

ENVIRONMENTAL HEALTH



HOMEOWNERS GUIDE TO ONSITE SEWAGE SYSTEMS



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HEALTH DISTRICT

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INTRODUCTION

The intent of this booklet is to provide homeowners with basic information pertaining to onsite sewage systems; what they are, how they work, and how to take proper care of them.

If after reading through this booklet you have questions or want more detailed information, please contact the Kitsap Public Health District (KPHD) at (360) 728-2235, send us a note or come by and see us at 345 6th Street, Suite 300, Bremerton, Washington, 98337.

Protect your property investment, protect the environment, take good care of your onsite sewage system!

Developed by:
Kitsap Public Health District

Contributions include excerpts from:
“A Homeowner’s Guide to Septic Systems”
United States Environmental Protection Agency



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WHAT IS AN ONSITE SEWAGE SYSTEM

An onsite sewage system (OSS) is also known as a septic system. OSS are designed to help prevent the spread of illness and disease by collecting, treating and dispersing wastewater from a home or business into the native soils near a home or business.

An OSS is typically made up of two or more components, or pieces, linked together with pipes. There are two general types of OSS available for use in Washington State; the unique site conditions for each individual lot (e.g., soil type and depth, size of lot, distance to surface waters and wells, etc.) determine which type of OSS can be installed. Different combinations of components may be used to best suit site conditions and owner preferences.

GENERAL TYPES OF OSS

Standard Gravity OSS

This is the most common type of system, and it generally has two main parts identified as the septic tank & drainfield (see page 5-6).

Sometimes, a pump tank is also used in a standard system to transport the effluent to a drainfield above the septic tank.

Standard systems are required to be inspected at least once every 3 years.

Alternative OSS

This type of system is required by state law where soil depth and/or other site conditions do not allow a standard gravity system to be used. In Kitsap County, alternative OSS are required to have annual monitoring & maintenance (M&M) (see page 13), and be inspected at least once per year.

Pages 7-11 refer to some of the most common types of alternative systems.

HOW DOES IT ALL WORK?

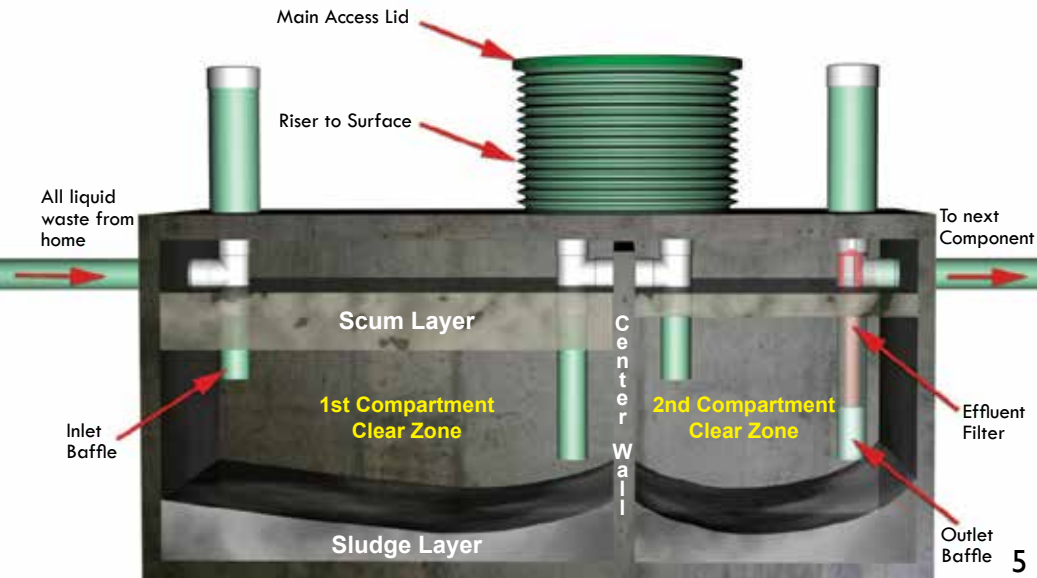
THE SEPTIC TANK

Typically, the septic tank is a large, buried, rectangular or cylindrical container made of concrete, fiberglass, or polyethylene. Standard sizes range from 1,000 to 1,500 gallons.

In Washington State, septic tanks are required to have two compartments, with access lids to each compartment for servicing and pumping.

For most types of OSS, the septic tank is the core component. All of the wastewater from a home or business is routed to the septic tank for primary treatment. Primary treatment is a filtering process whereby heavy solids are allowed to settle-out, and floating solids are trapped, due to baffles situated at the entrance and exit to each compartment of the septic tank.

The result is clarified effluent that is more easily absorbed by native soils in the drainfield area. Adequate primary treatment is essential to protect drainfields and allow them to function properly.



HOW DOES IT ALL WORK?

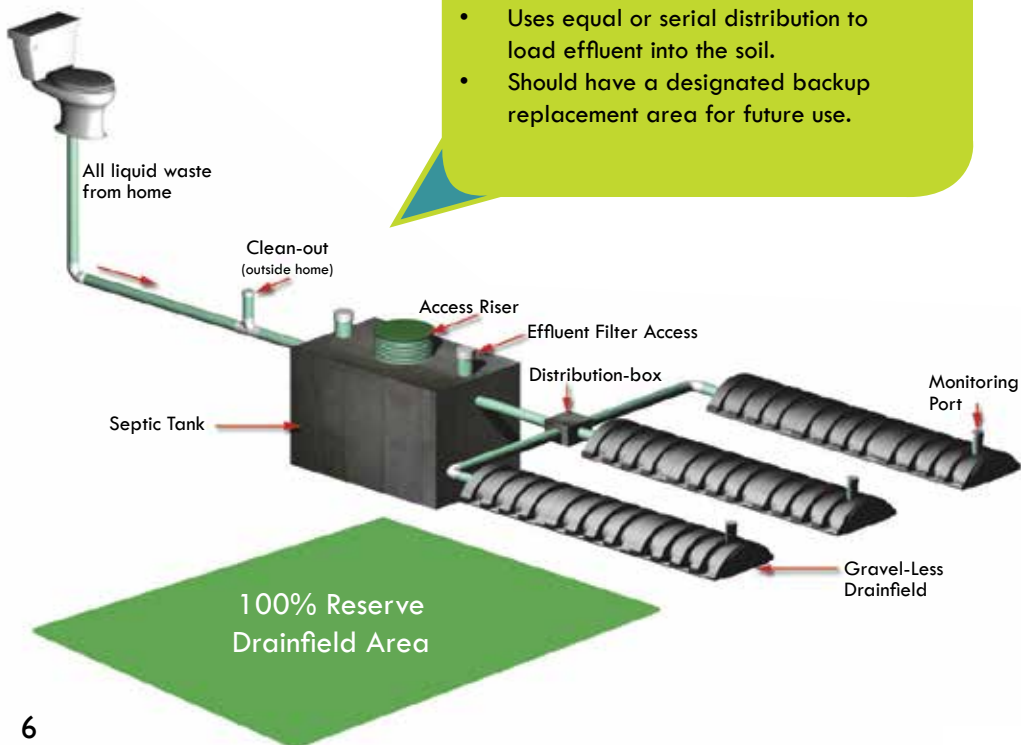
Gravity Drainfields

Gravity Drainfields are an onsite sewage system component made up of a network of pipes and/or other materials placed in trenches to distribute effluent into the soil. All OSS have some type of soil dispersal component.

The size and type of the drainfield depends upon the estimated daily wastewater quantity and soil type.

Gravity Distribution

- Provides final treatment and dispersal of effluent within native soils.
- Relies on unsaturated and uncompacted soils to function properly.
- Trenches are installed level and run parallel to the natural contours of the land.
- Uses equal or serial distribution to load effluent into the soil.
- Should have a designated backup replacement area for future use.



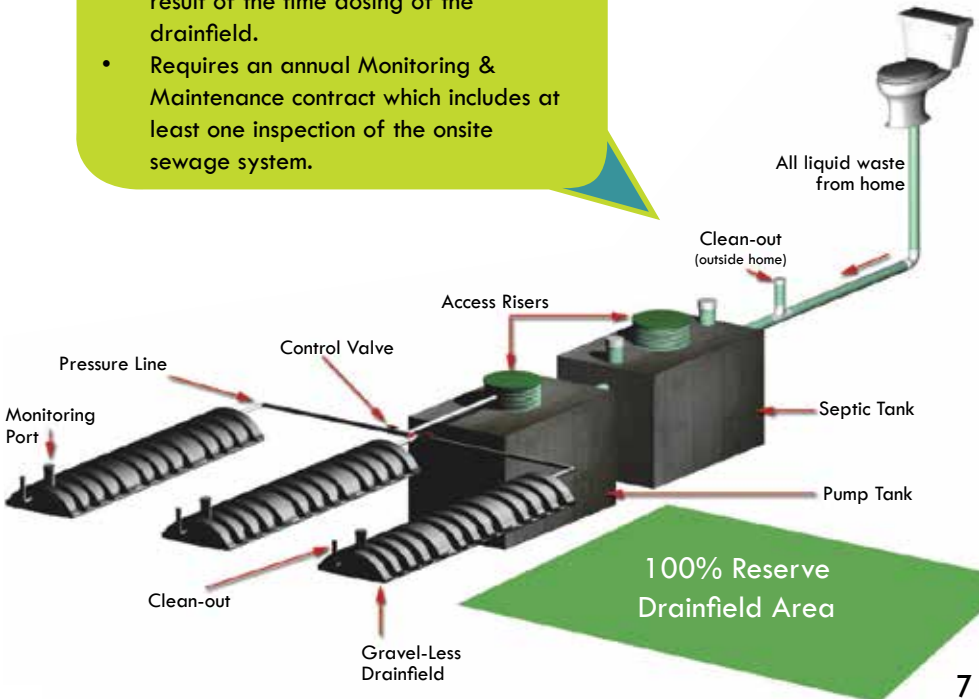
HOW DOES IT ALL WORK?

Pressure Distribution Drainfields

Pressure Distribution Systems consist of a septic tank, pump tank and drainfield. The pump tank contains a pump, pump control floats and a high water alarm float. Pressure distribution systems rely on a pump to distribute effluent evenly through pressurized lines rather than just gravity, so the effluent is dispersed over the entire drainfield each time the pump runs.

Pressure Distribution

- Time dosed effluent distribution to the entire drainfield area.
- Provides a higher level of treatment to effluent, as compared to a standard gravity OSS.
- Protects the drainfield from being overused (high water use) as a result of the time dosing of the drainfield.
- Requires an annual Monitoring & Maintenance contract which includes at least one inspection of the onsite sewage system.



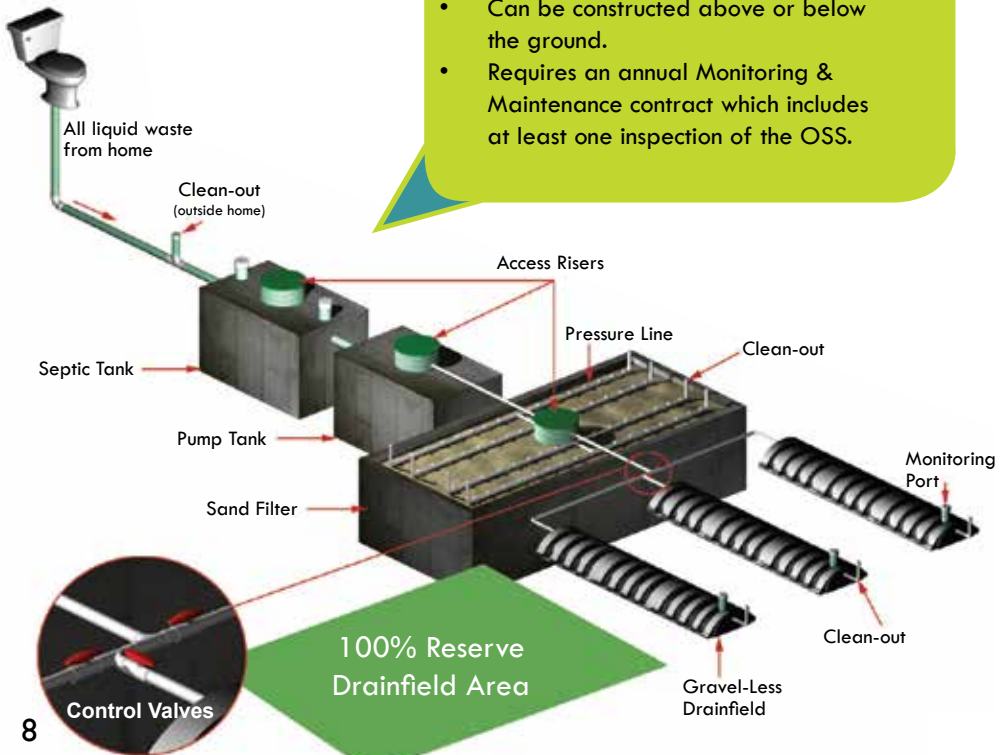
HOW DOES IT ALL WORK?

Sand Based Media Treatment

Sand Based Media Treatment Systems consist of a septic tank, pump tank, sand filter and drainfield (or sand-lined trenches). Sand filter OSS use pressure distribution technology through special sand to achieve a very high level of effluent treatment, before effluent is distributed to the drainfield.

Sand Based Treatment

- Typically used where site conditions require a higher level of effluent treatment to protect wells, surface water or shallow ground waters.
- Promotes an oxygen rich environment for enhanced treatment of sewage.
- Can be constructed above or below the ground.
- Requires an annual Monitoring & Maintenance contract which includes at least one inspection of the OSS.



HOW DOES IT ALL WORK?

Aerobic Treatment Units

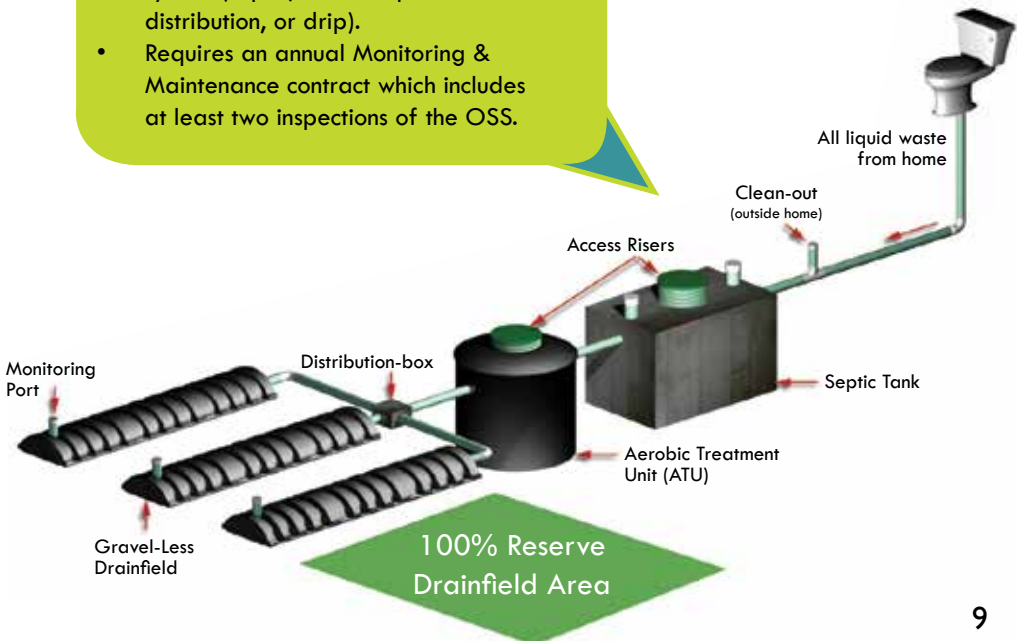
Aerobic Treatment Unit (ATU) Systems also rely on pre-treatment to clean effluent before it is sent to the drainfield.

An ATU OSS consists of an ATU component (there are many kinds) instead of, or in addition to, a septic tank and a drainfield.

Aerobic Treatment Units

- Typically used where site conditions require a higher level of effluent treatment to protect wells, surface water or shallow ground waters.
- Uses air to speed up the normal waste water treatment process.
- May utilize any type of drainfield system (equal, serial or pressure distribution, or drip).
- Requires an annual Monitoring & Maintenance contract which includes at least two inspections of the OSS.

For onsite sewage systems approved after May 1, 2008, it will be common to have a pressure distribution or drip irrigation drainfield following the ATU component.



HOW DOES IT ALL WORK?

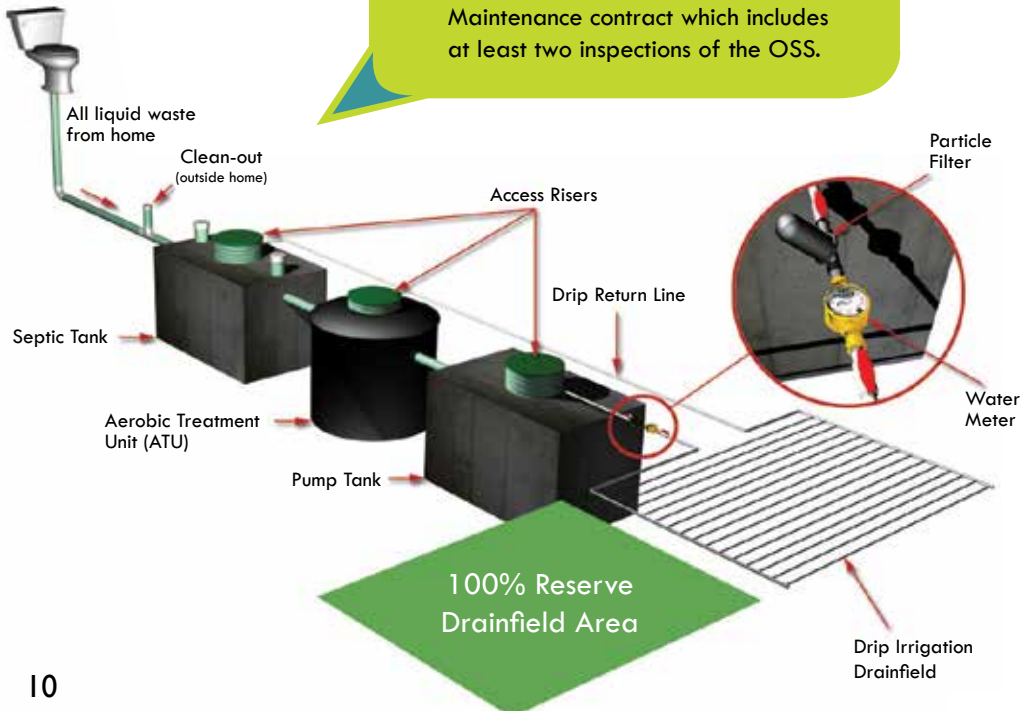
Drip Irrigation

Drip Irrigation Dispersal Systems utilize a series of pressurized drip lines (much like the ones used for plant irrigation) located just below the surface of the ground. Like some of the other alternative OSS, drip irrigation uses pre-treatment, time dosing, and pressure distribution to attain high levels of effluent treatment.

Drip irrigation is ideal for use in shallow soils.

Drip Irrigation

- Best used with ATU or sand filter pre-treatment technologies.
- Can be used in shallow soils.
- Requires less area than the typical drainfield.
- Can be routed around site constraints such as buildings, gardens, etc.
- Requires an annual Monitoring & Maintenance contract which includes at least two inspections of the OSS.



HOW DOES IT ALL WORK?

Other Technologies

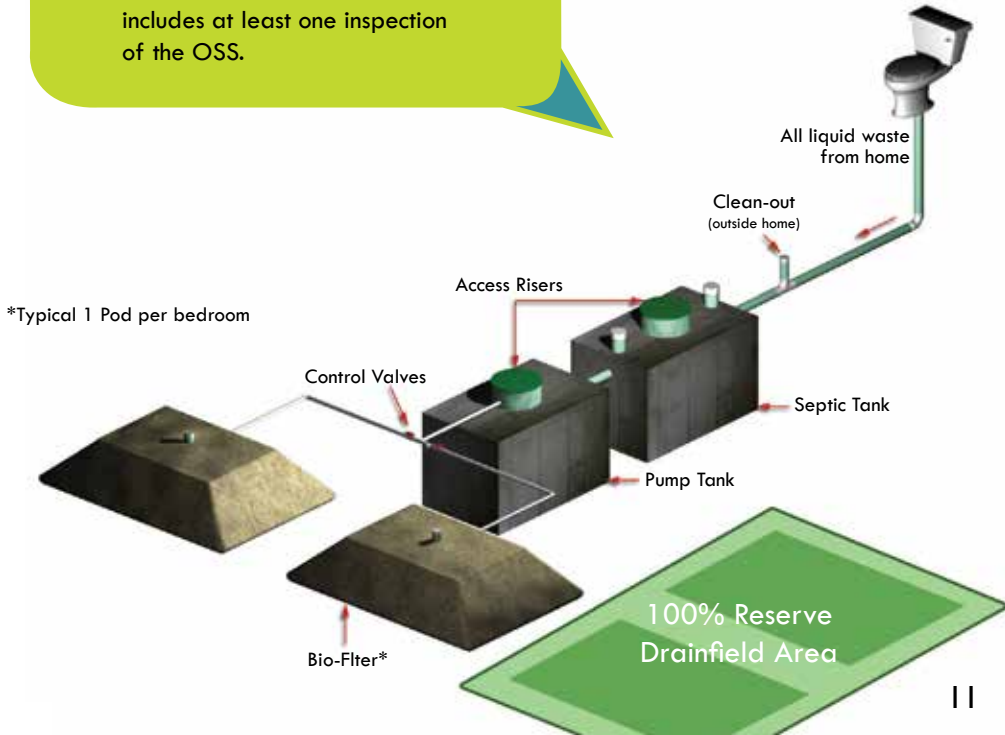
There are many new and emerging OSS technologies becoming available to help property owners mesh regulatory requirements, site conditions, and budgets.

A common treatment and disposal technology found in Kitsap County is the Bio-Filter System. It consists of a septic tank, pump tank, and a “containerized” drainfield system.

This OSS treats the effluent before final dispersal in the surrounding soil. Time dosing is utilized like pressure distribution and sand filters.

Bio-Filters

- Provides high level of effluent treatment.
- Can be installed in shallow soil.
- Requires an annual Monitoring & Maintenance contract which includes at least one inspection of the OSS.



HOW DO I MAINTAIN MY ONSITE SEWAGE SYSTEM?

SEPTIC TANKS

Septic tanks need to be inspected at least every 3 years and pumped as needed to prevent solids from damaging the drainfield. Solids and scum not decomposed remain in the tank. If not removed, solids or scum may eventually overflow into the drainfield and damage it.

Additive products are not necessary and may harm the system.

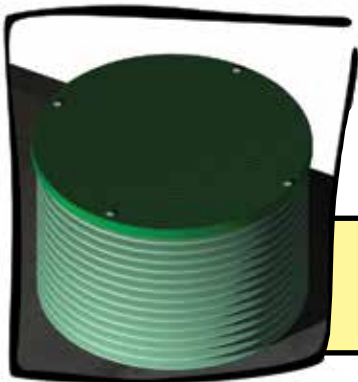
Access to the tank is important for regular pumping & maintenance. For easy access a riser* is recommended and is required on some systems.

Replacing your system is very costly.

Extend the life of your Onsite Sewage System!

DRAINFIELDS

- Route or direct surface and ground water away from the system to prevent flooding.
- Limit use of chemicals and garbage disposals.



- Prevent physical damage from driving, parking, building, burning, livestock pasturing and sprinkler systems.

* A riser provides surface access to tanks buried below the surface by providing access to the tank as an extension of the opening.

MONITORING & MAINTENANCE

Alternative Onsite Sewage Systems

Alternative OSS require an Monitoring & Maintenance (M&M) contract which includes at least one inspection of the OSS per year by a certified maintenance service provider.

What is the Operation & Maintenance Program About?

This program is a state and locally mandated program created to keep your OSS working properly and surrounding environment healthy. This regulation benefits OSS owners by:

- Protecting your property investment from premature failure. Your OSS is a critical part of your home.
- Saving you money: replacing a failed OSS can cost tens of thousands of dollars.
- Protecting your family, environment and community from raw sewage spills.
- Providing you assurance: much like a yearly health check-up or car maintenance, both essential to our everyday needs.



Effluent filters must be cleaned annually at a minimum to prevent costly and unhealthy backups into the home.

Effluent filters may be found on both standard gravity and alternative onsite sewage systems.

The M&M contract and inspection program promotes regular maintenance of your OSS and provides educational opportunities.

PROTECTING YOUR ONSITE SEWAGE SYSTEM

WATCH WHAT GOES DOWN THE DRAIN

- Keep grease, hair, and food scraps from going down the drain.
- Don't flush diapers, plastics, paper towels, cigarettes, personal hygiene products or kitty litter down the toilet.
- Don't use a garbage disposal.
- Don't use automatic toilet bowl cleaner or deodorizers.
- Don't use excessive strong drain cleaners. or other chemicals.

USE CONCENTRATED LIQUID DETERGENTS

- Do not overuse detergents.
- Minimize use of liquid fabric softeners or use dryer sheets instead.
- Fillers in some powdered detergents can clog pipes.

DON'T DROWN THE DRAINFIELD

- Fix leaky fixtures and toilets.
- Conserve water.
- Spread out laundry throughout the week - try to do no more than two loads in one day.
- Divert surface waters and downspouts away from the drainfield.

KNOW WHERE YOU STAND

- Find out where the on-site sewage system is located so that you can avoid driving, digging, or parking on it.
- Look up your septic records online at:
<http://www.kitsappublichealth.org/propertyrecords>.

CLEAN OUT ACCESS

- Located between the house and tank (capped pipe). It is available for unblocking a clogged line.

DON'T POISON THE SYSTEM

- Never pour products labeled "danger" or "poison" down the drain. Take unwanted hazardous products to the Moderate Risk Waste Facility (360) 337-5777.
- Minimize use of strong chemicals like bleach and drain cleaners.



ACCESSIBILITY & LANDSCAPING

Easy access to OSS components

- Know it's location.
- Retrofit older systems with risers for easier access.
- Use moveable markers (such as: planters, benches, sculptures) to cover system ports that need regular inspection.
- Keep your as-built handy.
Look up your septic records at:
www.kitsappublichealth.org/propertyrecords

Landscaping your OSS

- Planting is recommended to help with oxygenation & evaporation.
- Consider drought resistant plants.
- Choose plants that are non-invasive and are not deep rooting.
- Grasses are recommended.
- Consult with your local nursery, landscaping professional or the Washington State Cooperative Extension Master Gardeners

ADDITIVES AND YOUR ONSITE SEWAGE SYSTEM

Do I need to put additives in my septic system to keep it working properly?

The Kitsap Public Health District and most engineers/sanitation professionals believe that commercial septic system additives are not effective (even potentially harmful) to an onsite sewage system.

The reasons for this include:

- No known additives can reduce solids sufficiently to make pumping unnecessary.
- Household wastewater contains an abundant supply of microorganisms that provide for the proper functioning of your system.
- Some additives cause problems with the drainfield.

If you are currently using an additive and would like more information about approved additives*, please contact KPHD.

** Product approval by the Washington Department of Health merely indicates that the ingredients are unlikely to cause harm to public health or water quality. It does not, however, substantiate performance claims made by manufacturers.*



“Additives are costly
and unnecessary.”

ONSITE SEWAGE SYSTEM DO'S & DON'TS

Do

KNOW WHERE YOUR OSS IS LOCATED AND PROTECT IT:

- Have a copy of your as-built or map location of all septic parts. Find records at: www.kitsappublichealth.org/irecordsearch
- Pass along all records & information to new owners or tenants of property.
- Save funds to cover future maintenance or repair costs.
- Educate your family, guests or renters.

INSPECT YOUR OSS YEARLY:

- Keep accurate, detailed records of any repairs & pumping.

USE WATER WISELY:

- Conserve water – use low flow fixtures, spread laundry throughout the week, limit shower length, fix any leaks promptly.
- Direct runoff from roofs, streets, driveways & adjoining properties away from sewage system area.
- Keep any irrigation (sprinkler) system at least 10 feet from the edge of the on-site sewage system.
- Drain water from hot tubs & water softeners away from drainfield, storm drains & surface waters.

Don't

COMPACT SOILS OF DRAINFIELD OR RESERVE AREA IN ANY WAY BY:

- Driving/parking vehicles or heavy equipment (including boats) in the OSS area.

DISTURB THE DRAINFIELD OR RESERVE AREA BY:

- Pasturing livestock, building structures, or burning in the area.
- Covering it with impervious landscaping materials.
- Driving across, grading, leveling, filling or cutting the area.
- Installing a sprinkler system or planting deep-rooted water-loving plants over the drainfield.

OVERLOAD THE SYSTEM BY:

- Using too much water.
- Using a garbage disposal.
- Using tank additives or “miracle” septic system cleaners.
- Discarding medications down the drain.
- Allowing backwash from water softeners or conditioners.
- Pouring strong household cleaning products down the drain.

“You are the key to water quality.”

WARNING SIGNS OF A FAILING ONSITE SEWAGE SYSTEM

- Sewage on the surface of the ground or discharging into surface waters.
- A foul smelling, slimy, blackish/greyish liquid in the drainfield area or out of down-slope pipes or banks.
- Standing/flowing water or soggy soils in drainfield area.
- Greywater (laundry or sink water) discharge to the ground or surface waters.
- Sewage back-up into residence caused by slow soil absorption.



WARNING!

TIPS FOR REPAIRING AN ONSITE SEWAGE SYSTEM

- Repairs require Health District review or permit.
- Consult a repair professional to properly diagnose system failure.
- Don't assume that a total sewage system replacement is needed.
- A certified OSS designer, installer or operation and maintenance contractor is trained to diagnose the problem that caused the failure.
- Pumping a failing system is only a temporary solution. While it may be necessary to have the tank pumped during the repair process, pumping the tank alone will not correct a failing OSS.
- Stay in contact with the Health District.
- Technical assistance is available to help you determine the best solution(s) for your situation.

OTHER OSS RESOURCES

WA State Department of Health

<http://www.doh.wa.gov>

Search for “Wastewater”.

WA State Department of Licensing

<http://www.dol.wa.gov>

To find out if your designer/engineer is licensed to provide design services.

U.S. Environmental Protection Agency

<http://water.epa.gov>

Search for “SepticSmart”

OSS RECORDS

Site Address: _____

Tax Parcel Number: _____

Type of System: _____

System Designer: _____

System Installer: _____

Date Installed: _____

Service History

Date:	Contractor Name/Work Done:



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