, as the backwash and residue from your softener may adversely affect the performance of your ATU.
- DO NOT have your ATU serviced by anyone other than a qualified technician, as this will invalidate your warranty.
- DO NOT put additives designed for septic systems into your ATU. Your ATU is NOT a septic system and does not require the addition of any such products or chemicals.

Inactivity

Your Bluewater ATU is designed to operate normally during periods of inactivity. However, should a situation arise where your Bluewater is likely to be inactive for significant periods of time, e.g. longer than one month, we advise that a standard timer, available from any hardware store, be installed between the power supply and the compressor.

We recommend that the compressor should be run for 15 minutes every 4 to 6 hours during such extended periods of inactivity. This minimal amount of aeration is recommended to keep the biomass within your Bluewater alive even when there is no use or ‘loading’ of the system.

This minimizes the risk of the system becoming septic and ensures the speediest aerobic breakdown of waste upon resumption of normal activity.



Service and Maintenance

Overview

The essence of the Bluewater design is simplicity.

In order to satisfy yourself that the system is working properly, you can simply use “sight and smell”. Do remember: under NO circumstances should you attempt to enter the ATU.

The liquid inside the tank is called “mixed liquor”. To evaluate the mixed liquor, carefully open the locked access hatch and lift the internal lid. If the system is working correctly there should be no discernible smell coming out of the ATU; if there is any smell at all, it will have a musty character and should not be unpleasant or offensive. The mixed liquor should have a grey-brown appearance with no visual evidence of solids, apart from the hummus, or crust, that naturally forms on the surface of the outer chamber.

Visual evaluation of the effluent can be carried out by inspecting the flow downstream of the ATU through the sampling vent in the effluent pipe. Correct system operation is indicated by the flow of clear, odor-free liquid through the effluent pipe or the Sampling Chamber.

If, for any reason, it is necessary to collect effluent samples, this must be done by inserting a collection vessel into the effluent stream through an access point downstream of the ATU.

Servicing Your ATU

Throughout the lifetime of its operation, your Bluewater ATU should not require any servicing or maintenance, if it is being used as intended i.e the DO'S and DON'TS previously mentioned. If, for example, your ATU has accumulated an over-abundance of non-biodegradable or un-digestable materials, you may require the system to be emptied of those materials. There is a specific method to having this done, so please consult with your distributor or the manufacturer beforehand.

Should you wish to have a Bluewater ATU representative perform an on-ste, physical evaluation, this can be scheduled at an extra cost to the home owner. A typical site inspection will include:

1. Servicing the compressor including replacement or cleaning of the filters, diaphragms and magnets as required
2. Checking for proper air flow
3. Inspection of all electrical connections
4. Checking of effluent quality, including a visual check for color, turbidity, scum overflow; and a check for odors
5. Written notification to the owner of any issues, remedies required and estimated date and cost of correction

All of these tasks can be performed by the home owner with very minimal instruction. Note that some jurisdictions require mandatory maintenance for up to 2 years. Please determine any such requirements through your regional authorities.

Service and Maintenance

Service Post Warranty Period

After the initial two year warranty period has expired on the compressors and alarms, all related system maintenance is the responsibility of the home owner.

Your service responsibilities as an owner after the initial warranty period include:

Weekly
Check that the compressor is running correctly.

Monthly
If a grease trap is fitted this should be checked, cleaned and emptied.

Annually
Compressors:
Refer to the compressor manufacturer's instructions supplied with your unit.

Air Line:
Check the fittings at both ends of your airline to ensure a good, tight fit.

Air Delivery Failure Alarm:
Using the test switch on the alarm, verify all 3 modes of alerting are functioning. Check and, if necessary, change the batteries per manufacturer's instructions if equipped.

Inside your ATU:
Check that the diffusers are bubbling vigorously. Where multiple diffusers are fitted they should bubble at about the same rate. It this is not the case, check the air lines to each diffuser. If necessary, disassemble and check for blockages.

Diffuser(s):
Check that the air lines from the diffusers are vertical.

Internal Plumbing:
Check all pipes and valves for tightness.

Tank Lid:
Check the general condition of the lid and lubricate all screws. The lid must be kept locked.

Tank Outer Chamber:
The unit's outer chamber is designed to retain a "humus" or crust. This crust can be up to 16" deep without adversely affecting the quality of the Unit's effluent. If possible, check the depth of this crust at least once a year to ensure that it is within guidelines.

Every three years
Change compressor diaphragms and magnets as per manufacturer's instructions. The compressors are oil-less.

Troubleshooting

As there are no moving, mechanical or electrical parts within the Bluewater, faults are extremely rare and and can generally be identified by reference to the guidelines below. With the exception of the compressor and the failure alarm, the ATU does not contain any user-repairable or user-replaceable parts. If any other component appears to be broken or faulty please refer to the System Data Plate which is located on the compressor before contacting either your authorized service representative or calling Bluewater at 1-613-290-9567.

All replacement components may be purchased from Bluewater. Please visit our website at www.bluewateratu.ca or call us at 1-613-290-9567 for further information and ordering instructions.

If after performing these checks you are still are unable to identify or resolve the issue please refer to the System Data Plate which is located near the air blower before calling Bluewater at 1-613-290-9567.

Please ensure that you have the following available when calling:
Your Name, Address and Postal Code
Your Bluewater Model # and Serial #, details of which are located on the System Data Plate that is situated next to the compressor.

1) The integrated alarm sounds and flashes

Check that the compressor is functioning. Check that all airlines are attached. If all appears normal the alarm may be faulty. To install a replacement alarm, unplug the existing alarm from its electricity supply and then disconnect from the air line. Connect the new alarm, first to the air line and then to its electricity supply, in accordance with the manufacturer's instructions provided with the replacement unit.

2) Compressor is noisy

Linear air compressors are designed to be very quiet during normal operation. Check for vibration against its mount and tighten attaching bolts if necessary. Check filter cover to ensure proper fit and correct if necessary. If these actions do not correct the problem the compressor may need to be replaced.

3) System is not receiving air

Check compressor for proper function. Check compressor filter for restriction. Check air lines and diffusers for proper connections and check for restrictions.

4) Air compressor is not operating

Check that the power supply is properly connected to the wall socket. Check circuit breakers. If breakers and wiring are in order check that there is no local power outage. If all is in order the linear air compressor may need to be replaced. To replace the compressor, isolate it from the electricity supply and disconnect it from the air line feeding into the ATU. Connect the new compressor first to the air line and then to its electricity supply, in accordance with the manufacturer's instructions provided with the replacement unit.

5) Liquid in system is not flowing

Check system for blockage caused by non bio-degradable items. If found, carefully remove the blockage.

6) System emits offensive odor

Ensure that no inappropriate chemicals have entered the system. Check for proper operation of the compressor and its filter. Check that water level in the system is not higher than the top of the inlet pipe. Check date of last emptying. Check that there is no water pooling in the area of the effluent pipe.

Desludging/Emptying

Process overview

Your Bluewater ATU is designed to be emptied only if it has been abused in some manner. Depending on abuse, some may require emptying from time to time. Significant solids or a haziness or cloudiness (known as turbidity) in the final effluent indicate that it is time to empty your Bluewater, or that a fault may have developed within it.

The Emptying Process

1) Switch off the electrical supply to the air compressor.

2) Remove the majority of the humus crust from the outer chamber.

3) Empty the remaining liquid through the “empty pipe” located in the inner chamber. DO NOT empty directly from the inner chamber. Also remove any non-dissolved solids that have collected in the inner chamber, such as soiled diapers, sanitary napkins etc. Take care to prevent such solids from re-entering the system.

4) Leave 2” - 3” of liquid in the bottom of the tank. This will preserve the viability of the microorganisms and will ensure a speedy restart of the system.

5) With the lid removed visually check the inside of the unit with a flashlight for any obvious damage or faults. DO NOT enter the unit under any circumstances.

6) Refill with water.

7) Replace the lid and ensure that it is locked prior to restarting the blower.

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1-613-290-9567
www.bluewateratu.ca
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