

Greetings from the President!!!



As DOWRA celebrates its 10th year in existence, what an exciting time to become President. It is with great honor and privilege to serve all of you in the organization, and please know that it doesn't come without the support of a great Board of Directors and members like you. Since DOWRA's conception we have always prided ourselves in working to educate the members and public about the benefits of quality on-site wastewater treatment and disposal systems, and to get more involvement. We also pride ourselves in being a voice for the industry, and strive to find new ways to do this. After coming off one of its most successful years to date, we have proven that DOWRA has arrived and it is an organization that is going to continue to grow and produce. We now are one of the largest NOWRA state affiliates, in which our members number over 300! We are currently comprised of individuals from all sectors including regulators, installers, soil scientist, engineers, manufacturers, operators and educators.

As President, I want to continue to develop and expand DOWRA's main goal of expanding industry wide education. With that said, this is going to be another busy year for all of us. At our January board meeting the Del Tech Training Center activity committee was formed in order to work hand and hand with Delaware Technical and Community College to develop training classes for the on-site wastewater training center, as well as voice the needs of the industry. DOWRA is also assisting with Del Tech and DNREC in searching for donations on treatment units and systems for the on-site lab. The DOWRA/DNREC partnership committee is also going to be very busy working with DNREC to get acquainted with their management staff; review the roles and improvements of the Class H System Inspectors; and provide a voice to the proposed Innovative and Alternative Operation and Maintenance Guidelines.

Our education involvement doesn't stop there. We scheduled two (2) peat biofilter training classes for January 31st and February 1st for installers and designers. A third training class demonstrating the correct techniques for pumping Biomicrobics FAST units for waste haulers is currently in development. We are also looking to host our biggest conference this year by providing you with national, regional and local presenters and expanding our exhibitor list to bring you the latest and greatest in our field. DOWRA will also be represented at this years Rural Water Conference and possibly at this years State Fair!

Our goals just don't stop with education. We are also looking at expanding our member benefits. This year DOWRA has created a membership directory in which information was mailed out with your annual membership renewal this year. This directory will showcase all business cards if provided, and all members with their respective contacts. This directory will be available to local businesses and at all DOWRA events. As a member of DOWRA you are also a member of the National Onsite Wastewater Recycling Association (NOWRA) which has the following new membership benefits available to you effective January 2006.

- NOWRA Member Septic Locator
- Small Business Health Insurance Program
- NOWRA Discount on Supplies at Office Depot
- NOWRA 2006 Business Benefit Program

Linda Hanifin Bonner, executive director of NOWRA will be at the March 14th board of directors/membership meeting to explain the above and to answer any questions you may have. A mail out on the above information will be completed in the upcoming weeks.

Just think, these are just the highlights of what we are currently working on. At this time I again would like to thank everyone for their continued support and involvement within the organization. If anyone out there would like to get involved or has issues that need to be discussed, please contact any one of the board members or myself. We are always happy to hear new ideas and your thoughts.

By Hilary Moore
President of DOWRA



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Delaware On-Site Wastewater Recycling Association

2006 DOWRA Board Members

| | | |
|---------------------|-----------------|----------------|
| President | Hilary Moore | (302) 739-9948 |
| Vice President | Ken Walsh | (302) 436-8822 |
| Secretary | Carol Ohm | (302) 994-1900 |
| Treasurer | Brian Carbaugh | (302) 736-5245 |
| Installer | Mike White | (302) 629-4848 |
| Manufacturer | Eric Valentine | (800) 345-3132 |
| Pumper | Wayne Hudson | (302) 684-4723 |
| Soil Scientist | Jack Hayes | (302) 739-9948 |
| Operator | Sam Schlegel | (302) 945-0196 |
| Supplier/Wholesaler | Kevin Sockriter | (302) 349-5528 |
| VIP | Niki Evans | (302) 430-0284 |
| Past President | Carol Evans | (302) 398-4951 |

DOWRA Towel Saves Life

Submitted by Niki Evans

Dr. Phil Snow and some friends decided to enter a fishing contest in the Indian River Outlet. He and his friends dropped anchor in one spot and let the boat drift as they fished. When they thought they had drifted enough they would turn on the engine and drive the boat over to where the anchor was set and start all over again. Little did he know that the next time he would try to turn on the engine, it would not start. The battery had died, which left no radio for them to call the Coast Guard for help. They tried yelling to near by boats, but it was to no help. After trying almost everything they could think of, Dr. Phil Snow found his white DOWRA golf towel that was handed out at last years conference. He hooked the towel to the end of a fishing rod and waved it in the air. Shortly after doing this a near by boat saw it and came to their aid. Dr. Phil Snow said "If it was not for the DOWRA towel I would have been stuck six or so miles off shore forever", so the DOWRA towel in turn saved his life.



DOWRA has a Group on the WEB

Submitted by Brian Carbaugh

In addition to our web page, DOWRA now has a YAHOO Group. If you're not familiar with YAHOO Groups, it is an interactive group presence for the Internet. The DOWRA YAHOO Group allows all DOWRA members who join to communicate with each other. It also provides a place for DOWRA to post important documents like our by-laws, policies, meeting notices, Conference registration forms and even copies of our newsletter. It also is a place to post some less important but more interesting things like photos of our fun events.

The DOWRA YAHOO Group also will keep our calendar and sent out reminders to members about upcoming events and meeting dates. It has a chat room where we can schedule on-line meetings to discuss important topics and a polling function that will allow us to poll our members to get their opinions on the issues that affect our industry.

Have we peaked your interest? Are you ready to join DOWRA's YAHOO Group? Good...because it is easy.

Go to Yahoo.com, and in the content section near the middle of the page click on "Groups". In the "Find a Group" box type in DOWRA and click "search". Your search should yield two (2) results, one of which is for The Delaware On-Site Wastewater Recycling Association. Click on that...it is our DOWRA Group.

Once you reach our DOWRA Group, the last thing you need to do is join. Click on the Blue "Join This Group" button above the DOWRA logo and follow the instructions. If you don't already have one, you will need to set up a YAHOO ID and Password. Keep these simple since you will need them again in the future to get on to the Group page.

Once you have joined, please leave us a message to let us know you are here. We look forward to having you.

If you have any questions about the group you can email Brian Carbaugh at wwes@dmv.com.



DNREC to Implement Mandatory Operation and Maintenance on all Innovative and Alternative Treatment & Disposal Systems

Submitted by Hilary Moore

As many of you know, the Ground Water Discharges Section (GWDS) of the Department of Natural Resources and Environmental Control (DNREC) currently does not require innovative and alternative treatment and disposal systems (IA) to have mandatory operation and maintenance contracts on them. The success of these systems, to date, has relied on the homeowner's efforts to provide proper management, and the Department's efforts to provide oversight through triennial compliance inspections. Both of which have proven unsuccessful, combining for a 33% problematic rate for all installed IA systems.

In an effort to ensure proper system performance, the GWDS is in the process of establishing operation and maintenance guidelines that will require all newly permitted IA system owners to maintain service contracts for the life of the system, as conditioned by the permit conditions. This guideline will be established under the existing Regulations Governing the Design, Installation, and Operation of On-Site Wastewater Treatment and Disposal Systems, Section 8.0600 which states "The Department may impose specific operation and maintenance requirements for on-site wastewater treatment and disposal systems to assure continuity of performance."

In an attempt to develop the most beneficial guideline for all parties involved, the GWDS formed an Innovative & Alternative O&M guideline committee which consisted of regulators, developers, manufacturers, engineers, and contractors to review and comment on the document. The GWDS also conducted a mail out to all innovative and alternative treatment unit and system manufacturers and suppliers as well as designers. Currently the committee has met twice to review the comments and amend the guideline. To date the draft guideline is as follows:

Innovative and Alternative On-Site Wastewater Treatment and Disposal Systems Operation & Maintenance Draft Guideline- December 7, 2005

Purpose: This guideline is intended for all Innovative and Alternative On-Site Wastewater Treatment and Disposal Systems < 2500 gallons per day.

Overview: Innovative and Alternative (IA) on-site wastewater treatment and disposal systems are classified as anything other than conventional systems. These systems include but are not limited to advanced treatment units, peat biofilters, drip dispersal or a combination thereof. In order to ensure the proper operation and maintenance of IA systems, the Department will require the permittee through permit conditions to maintain service contracts with certified service providers for the life of the system.

Definition: For the purpose of this guideline, a certified service provider shall be defined as the following:

1. An individual representative of a manufacturer/supplier manufacturer who holds a DNREC Class E System Contractor or Class H System Inspector license, or
2. A Class E System Contractor who is certified, through DNREC approved training, on the operation and maintenance of the advanced treatment unit or system, or
3. A Class H System Inspector who has become certified through DNREC approved training on the operation and maintenance of the advanced treatment unit or system, or
4. A Homeowner who has obtained DNREC individual home service provider certification and has been certified through DNREC approved training on the operation and maintenance of the advanced treatment unit or system. The DNREC homeowner certification allows the homeowner to operate and maintain their I & A system at their primary place of residence only.

Operation and Maintenance Guideline Permit Conditions

1. Prior to the Department granting a Certificate of Completion, the permittee must enter into a service contract with a certified service provider initially, for a minimum of two (2) years starting at the onset of initial system operation. Specifically the service contract shall prescribe an Inspection Program and Homeowner Training Program as outlined below:
 - a. **Inspection Program.** The inspection program shall include a schedule for the frequency of inspections; objective(s) of the inspections; inspection details; operation and maintenance activities necessary; sampling if required; and record keeping requirements.
 - i. **Inspection Frequency/Objective:** The service contract must outline that the certified service provider is to inspect the system once every six (6) months, or annually as a minimum as approved by the Department.
 - ii. **Inspection Records:** The contract must outline that the certified service provider must document all inspections. Operation inspection reports shall indicate the following: date and time of the inspection; sampling and laboratory analysis results; operation and maintenance performed; repairs; the current performance of entire treatment and disposal system; and any corrective actions that must be taken prior to the next inspection. All inspection reports shall be on forms approved by the DNREC.

- b. Homeowner Training Program: The service contract must state that the certified service provider is required to meet with the homeowner during the first 6th month inspection. The certified service provider is to educate the homeowner on the components of unit and/or system and on the proper operation and maintenance requirements. At this time, the certified service provider shall provide the homeowner with an operation and maintenance manual.
2. Following the initial two (2) year period, the permittee is required to maintain a service contract for the life of the system by either: renewing the existing contract at a minimum of annually; or by contracting with another certified service provider. The service contract must outline the inspection program requirements from 1(a) above.
3. The permittee must submit all inspection reports and updated contracts from the previous year by March 30th of each year. The Department will mail out reminders.
4. The DNREC reserves the right to collect samples and analyze them to ensure proper treatment levels and system performance.
5. Right of Entry - The permittee shall allow, at reasonable times, the Secretary of the DNREC, or his authorized representatives, upon the presentation of credentials and such other documents as may be required by law:
To enter upon the permittee's premises to inspect the on-site wastewater treatment and disposal system installed under the permit and to sample or monitor for the purpose of assuring permit compliance with any condition of this permit, or the Regulations in accordance with 7 Del. C., Chapter 60.
6. The DNREC may increase inspection frequencies as warranted.
7. Transferability - No person shall transfer a permit from one person to another unless thirty (30) days written notice is given to the DNREC, indicating the transfer is agreeable to both persons, and approval of such a transfer is obtained in writing from the DNREC, and any conditions of the transfer approved by the Department are complied with by the transferor and the transferee.

So where do we go from here. Well, the GWDS is currently meeting internally with legal staff to adjust the transfer language above. At the same time we are also creating templates for inspections, and updating our database for tracking. Once this is completed, the GWDS would like to conduct two workshops in the spring, and implement the guideline and permit conditions by July 1, 2006.

If you have any questions or comments regarding the guideline please contact Hilary Moore at (302) 739-9331, or email at Hilary.Moore@state.de.us

DOWRA Committees

| <u>Committee Name</u> | <u>Chairman</u> | <u>E-Mail Address</u> |
|------------------------|-----------------|--|
| DNREC Partnership | Brian Carbaugh | wwes@dmv.com |
| Membership | Sam Schlegel | sschlegel@tuiwater.com |
| Newsletter | Niki Evans | firelady49@aol.com |
| Education/Outreach | Eric Valentine | evalentine@americansite.com |
| Conference | Carol Evans | caelnetml@aol.com |
| Activities | Kevin Socriter | kevinncp@verizon.net |
| Website | Hilary Moore | Hilary.Moore@state.de.us |
| Del Tech Training Site | Hilary Moore | Hilary.Moore@state.de.us |
| Policy | Jack Hayes | John.Hayes@state.de.us |



If you are interested in participating in any of the above committee's, please contact the chairman for additional information.

DOWRA is proud to be a member of:



NOWRA
National Onsite Wastewater Recycling Association
P.O. Box 1270
Edgewater, MD 21037

Tel: (410) 798-1697
Fax: (410) 798-5741

Website: www.nowra.org

Review of the past year, DOWRA Does it Better!

Submitted by Sam Schlegel, Ecoletter Editorial Staff

The organization's main goals are to provide opportunities for education in the on-site industry; a voice within the regulatory community; and, an outlet for those professionals in the industry to express opinions and concerns within the industry. DOWRA holds quarterly meetings and several events throughout the year to facilitate these goals. This past year in addition to the meetings, DOWRA held a golf tournament, fishing trip, crab feast, and their annual conference.

The main event of the year for the organization is the annual conference. This year's conference was, as in the past, even better than the last. The conference was sold out, with more than 330 attendees and 50 vendors. Two training session tracts ran simultaneously during the conference, offering specialty training for everyone. Sessions included topics such as; microbial ecology of on site systems; design, installation, and operation of peat systems; troubleshooting sick systems; Delaware's proposed operation and maintenance policy for Innovative and Alternative (I/A) systems; and, many others.

I caught up with Mike Lynn, President on the Virginia On-site Wastewater Recycling Association and asked for his comments on the conference. He had this to say: "I like the facility; it is very conducive to this group" he also said that "the conference was very practical and that he was very impressed with how consistent the DOWRA organization was with the Department of Natural Resources of Delaware's vision of the industry".

Other added features of the conference were the mixer that was held at the end of the first day and a backhoe rodeo. The mixer included cocktails; hors devours and live entertainment for all conference attendees. The backhoe rodeo consisted of a series of events using backhoes to maneuver objects through different obstacle courses. Prizes were awarded to the operators with the lowest combined times.

In August of this year DOWRA held its annual crab feast. The crab feast was open to members and one guest. The affair was held at Seafood City in Felton DE and was well attended. It provided a great networking opportunity while enjoying an Eastern Shore favorite. In September the organization held its annual scholarship golf tournament at Jonathan's Landing Golf Course, in Magnolia. The tournament helped DOWRA to raise over \$1,530 for two Delaware Technical Community College Scholarships. The golf outing was the biggest yet, with 21, hole sponsors and 17 teams. At the conclusion of the tournament, the participants enjoyed a steak dinner and awards for the tournament.

Calendar of Events

January

10th Board Meeting
31st Ecoflo Training Class

February

1st Ecoflo Training Class
21st-23rd Rural Water Conference

March

14th Board/Membership Meeting
20th & 21st Mid Year State Leaders Meeting in Colorado
23rd, Sporting Clay Shoot

June

13th Board/Membership Meeting

July

20th - 29th Delaware State Fair

August

TBD Crab Feast
TBD Fishing Tournament

September

12th Board/Membership Meeting
TBD Golf Tournament

October

25th - 26th 10th Annual Conference, Board/Membership Meeting



* All Board/Membership Meetings will begin at 7:00 p.m. (refreshments served at 6:30 p.m.) at the Exhibit Hall at the Delaware State Fairgrounds.



TROUBLESHOOTING **tips**

Sleuthing Skill

Troubleshooting an onsite treatment system pump requires a methodical, common-sense approach

By James G. Flaherty, PE.

It takes several steps of detective work to check and diagnose a septic pump system that is not working or has an activated high-level alarm.

The person checking the electrical end of the system should be a qualified electrician, well versed in local electrical codes. Some states require licensure to do such work. The person doing the troubleshooting also should be well versed in the installation and function of onsite treatment systems.

Gather intelligence

As a first step, talk to the owner to determine high-level alarm status; the locations of tanks, drainfield and electrical panel; and the age of the system. It's also important to find out who noticed the problem, and at what time. If the alarm has activated, you can

that the alarm is working correctly.

If the tank is partially full, check to see if the alarm float has broken free of its mounting or has become stuck in the up position, tangled with something in the tank. Also, look for a recent high-water mark.

If the tank is overfilled, the next step is to check to see if you have power at the pump tank. A non-contact voltage tester, called a tick tester, will help. Locate the junction box containing the splice point where the pump and float cords are connected to the building system wiring, and check with the tick tester to see if power is on.

Check the breaker

If no power is there, check the circuit breaker. If there is a service switch at the pump, turn it off before you reset

As a rule, if the pump has failed, replace the pump float, too. Any new pump deserves a new pump float switch. Installing a new pump float will save a service call later on and keep your reputation pristine.

you the power is not flowing. Possible causes include a bad switch, a poor wiring connection, or a malfunctioning pump float.

With the tick tracer, check for power on both the line (supply) and load (feed to pump) sides of the service switch. If the service switch is working, you will read power on both sides of the switch.

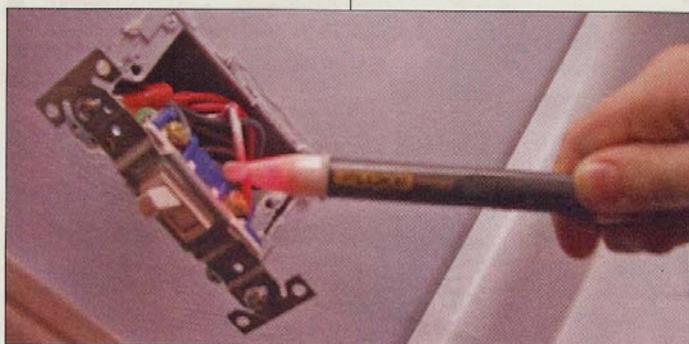
If your readings indicate a working service switch and power supply, and the pump still is not starting, check the pump float. With a tool, or by hand, carefully lift the pump float to the on position. If the pump starts, let it run for a minute or so and watch the ammeter. Current flow should momentarily spike, then return to a level below the Full Load Amp rating of the motor, or less than 80 percent of the circuit rating.

A momentary overcurrent is normal when the motor starts. A current flow reading after the pump has started should be 80 percent or less of the circuit breaker rating. For example, a pump supplied by a 15-amp circuit breaker should have a normal current flow of 12 amps or less when operating.

Always remember that a tripped circuit breaker or blown fuse is usually



A tick tester is used to check power at switches.



An amp probe is used to check current flow through circuits.

silence it while you troubleshoot. Once you know where all the components are located, open the pump tank. If it is full, look for the alarm float. If you see it in the up position, you can assume

the breaker. With a clip-on ammeter around one of the supply wires, reset the tripped circuit breaker and observe the current reading as you energize the pump. If there is no current, that tells

a symptom of the problem — not the cause. Breakers and fuses are designed to let an overcurrent through for a short time. You may read more than 100 percent of the rated value for a minute or more before the circuit trips.

Faulty float?

A failing pump motor fed by a 15-amp circuit may draw 20 or more amps for a minute or so before tripping the circuit. If this happens, the pump needs replacement.

If you lift the float switch with power at the pump tank on and still have no current, then most likely the float switch is bad. Turn all power off and take the pump float out of the circuit by wiring the pump directly to the



service switch or power supply. Turn on the power and note the operation of the pump and reading of the ammeter. You should hear a hum from the motor and see a current flow of 80 percent or less. If this is the case, the pump float is bad and needs to be changed.

Once you have determined why the pump system is not functioning, replace the malfunctioning parts. As a rule, if the pump has failed, replace the pump float, too. Any new pump deserves a new pump float switch. Installing a new pump float will save a service call later on and keep your reputation pristine.

If the system does not have a service switch at the pump, suggest to the customer that one be installed. The National Electrical Code states that a switch to de-energize the motor must be within sight of the motor, or the switch or circuit breaker must be capable of being locked in the off position. A service switch at the pump saves time and provides a high degree of safety to anyone working on the pump.

Leave your name

Another customer up-sell is that an electrical junction box located inside a pump tank should be relocated outside the tank, preferably above grade, with the vapor from the tank sealed from entering the junction box. The tank environment is hazardous not only to humans but also to electrical wiring. The only electrical apparatus inside the pump tank should be the floats, the pump, and their associated cords.

When installing a new pump system or servicing an existing pump system, leave a company sticker on the high-level alarm. People trust contractors who put their name on their work, and a future owner is likely to call the person listed on the sticker before anyone else. Service what you sell, and your business will prosper.

James G. Flaherty, P.E., is a partner with Tosone Electric Inc., an electrical contracting firm with locations in Lafayette and Upper Montclair, N.J., and does significant onsite system installation and repair. ■



Environmental Center continues to be Industry Leader



Already well-known as a premier site on the East Coast for the training and certification of water and wastewater operators, the Environmental Training Center at the Owens Campus once again has placed itself at the forefront of the field.

With the grand opening on November 1 of the Onsite Wastewater Systems Training Lab, Delaware Tech joins the ranks of four year institutions such as the University of Florida, Texas A&M, North Carolina State, and the University of Rhode Island; Delaware Tech is in fact, the only community college to have this type of lab.

In March 2002 the Delaware Department of Natural Resources & Environmental Control (DNREC) began to require all onsite (septic) technicians to pass a licensing exam and to maintain that license by earning 10 hours of continuing education credits annually. This affected the contractors, system designers, pampers/waste haulers, and the inspectors of onsite systems. There are currently 80,000 onsite systems in the state.

Fifty percent of the people in Delaware rely on ground water as their drinking water supply. Proper design, installation and maintenance of onsite systems help to protect the water supply. If these systems are improperly installed or fail, the results will contribute to the pollution of our state's ground water and inland bays.

With very little course work available in this area, several years ago Delaware Tech was asked to develop onsite license training courses and a diverse selection of continuing education courses for the technicians. In order to enhance the training benefits of those courses, a team of educators, DNREC, officials, and representatives from private industry began to look at other training centers and their onsite labs. After reviewing sites that had high water tables similar to Delaware's, the college applied for and received a \$175,000 construction grant from the U.S Department of Agriculture, Rural Development.

According to Jerry Williams, department chair for Environmental Training, this outdoor lab is a valuable teaching tool as all the components of different wastewater systems are built above ground to enable the technicians to see what the systems look like when properly installed. While the lab will be used primarily to teach the onsite licensing preparation course, it also will be used for continuing education classes and for specific instruction in the levels of wastewater operator certification course.

Dave Schepens, the program manager for the Groundwater Discharges Section of DNREC and feature speaker at the grand opening, stated, "The new Onsite Wastewater Training lab which Delaware Technical & Community College has built will assist with the outstanding training the college currently provides to the onsite licensed professional in the classroom by adding the hands-on approach in the field."



The Seepage Pit

Submitted by B.A. Miller, Jr.

With secondary treatment units, fancy controls and alarms, and new types of onsite wastewater disposal systems emerging, it is easy to forget about the existing traditional systems that have been installed over the past 100 years. On several occasions I have run into one particular system. This system is the seepage pit. Many people do not understand why a seepage pit is not an acceptable method for wastewater effluent disposal. Simple, the seepage pit does not treat or disinfect wastewater effluent.



What is the seepage pit and how is it constructed? It is a hole in the ground with the perimeter lined with concrete block, rock, or other materials with openings to let the wastewater effluent seep into the ground. There is a septic tank between it and the dwelling, it may have a lid, and in some instances there is no covering. The two most common methods for determining the depth of these systems are by: digging down until water is reached or digging to the depth of bedrock. The end result is usually a hole that is fairly deep.

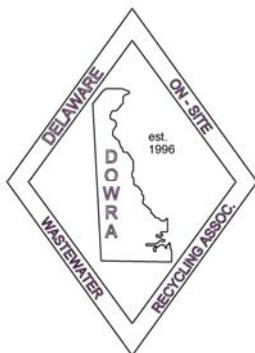
Newer onsite wastewater disposal systems are installed with a septic tank, sometimes secondary treatment, have a pump or distribution box, and a shallow trench or bed drain field to disperse the effluent. The purpose of these systems is to disperse treated wastewater effluent back into the ground.

The seepage pit disperses the wastewater effluent back into the ground; however, it does not treat and disinfect the effluent. Because the seepage pit is so deep, often to the depth of the groundwater or bedrock, anaerobic conditions exist at the point where the effluent comes in contact with the soil. Anaerobic conditions are conditions that contain very little or no oxygen. The organisms that treat and disinfect wastewater effluent require oxygen. Since conditions within seepage pits are anaerobic very little disinfection and treatment occurs. In addition, because seepage pits are deeper than disposal beds or trenches, the wastewater effluent is forced into the ground faster. This is caused by increased pressure due to ponding of wastewater effluent.



Newer onsite disposal systems operate a little different. The newer systems utilize a shallow bed or trench and the wastewater effluent is dispersed out of a lateral over a larger shallow area. A separation between the bottom of the bed or trench and the groundwater is also maintained. Because beds and trenches are shallow, aerobic conditions exist. Aerobic conditions are conditions that contain oxygen. (Remember in most instances seepage pits are too deep for aerobic conditions to exist.) Aerobic organisms treat and disinfect the wastewater effluent. By the time the wastewater effluent reaches the groundwater, it has been disinfected and is clean.

As a summary, newer onsite wastewater disposal systems are designed not only to disperse the wastewater effluent back into the ground, but to treat and disinfect the effluent before it reaches the groundwater. The seepage pit only disperses effluent back into the ground and does not disinfect or treat wastewater effluent.



Delaware On-Site Wastewater Recycling Association
P.O. Box 1696
Dover, DE 19903

Tel: (302) 739-9948
Fax: (302) 739-7764

Web Site: www.dowra.org