

The Utah WaTCH

Wastewater Training Center Happenings

Utah State UNIVERSITY

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Training Center to Facilitate Organization of State Association for On-Site Wastewater System Professionals and Users

As a means to assist with the growth and development of the on-site wastewater industry in Utah, the Utah On-site Wastewater Treatment Training Center is helping to organize a state on-site wastewater association. The goal of the association is to provide a formal and social forum to enable professionals, system owners, and others with a stake in on-site wastewater treatment issues to work together at a statewide level to improve on-site wastewater treatment performance in Utah. Activities that the association may become involved in include:

- Development of opportunities for professional development of on-site wastewater treatment practitioners and users
- Development of certification and licensing programs for on-site wastewater treatment practitioners
- Review of on-site regulatory practices and programs
- Development of programs for operation, maintenance, and management of on-site wastewater treatment systems
- Investigation and evaluation of alternative methods of on-site wastewater treatment

The Training Center is presently developing by-laws and a charter in order to create the association as a non-profit entity. An organizational meeting will be held in April to identify interim officers and

to form committees to develop action plans. By summer of 2000, a meeting of all those who have expressed an interest in the association will be held.

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If you would like more information about the association and have not yet contacted the training center, or if you would like to participate in the initial organizational meeting, please contact Steve Iverson of the Training Center at (435) 797-3159 or by email at <siverson@cc.usu.edu>.

Revisions to Utah's Individual Wastewater System Rules Into Effect

After several years of collaboration and discussion between the Local Health Department Advisory Group (formerly called the Wastewater Disposal Technical Review Committee) and the Division of Water Quality of the Utah Department of Environmental Quality (UDEQ), as well as a series of public hearings in Cedar City, Salt Lake, and Duchesne in December, 1999, new rules for on-site wastewater treatment systems went into effect on February 15, 2000. The new rules, which replace R317-501 to 513 (Individual Wastewater Disposal Systems) of the Utah Administrative Code with R317-4 (Onsite Wastewater Systems Rule), are available for use on UDEQ's web site at:

[http://www.eq.state.ut.us/eqwq/doc_rule.htm]

There is also a "user-friendly" version of the rules, prepared in a technical report format, that can be obtained at your local health department.

On-Site Wastewater Systems Conference to Be Held in Denver

The National Environmental Health Association is sponsoring the *Onsite Wastewater Systems Conference* in Denver from June 15-18, 2000. After attending this conference, the sponsors indicated that participants will be able to:

- Analyze the role of nitrogen in onsite wastewater systems (OSWS).
- Develop prescreening criteria for new OSWS designs.
- Recognize problems created by regulatory inconsistencies.
- Identify proper tools needed for onsite wastewater management.
- Summarize latest developments in OSWS technology.
- Explain ways to improve the operation and maintenance of OSWS.
- Describe the pros and cons of soil characterization tests versus percolation tests.

Over 24 hours of NEHA continuing education contact hours can be earned by attending the educational sessions of the conference. Continuing education forms will be available at the conference.

For more information, contact NEHA conference organizers at (303) 756-9090 (voice); (303) 691-9490 (fax); access fax-on-demand document #254 by dialing (303) 756-9090 and selecting option # 5; by Internet at [<http://www.neha.org>]; or by email at <staff@neha.org>.

Information Sources

Videotape

A videotape titled *Septic Systems Revealed: Guide to Operations, Care, and Maintenance* is available from the National Small flows Clearinghouse (NSFC). The video was produced by a technical advisory committee working with Barb Liukkonen, David Abaz, Dave Gustafson, and Wayne Seidel of the University of Minnesota Extension Service.

The program explains each component of a septic system and its function. Two basic types of soil absorption systems are described: conventional systems with rock-filled trenches and mound systems.

The video identifies hydraulic overloading as the primary reason for system failure, followed by inadequate maintenance and improper installation or construction. Efficient use of water is a focus of the video as a means of preventing hydraulic overloading to the system. Household tips for conserving water are presented, along with a discussion of the effects of household cleaners on septic systems. The video discourages the use of additives and stresses that they should not be considered a substitute for proper maintenance. A demonstration of proper septic tank pumping methods is included.

The 23-minute video can serve as a resource for contractors, developers, installers, designers, local officials, public health officials, and the general public.

The cost of the video is \$12.00. To order, call NSFC at (800) 624-8301 or (304) 293-4191 and ask for Item #WWVTPE43. Orders may be placed by email to <nsfc_orders@mail.estd.wvu.edu>. The NSFC web site is located at [<http://www.nsfc.wvu.edu>].

Newsletter on Mound Systems

The Summer 1999 issue of *Pipeline*, the newsletter of the National Small Flows Clearinghouse, explains the construction, advantages, and maintenance of mound

systems. Mound systems are typically used when there are slow or fast permeable soils, shallow soil cover over creviced or porous bedrock, or a high water table.

Advantages include use of land that would otherwise be unsuitable for in-ground or at-grade on-site systems, disposal of wastewater into topsoil for disposal, which is typically the most permeable soil horizon, and potential for use in most climates.

The newsletter includes diagrams of mound systems, ten maintenance procedures to keep a mound in good shape, advice about landscaping mound systems, and mound system information available on the Internet.

A copy of the newsletter can be obtained from NSFC at (800) 624-8301 or (304) 293-4191. Back issues of the newsletter can be downloaded from the NSFC web site at [<http://www.nsfc.wvu.edu>].

Internet Resources

Literature Review Documents

Two new literature searches about on-site wastewater issues are available from the web site of the Texas On-site Wastewater Treatment Research Council (<http://towtrc.tamu.edu>). The reports can be downloaded and viewed with free Adobe Acrobat Reader software. This web site is produced and maintained by the Texas Water Resources Institute at Texas A&M University.

- *A Literature Review of Effects of Long-Term Infiltration Rates at On-Site Sewage Disposal Systems*, by Raghava Kommalapati and Ahmed Noman of the Department of Civil Engineering at Prairie View A&M University.

The full report is 29 pages long and discusses such issues as failures of sewage systems, long-term acceptance and loading rates, soil clogging, site and soil evaluation, and construction practices. Users can also choose to download an 8-page summary or a 14-page bibliography, which identifies the source of specific documents (i.e., published in a book, as a peer reviewed journal article, or in conference proceedings).

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- *Synoptic Literature Review of Shallow Groundwater Related to On-site Sewage Facilities*, by a multi-university team consisting of John Jacob of the Texas Agricultural Extension Service and the Sea Grant Program, J. Lane and Richard Weaver of Texas A&M University, and Joe Yelderman, Lee Nordt, Lisa Zygo, and Katherine Kier of Baylor University.

This 50-page report describes such topics as evaluating wetlands and hydric soils for suitability in on-site wastewater systems, the formation of soil drainage colors, the use of mottles as indicators of soil wetness, and the use of climate and landscape position, clay pans, and soil morphology to judge soil wetness. An appendix discusses the survival and movement of fecal coliforms in soil.

On-Site Wastewater Treatment Technologies

The web site for the U.S. Environmental Protection Agency's Office of Water Management's Onsite Decentralized Wastewater Treatment Systems is located at

[<http://www.epa.gov/owm/decent/decent.htm>]

The site contains links to technology fact sheets about a variety of on-site wastewater technologies, including mound systems, recirculating and intermittent sand filters, and septage treatment and disposal. The site also contains a link to a printable version of the U. S. EPA 1980 *Design Manual for Onsite Systems*, which has been the standard reference for on-site wastewater treatment technologies.

DEQ Appoints Michael Hanson as On-Site Wastewater Engineer

After nearly a year-long search, the Division of Water Quality of the Utah Department of Environmental Quality (UDEQ) appointed Michael Hanson as an environmental engineer to work in the on-site wastewater treatment program. Mr. Hanson, originally from Challis, Idaho, began studying civil engineering at the University of Idaho in Moscow. After marrying Lisa from Shelley, Idaho, they both moved to Salt Lake City to complete their undergraduate education. Mike graduated from the University of Utah in civil engineering and minored in business administration. For the last 6 1/2 years, Mike worked for WesTech Engi-

neering, Inc. in Salt Lake City as he went to school and after he graduated in 1998. He enjoys reading classical literature and science fiction. His hobbies also include white water rafting, mountain biking, and snow skiing. He and his wife have a 15-month old daughter, Emilee.

Mike's job duties will include technical assistance and consultation to local health department staff and the general public on on-site system rules, policies, practices, and technologies. He will also evaluate new technologies and trends, current industry and state-wide practices, and available products for on-site wastewater treatment systems.

Questions regarding UDEQ's on-site program should be directed to Mike. His phone number is (801) 538-9218 (if he is not in, call (801) 538-6146 to leave a message) and his email address is <mhanson@deq.state.ut.us>.

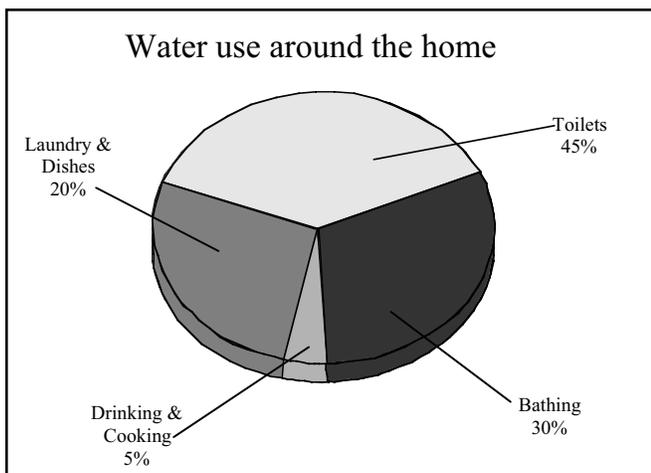
Regulatory Spotlight - Water Use and Hydraulic Overloading of a Septic System

R-317-4.13.1, On-Site Wastewater Systems Rule, Utah Administrative Code

Economy in the use of water helps prevent overloading of a septic tank system that could shorten its life and necessitate expensive repairs. The plumbing fixtures in the building should be checked regularly to repair any leaks which can add substantial amounts of water to the system...

Improper siting, construction, or design often contribute to septic system failures. But if your septic system has been properly sited, designed, constructed, and installed, then YOU are the most likely threat to the health and longevity of your septic system. Fortunately, it is easy to learn to operate and maintain a septic system.

Water conservation is important for septic systems because continual saturation of the soil in the drainfield affects the ability of the soil to naturally remove disease-causing bacteria, viruses, and parasites, toxic chemicals, and other pollutants from wastewater. Reducing flow of wastewater through the septic tank allows more time for solids to settle out and undergo digestion in the tank. There is less chance of solid particles being carried over to the drainfield.



The most effective way to conserve water around the house is to first find out how it is being wasted. Immediately repair any leaking or dripping faucets or running toilets.

In a typical household, most of the water used indoors is used in the bathroom. Changes in your water-use habits as well as installation of low-flow fixtures can affect the amount of water used. For example, try to avoid letting water run while washing hands and brushing teeth - you can save up to five gallons per minute! Take showers instead of tub baths, but avoid taking long showers. Install water-saving features in faucets and shower heads. These devices can reduce water use by up to 50 percent. Shut off water in the shower while lathering and shampooing, and do not run hot water to warm the bathroom. Replace your old toilet with a low-flush toilet. Low-flush toilets use one to two gallons per flush, compared to three to five gallons used by conventional toilets.

In the kitchen, keep a pitcher of drinking water in the refrigerator instead of running the tap to get cool water. Hand wash dishes in the basin instead of under running water or install a low-water-use dishwasher. Scrape but do not pre-rinse dishes before loading them into the dishwasher. For laundry, select a front-loading washing machine, which can use up to 40% less water than a top-loading machine. Since early morning and bedtime are peak use times in the bathroom, run dishwashers and washing machines at other times of the day. Use washing machines and dishwashers only when full, and use the appropriate water level setting for the size of the load being cleaned.

If you have a water softener, recharge it as infrequently as possible to reduce water use. Also adjust the settings to reduce the amount of water needed for backwashing and regeneration.

It is also important to avoid overloading your system by using large amounts of water in a short time period, or by allowing too much outside water to reach the drainfield. Try to space out activities requiring heavy water use (like laundry) over several days. Never do more than two loads of laundry in one day and spread out the times between the loads. Also divert other sources of water, such as water from roof drains, house footing drains, surface runoff, and sump pumps away from the drainfield.

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Proper operation of your septic system can have a significant impact on how well it works and how long it lasts. In most communities, septic system maintenance is the responsibility of YOU, the system user.

Adapted from: *Pipeline*, Fall 1995, National Small Flows Clearinghouse; *Septic System Owner's Guide*, University of Minnesota Extension Service; and *Septic System Owner's Guide*, University of Arizona Cooperative Extension Service.

Planning Begins for On-Site Physical Demonstration Facility on the Campus of Utah State University

The Huntsman Environmental Research Center at Utah State University has recently awarded \$30,000 to the Utah On-Site Wastewater Treatment Training Center for construction of a physical demonstration facility. At this 2-acre field site, which will be located near the Utah Water Research Laboratory (which houses the Training Center), hands-on training with physical models of conventional, alternative, and experimental on-site wastewater treatment systems will be used to supplement and enhance classroom instruction. This site will allow training in the correct design, siting, installation, operation, maintenance, and troubleshooting of on-site wastewater treatment systems. Other partners who have agreed to support this effort include Utah septic tank manufacturers as well as national vendors of on-site equipment, with donations of equipment and materials valued at \$15,000.

Expected users of the site include on-site system installers, designers, regulators, students, land developers, and homeowners. Additional audiences may include equipment vendors, municipal authorities, elected officials, landscape architects, and septic tank manufacturers.

Construction and installation of conventional and Utah-approved alternative systems is expected to begin in the spring of 2000. As more resources become available, additional treatment systems will be installed.

Training Workshops Scheduled for April 2000

The Utah On-Site Wastewater Treatment Training Center will conduct two workshops at the Holiday Inn in Cedar City, UT on April 18-20, 2000.

Basic Site Evaluation Techniques and Percolation Test Training for On-Site Wastewater Treatment is a two-day course (April 18-19) that emphasizes assessment of soil characteristics and application of those characteristics to the ability of a soil to treat and dispose of wastewater. The first day includes classroom discussions and demonstrations while the second day consists of a discussion of local and Utah on site regulations, perc testing, and soil characterization, followed by a half-day of field training in perc testing and site evaluation.

On April 20, 2000, a workshop on *Fundamentals of On-Site Wastewater Treatment Systems* will be held. This class includes discussions and demonstrations on composition of wastewater, septic tank construction and maintenance, design of wastewater distribution systems, treatment processes in soils, and use of alternative systems in Utah.

For information on these workshops, please contact Steve Iverson at (435) 797-3159 or by email at <siverson@cc.usu.edu>. You can also visit our website at [<http://www.engineering.usu.edu/uwrl/training/workshop.html>].

Calendar of Events

April 6-7, 2000

Utah Environmental Health Association Spring Conference, Best Western Zion Park Inn, Springdale, UT. Contact: Keith Larsen, Bear River Health Department, (435) 752-3730.

April 18-19, 2000

Workshop: *Basic Site Evaluation Techniques and Percolation Test Training for On-Site Wastewater Treatment*, Holiday Inn, Cedar City, UT. Sponsored by Utah On-Site Wastewater Treatment Training Center, Utah State University. Contact: Steven Iverson, (435) 797-3159 or by email at <siverson@cc.usu.edu>.

April 20, 2000

Workshop: *Fundamentals of On-Site Wastewater Treatment Systems*, Holiday Inn, Cedar City, UT. Sponsored by Utah On-Site Wastewater Treatment Training Center, Utah State University. Contact: Steven Iverson, (435) 797-3159 or by email at <siverson@cc.usu.edu>.

April 27-28, 2000

Workshop: *Fundamentals of On-Site Residential Sewage*, Northern Arizona University On Site Wastewater Demonstration Project, Flagstaff, AZ. Contact: Connie Raney, (520) 523-2771 or by email at <connie.raney@nau.edu>.

May 15-16, 2000

Workshop: *Fundamentals of On-Site Controls and Data Collection*, Northern Arizona University On-Site Wastewater Demonstration Project, Flagstaff, AZ. Contact: Connie Raney, (520) 523-2771 or by email at <connie.raney@nau.edu>.

June 15-19, 2000

Onsite Wastewater Systems Conference, National Environmental Health Association, Adam's Mark

Hotel, Denver, CO. Contact: (303) 756-9090 (voice); (303) 691-9490 (fax); Access fax-on-demand document #254 by dialing (303) 756-9090 and selecting option # 5; Internet: [<http://www.neha.org>]; email <staff@neha.org>.

June 22-23, 2000

Workshop: *Fundamentals of On-Site Hydraulics*, Northern Arizona University On-Site Wastewater Demonstration Project, Flagstaff, AZ. Contact: Connie Raney, (520) 523-2771 or by email at <connie.raney@nau.edu>.

July 18-20, 2000

Water Quality from the City to the Farm, Utah Non-Point Source Water Quality Conference, Eccles Conference Center, Utah State University, Logan, UT. Sponsored by Utah Department of Agriculture and Food. Contact: Jack Wilbur at (801) 538-7098 or by email at <agmain.jwilbur@email.state.ut.us>.

November 2-3, 2000

Annual Conference, Utah Association of Conservation Districts, Holiday Inn, St. George, UT. Contact: Gordon Younkers at (435) 753-6029; Internet: [<http://www.uacd.state.ut.us>].

October 31 - November 4, 2000

9th Annual National Onsite Wastewater Recycling Association (NOWRA) Conference and Exhibit, Grand Rapids, MI. Contact: (800) 966-2942 (voice); Internet: [<http://www.nowra.org>]; email: <103061.1063@compuserve.com>.

November 8-9, 2000

Decentralized Sewage Treatment : Alternatives to the Big Pipe, Seminar presented by the Small Wastewater Systems Committee of the British Columbia Water and Waste Association, B.C. Hydro Auditorium, Burnaby, B.C. Contact: (604) 540-0111 (voice); (604) 540-4077 (fax); email <bcwwa@bcwwa.org>; Internet [<http://www.bcwwa.org>].

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Summary of Symposium on World Wide Web

The Utah On-Site Wastewater Treatment Training Center at the Utah Water Research Laboratory and the Huntsman Environmental Research Center of Utah State University sponsored an Intermountain States Wastewater Treatment Forum for representatives from eight states in the Intermountain West. The two-day forum, held July 27-28, 1999 at Utah State University, brought together over 40 on-site wastewater professionals to identify available resources and to discuss issues concerning on-site policies and regulations, outreach and technology transfer activities, and on-site educational and research programs. A summary of the discussions held at the forum can be accessed through the Internet at

[<http://www.engineering.usu.edu/uwrl/training>]

A paper copy can be obtained from Ivonne Harris at (435) 797-3693 or email <iharr@cc.usu.edu>.

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