Introduction

The intent of this booklet is to provide homeowners with basic information pertaining to onsite septic 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 Spokane Conservation District at (509) 535-7274, email us at oss@sccd.org, or come and visit us at 210 N. Havana, Spokane, WA, 99202.

Protect your property investment, protect the environment by taking good care of your on-site septic system.

Contributions include excerpts from “A Homeowner’s Guide to Onsite Sewage Systems” Kitsap Public Health District
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WHAT IS AN ON-SITE SEPTIC SYSTEM?

An on-site septic system (OSS) is 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, 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 and Drainfield (see page 3)
• Sometimes, a pump tank is also used in a standard system to transport 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 Spokane County, alternative OSS are required to have annual monitoring and maintenance, and be inspected at least once per year. Pages 4-8 refer to some of the most common types of alternative systems.
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.
Gravity Drainfields are an on-site septic 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
Pressure Distribution Systems consist of a septic tank, pump tanks 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 closed 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 and maintenance contract which includes at least one inspection of the on-site sewage system
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 and maintenance contract which includes at least one inspection of the OSS
Aerobic Treatment Unit (ATU) Systems also rely on pre-treatment to clean effluent before it is sent to the drainfield.

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

For on-site septic systems approved after July 1, 2007, it is common to have a pressure distribution or drip irrigation drainfield following the ATU component.

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 oxygen 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 and maintenance contract which includes at least two inspections of the OSS
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 and 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 dispersal technology found in Spokane 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 and maintenance contract which includes at least one inspection of the OSS
HOW DO I MAINTAIN MY ON-SITE SEPTIC SYSTEM?

SEPTIC TANKS
Septic tanks should 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 and maintenance. For easy access, a riser is recommended for all and is required for some systems.

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

Prevent trees and shrubs from growing over the drainfield

- 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.
Alternative On-site Sewage Systems

Alternative OSS require a Monitoring and Maintenance contract which includes at least one inspection of the OSS per year by a certified maintenance service provider.

What is the Operation and 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 on-site septic systems.

Standard gravity systems can be inspected by the homeowner. Check out how at:

www.doh.wa.gov/CommunityandEnvironment/WastewaterManagement/SepticSystem/DoItYourselfInspectionVideo
PROTECTING YOUR ON-SITE SEPTIC 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, baby wipes, cigarettes, personal hygiene products or kitty litter down the toilet
- Minimize the use of a garbage disposal
- Don’t use automatic toilet bowl cleaner or deodorizers
- Don’t use excessively strong drain cleaners or other chemicals

Use Concentrated Liquid Detergents
- Do not use 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-no more than two loads a day
- Divert surface waters and downspouts away from the drainfield

Know Where You Stand
- Find out where the on-site septic system is located so you can avoid driving, digging and parking on it
- Look up your septic records at Spokane Regional Health

Clean Out Access
- Located between the house and tank (capped pipe)-used to unblock a clogged line

Don’t Poison the System
- Never pour products labeled “danger” or “poison” down the drain. Take unwanted hazardous products to the City of Spokane Waste to Energy Facility
- Minimize use of strong chemicals like bleach and drain cleaners
ACCESSIBILITY & LANDSCAPING

Maintain easy access to OSS components
• Know its location
• Retrofit older systems with risers for easier access
• Use moveable markers (such as planters, benches etc) to cover system ports that need regular inspection
• Keep your as-built handy in your home records

Landscaping your OSS
• Planting is recommended to help with oxygenation & evaporation
• Consider drought resistant plants
• Choose plants that are non-invasive and not deep rooting
• Keep trees away from drainfield and its boundary
• Grasses are recommended
• Consult with your local nursery, landscape professional, or WSU Extension Master Gardeners
ADDITIVES AND YOUR ON-SITE SEPTIC SYSTEM

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

The Spokane Conservation District and most engineers/sanitation professionals believe that commercial septic system additives are not effective (even potentially harmful) to an on-site 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 the Spokane Conservation District @ 509-535-7274

* 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.
ON-SITE SEPTIC 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 Spokane Regional Health - (509) 324-1546
• Pass along all records and information to new owners or tenants of property
• Save funds to cover future maintenance or repair costs
• Educate your family, guests, or renters about how to protect your system

INSPECT YOUR OSS YEARLY:
• Keep accurate, detailed records of any repairs and pumping

USE WATER WISELY
• Conserve water - use low flow fixtures, spread laundry use throughout the week, limit shower length, fix any leaks promptly
• Direct runoff from roofs, streets, and driveways & adjoining properties away from drainfield
• Keep any irrigation (sprinkler) system at least 10 feet from the edge of the on-site septic system
• Drain water from hot tubs and water softeners away from drainfield, storm drains and 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 or near edges

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 ON-SITE SEPTIC SYSTEM

• Sewage on the surface of the ground or discharging into surface waters

• A foul smelling, slimy 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
TIPS FOR REPAIRING AN ON-SITE SEPTIC SYSTEM

• Repairs require Heath District review or permit

• Consult a septic 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 and will not alone correct a failing OSS

• Contact the Spokane Regional Health Department

• Technical assistance is available to help you determine the best solutions(s) for your situation
SPOKANE CONSERVATION DISTRICT’S OSS PROGRAM

We can help you...
• Repair or Replace a failing septic system
• Connect to a sewer line

How to Apply for Financial Assistance for my OSS
• Get your loan packet at www.spokanesepticloans.org or by calling 509-535-7274
• Fill out loan packet, call or email loan officer Barry Tee if you have questions. (barry-tee@sccd.org)
• Get 3 bids for the project
• Turn in the completed loan packet: financial applications, verification of income, and 3 bids

www.spokanesepticloans.org
509-535-7274
ADDITIONAL OSS RESOURCES

Washington State Department of Health
www.doh.wa.gov
Search for “Wastewater”

Washington State Department of Licensing
www.dol.wa.gov
To find out if your designer/engineer is licensed to provide design services

U.S. Environmental Protection Agency
water.epa.gov
Search for “SepticSmart”

Spokane Regional Health District
www.srhd.org (509) 324-1464