B & J Wakefield Services, Inc.
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Owner Maintenance, Care, and Operation Instructions

The Aerobic Wastewater Treatment Systems have been designed and built to provide long term, reliable, and cost efficient service. This treatment plant will operate with a minimal amount of attention; however, there are a few things you should know in order for your system to maintain its biological stability and give you years of outstanding performance.

Your local regulating authorities and designers have sized your Aerobic Wastewater Treatment System for your home. This means you should try to maintain a certain amount of daily flow into the system.

Size	Safe Zone
500 Gallons per day	**350 – 500 Gallons per day**
600 Gallons per day	**450 – 600 Gallons per day**
800 Gallons per Day	**550 – 800 Gallons per day**
1000 Gallons per Day	**800 – 1000 Gallons per day**
1500 Gallons per Day	**1300 – 1500 Gallons per day**

How You Aerobic Treatment System Functions

The Aerobic Wastewater Treatment System is similar to large municipality sewage treatment plants. It uses an extended aeration activated sludge process. This type of treatment depends primarily on the use of air. When air is introduced to the wastewater, it promotes the growth of aerobic bacteria and other microorganisms that break down the organic material found in regular household sewage.

Raw unsettled waste/water from you home enters directly into the pretreatment tank. Inside the pretreatment tank, the solids separate from the liquid and the liquid flows into the aeration chamber. Inside the aeration chamber, simple hydraulic displacement is accomplished by the introduction of air. Air is introduced into the aeration chamber by passing from the aerator motor through the air diffuser and into the system. This air promotes the growth of aerobic organisms in much larger amounts than would naturally occur. It is these aerobic organisms (bacteria) that break down the organic material. As the wastewater leaves the aeration chamber, it enters the “quiet zone” better known as the clarifier. No mixing occurs inside the clarifier.

In the clarifier, any “leftover” solids separate from the liquid and settle to the bottom of the clarifier. This solid material is called sludge. Sludge contains dissolved oxygen and the sludge bacteria are activated by oxygen. This activated sludge is returned to the aeration chamber where it is mixed and digested again. The sludge then mixes with incoming wastewater. This mixture of returned sludge, wastewater, and dissolved oxygen is referred to as mixed liquor. The mixed liquor flows back into the clarifier, the solids separate and return once again to the aeration chamber. This never-ending cycle produces a clear, odorless, high quality effluent that is ready to be released to the environment.

- *You will need to monitor your frequency of washing clothes and dishes as this could complicate the treatment process if most of the wastewater from you house in graywater. Graywater does not contain enough organic material to help the treatment process. To avoid disrupting the biological stability of your system, try to spread your laundry and dishwashing over several days instead of doing it all in one or two days.*
- *Toilets are known to leak water at times from the seal in the tank, so it may be a good idea to test your toilets(s) occasionally. Place a few drops of food coloring or dye into your tank. Observe the bowl for a few moments. If you notice dye or coloring entering you bowl, your seal in the tank is leaking. You will need to replace the flapper in the tank. By performing this simple test, you not only reduce your water usage, but you also prevent diluting the needed bacteria from your system.*

The Aerobic Wastewater Treatment System is much like a living organism. It needs certain things to work and perform properly. Your system can treat most any type of household wastewater. This includes the waste/waters from showers and baths, clothes, and dishes, and toilets. However, as great as the system performs in treating common household sewage, it cannot treat everything flushed from the house. For a more descriptive list of items that the system cannot treat, se the list titled as ***"Items That Are Not Safe To Use In Your System"***

Items That Are Safe to Use in Your Septic System

Think of your system as a way for bacteria to live. This means anything that you use in your home could affect the performance of the system.
It is acceptable to use household cleaners as long as they are not over used. By following the directions on the labels, you should be fine with the amount of chemicals being introduced into the system.

Other than regular household sewage and minor use of cleaners, no other products should be introduced into the system.

Items that are NOT Safe to use in Your Septic System

The proper operation of the septic system depends upon proper organic loading and the life of the aerobic bacteria inside the system.

- Do not put strong disinfectants, bleaches, toilet cleaners or sanitizers, other than small amounts used in daily house cleaning and laundry, into the system (follow manufacturer's instructions). Do not use liquid fabric softeners.

- Do not put chemicals that have high volumes of bacteria killing agents into your system. Do not put commercial, industrial, or chemical waste into your system.

- Do not allow any discharge, backwash, and/or exhaust from any type of water softener to enter the system. Do not allow surface water to pond around the system. Do not allow non-sewage water flows caused by rain or ground water infiltration, storm water infiltration, leakage from improperly maintained plumbing fixtures, excessive volumes of water, etc. to enter the system. Do not allow air conditioner condensation lines, other than those a/c lines installed to directly discharge into the pump tank, to flow into your septic system.

- Do not put coffee grounds, shrimp shells, food waste or any level of cooking grease and/or oils into the system.

- Do not allow pet shampoo or pet dip to flow into the system

- Do not put solvents, paints, or paint thinners, drain cleaners, harsh detergents, heavy metals, or any other toxic materials into your system.

- Do not put disposable diapers, paper towels, tampons, sanitary napkins, condoms or any rubber/plastic products, large quantities of paper products, tobacco products (including cigarette filters), or similar items into the system. Do not put non-biodegradable items into your system.

- We strongly discourage the use of a food waste disposal. However, if you choose to use a garbage disposal, please limit its use.

- Do not put chemicals that are designed to clean out drains or correct “septic tank” problems into your system.

Please be aware that some medications you may be taking, such as antibiotics, may upset the biological stability of the system.

The Control Panel

Each Wastewater Treatment System has its own control panel. This panel is located typically on the wall of the house but also can be found under aerator cover top or over septic system. This control panel is equipped with a complete “systems malfunction” alarm system. Typically this will be an audible alarm and a visual light on the control panel. (In some case the air alarm may be on the air compressor itself.) If for any reason the system alarms the system is not functioning properly. You will need to call your

service provider for repair. Their number will be located on a label on the aerator cover or the control panel. A mute switch is located on control box, or aerator cover, or air compressor itself. (locations may differ). Mute switch is to allow the sound to be interrupted until your service provider arrives.

Periodic Pumping and Cleaning

Determination of the need for pumping can be made only by a trained service person by testing the tank's contents and/or effluent. The pumping should be done by a competent septic tank cleaning company. Your system should be cleaned every 3 to 5 years depending on your daily loading. You should expect to obtain one inch of sludge at the bottom of your system every year. If you use more water than what the system was designed to handle, you will have more build up in less time. This means you may need to have your system pumped and cleaned more frequently.

Your Responsibilities

It is the sole responsibility of the owner to understand, observe, and follow any and all safety rules and requirements pertaining to the entire electrical system, aerator operation, and system discharge concerning the owner, their families, friends , or guests.

There are a few procedures that you will need to follow in order for you Wastewater Treatment System to work to its full potential. The procedures include but are not limited to:

1. Make sure the aerator is never exposed to water, fire ants and rodents.
2. Make sure the system is not exposed to vehicular traffic. This could cause damage to the tank(s).
3. Do not attempt to clean the aerator filter or service any part of the system yourself; without proper training. Doing so could result in electrical shock and may cause severe bodily damage or death.
4. The system will not produce water that is safe for human consumption. Always be sure children are not allowed to play on or around any part of the system. Do not allow pets or livestock around the system or any of its components.
5. Do not allow non-biodegradable materials (i.e. plastics, coffee grounds, etc.), chemicals, solvents, grease, oil, paints or any other type of non-domestic wastewater to enter the System.

Chlorination or Disinfection(if applicable)

Chlorine must be added to a surface distribution system following an Aerobic treatment plant. This chlorination must be taken seriously. Most owners think because my system doesn't stink that they do not need chlorine. Chlorine is used for further treatment of the wastewater after aeration. The proper chlorine must be used. Swimming pool chlorine is to never be used. For further information on chlorine you can visit our website at www.texasseptic.com. There are a couple of ways to chlorinate. One is by

the use of chlorine tablets and the other is by using liquid bleach chlorine. Both have their own unique holding devices and dispersal methods. Tablets allow the treated water to flow across the tablets and into the pump chamber for treatment. Liquid chlorine bleach uses a chamber to hold the liquid chlorine and uses some form of regulator to dose the liquid bleach into the pump tank.

Ultraviolet Light is used in some systems in place of chlorine devices. These systems are very effective but are hard to retrofit and are more expensive to install. Although the overall cost of running this system in the long run is cheaper. Ultraviolet Light has a unique holding device in which the tube runs down the middle of a chamber that allows the treated effluent from the aerobic system to come in contact with light in which then destroys the bacteria.

Detecting Malfunctions or Problems

If you notice the alarm sounding, call your installer or service provider for assistance. The only thing the alarm system does not detect on its own is the actual treating of the wastewater. If you experience odor problems or notice the system is not producing the normal high quality treated output (effluent), call your installer or service provider.

Infrequent Use of System

Should the system be use intermittently or if extended periods of nonuse are anticipated, it is recommended that the system be allowed to remain on in operation. You should not allow the contents of the system to go septic due to nonuse.

What To Do For Service

On every system, you should see labels on the aerator cover or the control panel and possibly on the aerator. The label should have the necessary information for obtaining service. If you need service on the system or you notice the system is not working properly, contact the authorized service representative on the label. Do not attempt to service, altar, repair, or modify the system yourself or use replacement parts or components other than those supplied by an authorized representative.

Service Contracts and Obligations

A service contract may be required on your Wastewater Treatment System. This contract typically required 3 to 4 inspections per year depending on your local regulating authority. Inspections typically cover general operation of system; then is reported to homeowner and the regulating authority. In the event that this report recommends or states anything that is needed for repair call you installer or maintainer immediately.

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Always hire a competent maintenance provider or installer such as B& J Wakefield Services, Inc. Here are just a few ways to help find a competent maintenance provider:

- Call or go online and check out their listing with the Better Business Bureau or Angie's List.
- Check with their website. If it sounds too good to be true such as lifetime warranties for free, we will take care of your chlorine at no cost (chlorine is a weekly chore if applicable), or a price that is cheaper than the average contract then stay away. They will not provide you a good service.
- Ask you neighbors who they use and what they think about their maintenance provider.
- Ask your local regulating authority (they cannot recommend but you can ask questions).
- Call and interview your maintenance provider. Ask them questions off of this manual and check their knowledge. If they don't want to give you their time and they do not offer to provide information on proper usage of your system then they probably are not going to provide you with the services that you deserve.
- If your maintenance provider offers multiple plans choose the one that fits your lifestyle. Typically the maintenance providers that offer one style of plan have the attitude of "take or leave it this is what you get". We believe that if you are the one that is paying for the maintenance you should be the one that chooses what you want.
- Be aware of some scare tactics or deception. Some maintenance providers will send out contracts instead of advertisement to make you believe that they were your previous maintenance provider or as if they have taken over the previous maintenance providers business. The wording is just good enough to make you believe this. Typically this is the first mail out you get do to they are trying to trick you into signing. <u>Know when your contract expires with your current maintenance provider.</u> You typically have 30 days before your current maintenance contract expires to obtain a new one. As long as you have a contract in place before your current contract expires; you will not get into trouble. If you begin to see advertising contact your current maintenance provider immediately if you were planning on using them again. This means your current contract is coming up for renewal in the near future.
- If your service provider is not letting you know there is a problem and turning their head to the issue it may be time for a new maintenance provider. Their job is to let you know of any issues to protect you and the environment. Don't get mad at the service technicians for writing up any violations they are just doing their job. If you notice that your service company misses something give them the benefit of the doubt. They are only human and do make mistakes. Call them immediately of any issues that concern you. A good maintenance company will listen and make it right.
- You should have a service tag on your box that is marked every time the service company is at your location and receive a document of some sort showing any issues on your septic system. If you have not noticed this being done call your service company immediately.

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Common styles of Treatment Plants and disposal methods.