OxyPro 1000C-G

Owners Manual

This product has been tested and is listed under NSF/ANSI Standard 40 and is hereby certified as a Class I Aerobic Wastewater Treatment Plant.

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INTRODUCTION

Thank you for choosing the OxyPro Advanced Wastewater Treatment System to address your wastewater needs. Aeration Systems has made every attempt to design and build a high quality, efficient, and dependable product. This system was tested and is Listed under NSF / ANSI Standard 40.

In this Owners Manual you will find useful information about how your OxyPro treatment unit operates. There is also important information on the need for periodic inspections and maintenance. Please take the time to read over all this material. Do not hesitate to call Aeration Systems with any questions you might have about your OxyPro treatment unit or your septic system in general.

OPERATING CONDITIONS

The OxyPro 1000 Advanced Wastewater Treatment System is designed to treat wastewater produced by typical family activities in homes ranging from one to five bedrooms. Other OxyPro models are available to treat flows from restaurants, apartment buildings, community sewers, and other producers of wastewater.

GENERAL PROCESS DESCRIPTION

Septic Tank

Wastewater from the house flows into a septic tank, sized according to State Code. In the septic tank settling occurs with the formation of sludge and scum. Clarified wastewater flows through a filter and into the OxyPro tank.

Aeration Treatment Unit - OxyPro

In the OxyPro tank the wastewater is aerated using a high-efficiency, low-pressure blower and a bubble diffuser. The diffuser allows oxygen transfer and mixing of organic rich wastewater and oxygen. The aeration promotes the growth of aerobic microorganisms which convert and remove biodegradable organic matter. (The organics removed by the aerobic process are the constituents that are measured in the BOD_5 analysis).

To increase contact time the OxyPro treatment unit utilizes a biomedia in the aerobic sections. This plastic media is used to supply a support structure for the establishment of microorganisms and is specifically developed for optimal biological growth. The main advantage is that the microorganisms are attached to the media and do not get flushed out at high input flow rates. The biomedia also enhances the nitrification process, which requires a larger population of organisms due to the lower metabolic rate of the nitrifying bacteria.

The aerobically treated wastewater, which is now high in nitrates but low in carbon, flows into the second chamber of the system, where clarification and settling of the suspended solids take place. The clean water in the clarification chamber rises to the top and flows or is pumped out to a disposal area.

To promote denitrification and to remove the accumulated biomass, the wastewater is recirculated from the clarifying chamber back to the septic tank. Denitrification is facilitated by this recirculation because the bacteria in the septic tank use the oxygen from the nitrate molecule with nitrogen being released as gas. Removing the accumulated biomass also helps to ensure optimum clarifier performance resulting in an effluent with low suspended solids. The recirculation process also benefits the system in times of low loading such as vacation periods or during the night. When the water is recirculated, it carries nutrients from the septic tank into the OxyPro treatment unit.

The OxyPro treatment unit is controlled by a computer system. The computer runs the pumps and alarm. The computer can also be connected through the telephone to a monitoring facility to eliminate the need for an alarm on-site.

OXYPRO COMPONENTS

The OxyPro system comprises two major components. These are 1) the OxyPro processor tank, and 2) the OxyPro blower and control cabinet.

INTRODUCING SUBSTANCES INTO THE TREATMENT SYSTEM

Your septic tank, OxyPro treatment unit, and disposal field are all designed to treat wastewater of a quantity and quality consistent with typical household activities. Listed on the next page are some substances which should **not** be introduced into the system or which should be used in moderation.

PROHIBITED OR LIMITED DISPOSAL PRACTICES

1) Grease and oil used in cooking should be scraped or poured out of the pan and disposed of in the trash before washing the pan.

2) The garbage disposal should be used only for small amounts of loose vegetables found in the sink. Large portions of vegetable waste should be disposed of in the trash. A septic tank filter is recommended if a garbage disposal is used.

3) If a strainer is used in the kitchen sink, grease on pans is kept to a minimum, and traps are cleaned periodically of hair in the bathrooms, then drain cleaners, which may harm the septic system, can usually be avoided.

4) People with hobbies such as photography or electroplating should not dispose of those chemical wastes in the house drain system.

5) If anyone in the house is using penicillin or other antibiotics, do not dispose of any of the medicine into the septic system as it may kill essential bacteria.

6) Any product high in chlorine or any other antibacterial agent should be used in small quantities since it may reduce the population of bacteria in the system.

7) The toilet should not be used to dispose of towels, sanitary napkins, newspapers, rags, sticks or any material of this nature.

8) If you are using the septic system in moderation then products that claim to be aids to septic tank function should not be needed.

9) No solvents, paints, or pesticides should be disposed of in the house drain system.

10) Your OxyPro treatment unit and the rest of your septic system are designed to handle a certain amount of wastewater every day. This maximum flow is usually significantly greater than that produced by average households. Continual high volume water use may decrease the treatment efficiency of your OxyPro treatment unit and will stress your disposal field, affecting its longevity.

11) Remove sludge and scum from the septic tank regularly (generally every three to five years) to prevent solid particles from entering the leach field and clogging the pipes and soil.

12) Normal household chemicals (soap, detergent, and drain cleaners) and other kitchen wastes (grease, oil, and ground garbage) should not have a noticeable short term, adverse effect on your septic system if they are used in moderation.

13) Toilet tank tablets that contain antibacterial agents should not be used.

14) Toilet bowl cleaners should not be used more than once a week.

15) Water treatment systems, such as water softeners, should not back-flush into the septic tank.

16) An inspection of your OxyPro treatment unit every year will alert you to any developing problems with the system.

SYSTEM MAINTENANCE AND MONITORING

The OxyPro Advanced Wastewater Treatment System operates automatically. The only maintenance required from the homeowner is that the air intake for the compressor (if required), be kept clear of dirt, leaves, drifting snow, ice, and other debris. The owner is responsible for monitoring the status of the alarm signal located on the control cabinet and ensuring that the septic tank is regularly emptied of solids at an appropriate interval (at least once every three years, depending on use). Septic tank pumping is the owner's responsibility.

INITIAL SERVICE POLICY

The Initial Service Policy will consist of a visual inspection of the system to make sure that the processor is operating properly. The following will be checked.

- Color — The water in the clarifier should be relatively clear or have a slight tannic color.
- Turbidity — The water in the aeration compartment should have a relatively high turbidity with small and large floating bacteria particles. The water in the upper portion of the clarifying compartment should have little to no floating particles.
- Scum overflow — There should be some brown growth on the clarifying surfaces, but there should be no scum overflow.
- Odor — The water will have a slight musty odor, but no rotten egg odor should be present.

Your OxyPro treatment unit is supplied with a two-year service contract which includes at least two service and inspection visits by a certified service technician each year. During service visits, each component of the treatment unit will be checked for proper operation. Effluent quality will also be checked either quantitatively or qualitatively to ensure optimal system performance. Please call to schedule an inspection visit with one of our technicians.

Extended annual service policies are available from Aeration Systems. Your OxyPro treatment unit has been designed and constructed with durability and ease of operation as top priorities. By following the instructions contained in this manual, your treatment unit should provide many years of service with minimal maintenance.

ALARM ACTIVATION

Your OxyPro treatment unit is equipped with an audible and visual alarm that will indicate failure of the air blower or blockage of the air intake. On OxyPro models equipped with an effluent discharge pump the alarm will also activate in the event of a high water condition that may cause wastewater to backup or surface. If the alarm should sound, check the air intake for

any signs of a blockage. Do not attempt to access the blower unit or processor tank. These components are designed to be serviced by authorized personnel with protective equipment. Contact Aeration Systems, or a certified service technician, in the event of an alarm.

The audible alarm can be silenced using the "Silence" button switch located on the front of the control cabinet.

ELECTRICAL POWER OUTAGE

Your OxyPro treatment unit will not operate during power outages. Prolonged outages will cause the aerobic bacteria in the processor tank to die from lack of oxygen. Care should be taken to limit water use in the house during outages to minimize the discharge of untreated wastewater to the disposal field. In pumped systems, excessive water use may also cause wastewater to back up into the processor tank and septic tank.
When electrical power returns, the OxyPro treatment unit should resume normal operation. After a short start-up period, the normal population of aerobic bacteria should be naturally reestablished and the system will again produce clear, odorless effluent.

NO USE FOR AN EXTENDED PERIOD

The OxyPro treatment unit can continue to operate normally during periods of no water use, lasting as long as two weeks. Power to the treatment unit should be left on during short periods when there is no water usage. The treatment unit may be shut off to conserve electricity during periods of extended disuse (greater than one month).

The unit must be reactivated when wastewater production is resumed. Failure to reactivate the treatment unit may cause damage to your disposal field. A short start-up period will be required after reactivation to reestablish the population of aerobic microorganisms. After this start-up period the treatment system should again produce clear, odorless effluent.

SPECIFICATIONS

OxyPro System Information

Septic tank size: _____ gallons

OxyPro Model #: _____

Disposal Field Type and Size: _____

Effluent Distribution: Gravity □ Pressure □

Number of Bedrooms: _____

Rating: _____ (gallons per day)

Installer: _____

Plumber: _____

Electrician: _____

Site Evaluator: _____

Power Requirements:	Gravity Model 120 Volts AC, 60HZ, 10.0A Pumped Model 120VoltsAC, 60Hz, 15.0A Drip Irrigation Model 240VAC, 60Hz, 20.0A
Processor Tank Volume:	OxyPro 1000 - 1,000 gallons OxyPro 1500 - 1,500 gallons
Waste Pump:	Goulds LSP03
Air Compressor:	HiBlow Linear Diaphragm HP-80 (or equivalent)
Control Panel:	Direct Logic PLC Custom Control Panel,120VAC, 60HZ
Air Pressure Alarm Sensor:	Florida Pneumatic Logic Micro-Pressure switch
Float Switches:	Connery Manufacturing Narrow Angle, Normally Open

LIMITED WARRANTY

Aeration Systems warrants the parts in each treatment process/system to be free from defects in material and workmanship for a period of two years from the date of installation treating residential wastewater. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply. Sole obligation under this warranty is as follows:

Aeration Systems will fulfill this warranty by repairing or exchanging any component part, F.O.B. factory, that in Aeration Systems' judgment shows evidence of defects, provided said component part has been paid for and is returned through an authorized dealer, transportation prepaid. The warranty must also specify the nature of the defect to the manufacturer.

The warranty does not cover treatment processes/systems that have been flooded, by external means, or that has been disassembled by unauthorized persons, improperly installed, subjected to external damage or damage due to altered or improper wiring or overload protection.

This warranty applies only to the treatment process/system and does not include any of the residential wiring, plumbing, drainage, or disposal system. Aeration Systems is not responsible for any delay or damages caused by defective components or material, or for loss incurred because of interruption of service, or for any other special or consequential damages or incidental expenses arising from the manufacture, sale, or use of this process/system.

Aeration Systems reserves the right to revise, change, or modify the construction and design of the treatment process/system for residential wastewater or any component part or parts thereof without incurring any obligation to make such changes for modifications in previously sold equipment. Aeration Systems also reserves the right, in making replacements of component parts under this warranty, to furnish a component part which, in its judgment, is equivalent to the company part replaced.

Under no circumstances will Aeration Systems be responsible to the warranty for any other direct or consequential damages, including but not limited to lost profits, lost income, labor charges, delays in production, and/or idle production, which result from defects in material and/or workmanship of the system. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you.

This warranty is expressly in lieu of any other expressed or implied warranty, excluding any warranty of merchantability or fitness, and of any other obligation on the part of Aeration Systems.

This warranty gives you specific legal rights. You may also have other rights, which vary from state to state.