



Onsite Journal

National Onsite Wastewater Recycling Association

Volume 13, No. 3
May-June 2004



*** NOWRA Launches
Proactive Legislative Role**

*** NOWRA 2004 Technical
Education Conference & Exposition**

~Qualified Installer Education/Training Course - November 7

*** A Tribute to an Industry Leader—Ken Zoeller**

Orenco Systems[®], Incorporated

New Product Release

Try this with any other tank!



At least!

This unsupported 1,500-gallon tank is filled with water to the top of its five-foot riser.

Orenco's injection-molded fiberglass tanks set a new standard:

- Our molding process turns out perfectly uniform tank halves, *every time*
- Every tank is tested twice for watertightness
- Our tanks withstand a minimum 11" Hg vacuum, ensuring they'll easily withstand four-foot burial empty with water to grade and a 2500-lb wheel load on the surface
- Our tanks are light enough to carry in a pick-up or small utility trailer and install with a backhoe

Are you interested in installing truly watertight and structurally sound tanks? Now you can. Call Orenco at (800) 348-9843 to find out how you can see our tanks for yourself.



Orenco

Fiberglass Tanks

Really strong! Really watertight!

We dare ya!



Orenco Systems[®]
Incorporated

Chicago, IL
World's Best Water

See us at
NOWRA
Booths
714/716

BOARD OF DIRECTORS

President

Tim A. Frank 440/636-5111

Vice President/President-Elect

Raymond Peat 800/753-3278

Secretary/Treasurer

A. Thomas Ferrero, Jr. 267/250-4068

Past President

Robert B. Mayer, P.E. 800/345-3132

Directors

Eugene C. Bassett 505/281-3155

Matt Byers, Ph.D. 800/928-7867

Jean Caudill 614/644-7181

James Converse, Ph.D. 608/262-1106

David C. Flagg, Jr. 636/583-5564

Tina Edvardsson 530/589-9929

ext. 111

Tom J. Fritts 816/966-8885

Brenda R. Guy 225/665-1666

Roman Kaminski 715/345-5334

Tony Smithson 847/377-8032

Larry Stephens, P.E. 517/339-8692

Jerry Stonebridge 360/331-6101

Ronald Suchecki 254/299-0821

E. Jerry Tyler, Ph.D. 608/835-9499

Executive Director

Linda Hanifin Bonner, Ph.D. 800/966-2942

COMMITTEE CHAIRS

Bylaws

Ted L. Loudon 517/353-3741

Communications/Promotion

vacant

Conference

Brenda R. Guy 225/665-1666

Education & Training

James Converse, Ph.D. 608/262-1106

Peggy Minnis, Ph.D. 203/866-3006

Government Relations

Robert Himschoot 941/332-1986

License, Certification & Ethics

David Linahan 610/644-4254

Membership

Robert E. Lee, P.E. 703/737-8931

Performance Requirements/

Model Performance Code

Michael F. Corry 608/257-1787

Jean Caudill 614/644-7181

State Association Presidents

Tom Fritts 816/966-8885

Technical Practices

Robert B. Mayer, P.E. 800/345-3132

David Linahan 610/644-4254

NOWRA Headquarters

P.O. Box 1270

Edgewater, MD 21037-7270

Phone: 800/966-2942 or 410/798-1697

Fax: 410/798-5741

e-mail: NOWRA@hanifin.com

Website: www.nowra.org



Onsite Journal

National Onsite Wastewater Recycling Association

DEPARTMENTS

Frankly Speaking...

Tim Frank, NOWRA President 2

Headquarters Update

Linda Hanifin Bonner, Ph.D. 3

Model Code Committee Update

Mike Corry. 4

Legislative Update

NOWRA Launches Proactive Legislative Role

Linda Hanifin Bonner, Ph.D. 6

State Group Happenings 17

FEATURES

Tribute to a Friend

In Memoriam: Kenneth Everett "Ken" Zoeller 19

Opinion: Changing Procedures for System Field Evaluation

Mike Corry. 20

In the News...

Indian Point, Missouri Enacts Regulations 21

OSWAP Loan Program Surpasses \$1 Million in Septic System Loans 22

WERF to Release Nearly \$2 Million in Research Funding 23

NOWRA Spotlights Member Products & Services 24

Oreco Systems

Xerxes, LLC

SJE-Rhomus Controls

2004 Annual Education Conference & Exposition

Early Registration Package 25



FRANKLY SPEAKING...

by Tim Frank,
NOWRA President

Spring spent a long time trying to arrive here in Ohio—particularly after a very early, long, and cold winter. The good news is that now after all of the snow and rain has gone, the forecast is for a very good year for onsite businesses. Our indicator is the increase in telephone calls to the office that are keeping the staff very busy. Another indicator of business increase is that the nature of the phone calls has also changed. Although the usual requests for routine pumping continue to come in, many of the newer calls are the result of problematic systems, with requests for help. I believe this change is a result of many situations.

First, here in Ohio, the public is becoming much more aware of the fact that their onsite systems will have to be brought into compliance, with an ongoing maintenance program to keep them that way. If the awareness occurs by no other means, information is now coming through the grapevine that the health departments are becoming much more active about compliance of onsite systems. As an example, most people have heard that if they put their house up for sale the system will have to function in a way to pass inspection, or it will have to be re-installed. The new “buzz” words raising questions from customers are “required maintenance and management.” If you are in the service provider sector of our industry, gentlemen, it’s time to start your engines. You are going to become very busy.

With the number of new homes being built, homes being sold, and faltering system updates, the workload of the sanitarians and service providers is getting heavier. Some health departments are adding more manpower to help keep up with the workload.

Any installer who is worth his salt in the onsite business probably has a long list of jobs to do. Some of you are lucky and can work most of the year around. I guess what I am saying is that those who strive to keep up with changes and demands of our industry will prosper. My hope is for you all to have a prosperous year and that you and yours remain healthy and safe.

Our NOWRA staff is keeping very busy with membership growth, preparing for the NOWRA Conference and education programs, producing the *Journal*, fundraising, developing legislative statements, and updating the website, just to mention a few things. A lot has already begun to happen with the upcoming NOWRA Conference which is going to be held in Albuquerque, New Mexico, in November. Many of the exhibit booths are sold and Jim and Peggy have completed the educational programs.

Our new website is up and running. Our Executive Director has plans to make it ever more user-friendly. At a state meeting a few weeks ago, another service provider here in Ohio said he saw the Tim Frank Septic Tank Cleaning Co. on the new Business Locator Directory and thought it was great. I told him to join his state affiliate OOWA and then he could, and should, get his company listed in the Directory as well.

With new states joining NOWRA all the time, I hope that you state members and national members take advantage of the Business Locator Directory and get the word out that your company is out there. Let your customers know that you care about your industry and that you, through NOWRA, are working to get the latest training and information relating to the field of onsite.

If you are a NOWRA member and participate in our accredited training sessions, make your customers aware of it. Let them know when they request your services, that some of their dollars are helping you to help them. Let them know that you attend accredited training sessions to acquire the latest in knowledge and technology from the leaders in our industry. If you are using some of their dollars to improve your knowledge and skills, passing that information along to them will build their confidence in you and your services. Let them know that you will be there to go over all of their options should a need arise. Let them know that you are trained and that you have the ability and the knowledge to guide them and to communicate with their health officials if need be. It will surely make them feel better knowing that they have a professional service provider who has a broad understanding of what is going on in the regulatory arena as well as what is available in the marketplace.



Tim is president of Tim Frank's Septic Tank Cleaning—a successful business of installing, servicing and managing onsite systems throughout Ohio.



HEADQUARTERS UPDATE

Linda Hanifin Bonner, Ph.D., Executive Director

NOWRA's Work

This issue of the Onsite Journal illustrates, as never before, the increasingly high level of energies at work on behalf of NOWRA members and the industry. During the past months these efforts included meetings at EPA, developing and making presentations to state legislative programs on industry regulations; establishing stronger technical education programs, and building the industry constituency. In addition, many of the States holding their annual membership meetings had higher attendance records – further illustrating recognition that the value of state and NOWRA memberships is both occurring and increasing.

In the initial months of 2004, NOWRA's membership increased 2400 members as a result of the formal affiliations with the states of Indiana, Nebraska, Iowa, Louisiana, and Kentucky—taking us over the top of 5,000. This is a significant achievement! Florida's membership growth is the leader with the highest membership – 405, of all the state groups. Florida is followed by the states of Kentucky, Texas, and California with membership in the high 300's. States currently in the process of organizing their membership include New Jersey, Maryland and New Mexico. Interest in forming groups has been expressed from

members in New York, Massachusetts, New England area and Arizona. Letters have also been sent to the states of Oregon, Mississippi, Georgia, Utah, Alabama, and Oklahoma with invitations for the organizations to affiliate with NOWRA.

Within this industry of over 40,000 within the various sectors, NOWRA's membership roles should be at least 18,000 to 22,000. How does this growth occur? It is through the State groups and their work!

NOWRA's role is to help its state groups grow in their effectiveness and in their membership. It is at the local level that action occurs – through the work of individual members. The NOWRA office provides support to the states with education & training programs and materials, website hosting, directors & officers liability insurance and legislative presentations. We are continually searching for additional activities and programs to provide benefits to the members. This year we have launched the online business & services locator—where 10% of the fees of members signing up are returned to the states. This information has been sent to all state and local health departments and building industry members.

Investigation of special insurance programs for business members is also underway. And, most of all we have accelerated our communication from the NOWRA office with the states through bi-monthly updates of work activities to the state leaders. Beginning in May, this information is also posted on NOWRA's website.

Plans are also underway to hold a special one-two day meeting of state leaders. This meeting is planned for early August, in Kansas City, Missouri. Its purpose is to make time for us to talk about membership growth and ongoing and new issues facing state groups in their work. Discussion will also occur on changes that are needed in the NOWRA organization to become more effective in a national leadership role, sharing experiences, and making plans for a pro-active legislative campaign addressing the onsite industry and membership needs.

The message to NOWRA members is that its Association representatives are working on behalf of your interests and achieving significant recognition as the national leader in the onsite industry and representation. It is evident in the information provided in this *Journal*. ♦

FRANKLY SPEAKING...

Three important goals of most business owners in our industry are:

- to grow their business,
- to be able to afford the tools to accomplish their work, and
- to provide a better living for themselves and their employees.

We all need to use every opportunity to

educate ourselves so that we can meet the standards necessary to reach these goals.

Keep in mind that even the EPA is saying that those in our industry who choose to remain dinosaurs (not acquire good business practices and participate

in management programs) will be out of business before the end of the decade. Join NOWRA or one of the state associations, so that you can succeed. We are asking you to bring your knowledge to the table so that we all can share and be part of the ever-moving energy force that keeps our onsite industry strong. ♦



Model Performance Code COMMITTEE UPDATE

Mike Corry, Co-chairman

The NOWRA code committee is proceeding with the goal to have a complete draft code document available for comment at the November 2004 NOWRA Annual Conference. Prior to the annual conference, two committee meetings are scheduled to occur June 9th-10th at the Colorado School of Mines in Golden, Colorado, and in Baltimore, Maryland, on September 8th-10th, to serve as check points in the development of the various codesegments.

The Soils Committee, lead by Jerry Tyler, University of Wisconsin, and Del Mokma, Michigan State, have completed the basic research and are now developing the algorithms needed to turn soil assessment information into soil treatment credits. The soil tables will inform the designer of the limits on the input loads and flows needed to reach a treatment goal. With this information, site designers will know the extent of pretreatment needed for dispersal to the drainfield.

The Guidance Committee, lead by Jean Caudill, Ohio Department of Health, has nearly completed the guidance document that serves as the preface to the overall code document. The major sections provide an overview of onsite treatment, the structure and the purpose of the model code, assistance for state and local policy makers in selecting the appropriate performance standards, and methods to promote quality assurance in their code structure.

The Evaluation Committee, headed by Fred Bowers, New Jersey Department of Environmental Protection has completed a full draft of their process and has the document and process being tested by five volunteer companies. They are submitting applications and performance

data to the committee to test the administrative process and the computer programs that will list the designs in the performance matrices.

The Tank Committee, lead by Bob Pickney, Pickney Brothers Inc., Tennessee, is in the final stages of .developing standards to classify tanks for structural integrity and water tightness. This committee has drawn a large number of interested members to this important topic.

Paul Chase, Chase Environmental Services, Illinois, is developing a tool to assess regulatory capacity to implement the code provisions. Effective regulation is the key to an effective industry. It is important that sufficient regulatory resources are deployed to enforce the code.

Mike Hines, Southeast Environmental Engineering, Tennessee, is developing administrative procedures to match the unique needs of EPA Management Levels IV and V organizations. These responsible management entities (RMEs) have a structure and practice sufficiently different from the traditional onsite system design and installation process to require a separate process.

The Reuse Committee has developed standards for water reuse. This committee's work, which is led by Bob Lee, Loudoun County, Virginia, is a major topic of interest in many parts of the country. The committee has completed its work, and can be found on the website.

Mike Corry, Committee Co-chair, is responsible for the development of the Code Language. Major portions of the document are finished and the remainder is proceeding to completion.

All the documents mentioned above are available on the NOWRA web site under the committee work link. Comments on the documents can be made on the "message forum" link. To access these documents, you must have your membership number activated.

The overall course of action of the NOWRA model performance code work is to reform the existing onsite code process to more science- and risk-based codes. In developing these new applications, the process affects some sensitive areas within state policies and regulations. The following areas identify some of the more controversial issues.

✓ Performance standards and the degree of management attention paid to treatment system operation should be primarily determined by local governments, with the state setting performance standards aimed at the base level of risk conditions existing statewide. The reason this is proposed is that there are a broad range of risk conditions that invite the use of different performance standards; and the local governments are in the best position to know those risks and the area's tolerance for regulation. Further the local governments are more likely to enforce rules they adopt than state generated standards. Statewide performance standards are either too strict or too lenient for local risk conditions. The controversy is that states like to set standards aimed at the highest risk level in the state, not the lowest risk level.

✓ The industry should stop requiring periodic samples from on-lot systems and instead concentrate on effective evaluation and classification of systems based on both field and test center data, and on system operational maintenance. A single test of a system's effluent cannot determine the performance of the system—the

output range is simply too variable. It may take 30 to 100 samples to adequately evaluate the performance of a single system, a number too high to be economically and politically sustainable. The controversy is that regulators like to require sampling.

✓ Conventional drainfields are likely to be larger, closer to the surface and narrower to maximize oxygen transfer and holding time in the treatment zone. Pretreatment and more efficient dispersal will allow smaller drainfield areas. The controversy is that the regulations have been tending toward smaller drainfields, often ignoring organic loading. Depending on the design of the system, either organic or hydraulic loading will be the size-controlling factor.

✓ Ground water near the surface will become a valuable design tool to treat nitrate because of access to sources of carbon for denitrification. The controversy is that the current thinking is that water near the surface is a design problem, not an asset.

✓ Vertical and horizontal separation distances will be determined by time of travel instead of prescriptive distances common in current codes. The controversy is that the prescriptive separation distances are of long standing use even though they do not reflect the variable site risks. For example, the same horizontal separation distance is often required without regard to the slope of the land, the type of soil or the distance to a limiting condition. The vertical separation distances range from 6 inches to 120 inches in the various states for the same soil conditions.

✓ A major emphasis will be placed on certification and training. The code process will urge certification by national associations, with the certifications recognized by the state codes. Valid performance based certification systems are too expensive to develop at the state or local government level across the full range of skills needed by the industry. Local onsite associations will assist in the development and administration of the certification process and in provision of continuing education. The controversy

is that local and state governments often prefer to control the content of these certification programs.

Regulatory agencies and regulators engaging in design, installation and soil evaluation for private citizens and business will be determined to have a conflict of interest between the function of provider and regulator. In other words, agencies and regulatory staff will no longer be able to engage in provider services other than those of code enforcement because of conflict of interest.

Approximately 50 professionals from all regions and all segments of the onsite field are working to provide the industry with a model code that reflects the current advances to both the treatment technology and the administration of codes. Updates on the Committee's work are posted on the website, under the designated link. A message forum is provided for the public's input to these items. If you have additional questions, please contact either the committee co-chairs or NOWRA's headquarters office. ♦

WHITEWATER
The Difference is Clear

- Residential and Commercial Wastewater Systems
- Certified to ANSI/NSF Standard 40 Class 1
- Fiberglass or Concrete Construction Available
- Models from 400 to 1500 gallons per day
- Modular Systems Available
- Pre-Engineered Drip Systems, Electrical Control & Alarm Panels Available

Delta Environmental Products, Inc.

Call 1-800-219-9183 for more information, or visit online at www.deltaenvironmental.com

NOWRA LAUNCHES PROACTIVE LEGISLATIVE ROLE ON BEHALF OF MEMBER & INDUSTRY INTERESTS— LAYING THE GROUNDWORK FOR 2005

Linda Hanifin Bonner, NOWRA Executive Director

During the months of February, March, and into April, NOWRA officers and leaders in numerous state groups attended meetings, made presentations, and provided materials to legislative assemblies. These activities focused on making public officials aware of the issues and concerns about proposed regulations and legislative bills affecting the onsite industry. Occurring in the states of Ohio, Florida, Wisconsin, Minnesota, Maryland, Michigan, California, Louisiana, Virginia, (just to name a few) the issues ranged from special taxes placed on pumping, establishing new regulations, proposing education and training requirements, and developing uniform state codes. Meetings on the underground injection program, also occurred at the U.S. Environmental Protection Agency.

It is impossible to convey the number of hours spent by many, many individuals who prepared statements, made telephone calls, and attended meetings, or even to report on all of the ongoing work. Suffice it to say that NOWRA officials and representatives are indeed working hard to ensure that members of the onsite industry have a voice in the legislative and regulatory issues that affect their professions and livelihood.

The increase in activity this year is indeed an indicator that 2005 is going to require much more effort to continue to represent NOWRA members well. We are now preparing for the 2005 legislative year—and equally important is the fact that in 2004, a national election takes place—voting into office individuals who should represent our interests. However, elected officials or individuals running for office can only work on our behalf if we contact them and provide information about the issues and needs of the onsite industry.

NOWRA is doing just that! And we are going to take this action plan into another level—providing all state leaders with materials and instructions as to how to work with existing and new public officials to make them aware of the State's issues. This topic will be on the agenda of a planned meeting of state leaders in early August. The proposed meeting is scheduled to occur in Kansas City, MO. When details are available, information will be placed on NOWRA's website.

Excerpts of Presentations and Statements on 2004 Legislative & Policy Actions are provided.

MARYLAND— legislation proposing a tax on sewer bills and septic pumping to benefit nitrogen issues in the Chesapeake Bay – became nationally identified as "Maryland's Flush Tax"

House Bill 555 and Senate Bill 320 – represented legislation to establish a funding mechanism for improvements to wastewater treatment facilities, that would ultimately improve the water quality of the Chesapeake Bay and Atlantic Coastal areas. This fund would be established with fees from a tax placed on all users of wastewater treatment. Mid-way through the legislative session, an amendment was added that placed a \$20.00 per gallon tax on waste pumped from septic tanks.

NOWRA Executive Director Linda Hanifin Bonner and member Joe Link sent letters and attended legislative sessions representing the interests of the onsite and septic industry service providers, system designers, manufacturers and suppliers. A public statement was issued by the NOWRA Headquarters Office expressing major concerns with the initial versions of HB 555 and SB 320. This statement and subsequent letters

addressed the following issues and recommended additional items to be included in the bills.

- The need for funding for owners to replace older septic systems.
- The need for tax incentives to be applied to businesses for the use of higher levels of technology for cluster developments.
- State-wide requirements for a mandatory maintenance program, and customer education through service contracts of providers
- Certification requirements of all state regulators, licensed installers, inspectors and service providers be certified by national organizations with higher levels of credentialing than that of a state agency
- Establishing a state-wide database system that identifies and tracks the existence, ownership, maintenance and servicing of onsite and septic systems within the State.
- Ensuring that all septic and onsite system owners and users receive information advising them of their responsibilities to properly operate and maintain their units
- Developing a State of Maryland action plan directed to implementing the U.S. EPA Management Guidelines for decentralized and onsite systems.
- Restructuring the State's 10-year water and sewer planning process to take into consideration watershed management concepts integrating the use of onsite systems.

The MD State Water Quality Advisory Committee also presented recommended amendments that addressed some of these areas within its comments to the members of the respective House and Senate Committees. NOWRA went on record as supporting the MD SWQAC's position and recommended amendments to these bills.

The National Onsite Wastewater Recycling Association strongly supports the State of Maryland in its objectives to protect water quality and find financial resources to further the work of the Chesapeake Bay protection program. However, in addressing the nitrogen issues, NOWRA urges that the SWQAC-recommended amendments be accepted and NOWRA's concerns be acknowledged by the Committee, and that a defined structure and action plan be put in place that will effectively achieve the goals to fund programs to protect water quality.

UPDATE— The State of Maryland has passed the legislation, and NOWRA's Executive Director has been appointed to the MD State Water Quality Advisory Committee as an Industry Representative. Letters have been sent to the Governor and State Dept. of the Environment requesting that NOWRA's Executive Director be appointed to this new committee that identifies the method in which these funds will be allocated—specifically how are the onsite issues in Maryland are to be addressed.

OHIO— *Ohio House Bill 231* was first introduced on June 24, 2003, and was assigned to the Energy and Environment Committee of the House of Representatives. The primary sponsor of the bill is Rep. Tom Niehaus (R) of the 88th House District. For well over a year before the bill's introduction, Rep. Niehaus met with representatives of private industry and government agencies directly impacted by this legislation. He utilized the input he received and the concerns he heard from these individuals when he drafted HB 231.

After introduction, HB 231 was referred to the Regulatory Reform Subcommittee (a subcommittee of the House Energy and Environment Committee) for discussion and analysis. Testimony has been heard on the bill since September, 2003. During this legislative process, OOWA has been in direct contact with the legislators and many of the interested parties to address concerns we have had regarding requirements in the bill. The bill has been amended several times and was

referred out of the Regulatory Reform Subcommittee on March 23, 2004, as Substitute House Bill 231. The referral and discussion on Sub. HB 231 occurred on March 24, 2004, in front of the full Energy and Environment Committee. Several weeks of testimony followed in April. Nearly all of the testimony presented to the committee was in support of the bill. Representatives from many organizations such as the Ohio Department of Health (ODH), Ohio EPA, Ohio Environmental Health Association (OEHA), Ohio Environmental Council (OEC), Association of Ohio Health Commissioners (AOHC) and OOWA testified in a show of unified public health and industry support for the bill. Unfortunately, a representative of the Ohio Township Association testified against the bill, but his claims and opinions of the bill may not represent the majority of his association's membership. On April 28th, Sub. HB 231 was voted out of the Energy and Environment Committee by a vote of 12 - 1. The next step is to send the bill to the floor for a vote of the full House of Representatives. We have been advised that Senator Robert Gardner is prepared to carry the bill through the Ohio Senate after it passes out of the House of Representatives.

Sub. House Bill 231 will strengthen and improve the household sewage program in the State of Ohio. It will require the revision of our currently outdated Household Sewage Disposal Rules and will provide a mechanism to ensure that these rules coincide with current technology and industry practices. These rules will establish standards for household sewage treatment system (HSTS) siting, design, installation, operation, monitoring, maintenance and abandonment.

A Household Sewage Treatment System Technical Advisory Committee will be created to assist the Ohio Department of Health (ODH) develop guidelines for the approval and disapproval of new HSTS designs and products. Sub. HB 231 will allocate to the ODH the authority and resources to provide consistent statewide oversight of the household sewage program, while still allowing for flexibility at the local level. It will also require that

information on the HSTS design, operation and maintenance be provided, if requested, to the purchaser at the time of real estate transfer.

Passage of Sub. House Bill 231 would also represent an essential step in addressing the impact the USEPA's Phase II Stormwater Program is having on local household sewage programs. As a result of these stormwater requirements, thousands of property owners in Ohio currently utilize household sewage treatment systems that have been deemed "illicit." Without Sub. House Bill 231 and the required update of our current statewide household sewage rules, the Ohio EPA has advised that it can not move forward with the current version of its Draft General NPDES Permit for Household Sewage Systems. This permit would ultimately allow local health departments to address local water quality concerns and assist individual homeowners who currently are in violation of the Phase II Stormwater Regulations.

MINNESOTA— *House File 2040/SB2236 – Representative Mark Olson* There are two parts to this bill. The first is a slight modification to a current statute relating to warranted [sic] elements of septic systems. The initial statute was passed in 1997, repealed in 2001, and reinstated in 2002. This modification will allow for slightly modified, but similar, products to also be warranted. There is a \$1000 fee for each application. This section sunsets June 30, 2006. This language first appeared in HF2161 (Rep. Howse), and was incorporated into HF2040 when they were first heard.

The second part of the bill relates to a certain type of advanced wastewater treatment system, termed "biodigester and water reclamation systems," and establishes a new section of statute for its regulation. This system separates the toilet and food grinder waste from the rest of the wastewater generated in the home. Each waste stream is treated separately. The bill establishes definitions, and a certification program that includes testing and training. Once certified the system must meet certain specified

—continued on page 8

standards and is exempt from the plumbing code. The agency is to work with the MN Dept. of Health. Costs of review for both agencies are to be billed to the manufacturer, up to \$4000.

House File 2790 – proposed by Representative Mark Olson

This short bill is provided in its entirety:

- 1.6 Section 1. Minnesota Statutes 2003 Supplement, section
- 1.7 115.551, is amended to read:
- 1.8 115.551 [TANK FEE.]
- 1.9 (a) An installer shall pay a fee of \$25 for each septic
- 1.10 system tank installed in the previous calendar year. The fees
- 1.11 required under this section must be paid to the
- 1.12 county where the installation takes place at the time of
- 1.13 installation. By January 30 of each year, the revenue derived
- 1.14 from the fee imposed under this section must be sent to
- 1.15 the commissioner, and deposited in the environmental fund and is
- 1.16 exempt from section 16A.1285.
- 1.17 (b) A county may charge an additional fee of up to \$5 over
- 1.18 the fee in paragraph (a) in order to fulfill the requirements of
- 1.19 Minnesota Rules, chapter 7080.

The counties have not yet weighed in on how they feel about this bill, and there are unaddressed issues relating to collection of fees from permits issued by cities and towns.

Senate File 1900 – proposed by Senator Michael Jungbauer

This bill seeks to address the tendency of some ISTS Inspectors to be very conservative in their soils determinations. As the bill was introduced, it superseded the soils determination language in the code (7080.0110, sub 4, item D, sub item 5) with the requirement that only redoximorphic features associated with redoximorphic zones were to be considered as indicative of seasonally saturated soil.

The Senate Environment Policy hearing on this bill began on March 3. A delete-all amendment was added that made the senator’s original language something to

consider IN ADDITION to the soils criteria now in 7080. Time ran out and the bill was continued to Wednesday, March 10.

At this hearing, MOSTCA representatives testified that the bill was too vague, and suggested that more specificity be added. The MAPSS representative testified that Professional Soil Scientists would be best able to determine seasonal saturation when site indicators may be confusing. The University of Minnesota recommended additional training, rather than change in law. The bill was tabled, since several senators felt it was too technical to be in law.

At the close of the hearing, the bill was brought off the table, and a delete-all amendment put in that requires MPCA to address the issue of scattered redoximorphic inclusions in “exempt rules” by Jan. 15, 2005. Exempt rules are adopted quickly under MS 14.386 and are only in effect for two years. MPCA agreed to this amendment, and the bill passed on to the floor.

House File 2835 – proposed by Representative Jean Wagenius

Representative Wagenius introduced this bill to provide an incentive to homeowners who upgrade their ISTS. This bill gives a minor property tax benefit to property owners who, in response to a notice of noncompliance, upgrade their system between January 1, 2004, and December 31, 2008. It does this by reducing the assessed valuation of the property by 50% of the cost of the system, up to a maximum exclusion of \$7500. The actual dollar amount of the savings would be determined by applicable local tax rates.

This benefit would apply only to the following property classifications:
1a - homesteaded residential homes,
1b - any real estate homesteaded by virtue of being the dwelling for a blind or disabled person or a disabled veteran,
1c - commercial recreational real estate in lakeshore, 2a - homesteaded ag land,
4b - residential real estate, not homesteaded, that contains less than four units, and 4bb - residential real estate, not homesteaded, that contains one unit or is on a non-homesteaded farm.

CALIFORNIA–

The following paper was authored by the leadership of the National Onsite Wastewater Recycling Association’s Model Performance Code Committee. It is intended to provide state officials and the onsite industry with support to develop efficient and effective regulations towards the goals of protecting public health and water quality. The primary purpose of this statement, as developed, is to support the State and the California Onsite Wastewater Association (COWA) in their work to affect these issues. It was presented at the COWA May 17th meeting and to officials from the California State Water Resources Control Board. It is being printed in its entirety, as it represents the official position of NOWRA on the development and application of onsite system codes—and can be used by other states’ organizations to support their efforts with their legislative groups.

NOWRA, whose mission is to “protect and enhance water quality,” is a non-profit, 501-C(6) corporation. Its membership is comprised of affiliate state groups throughout the U.S., most of which have enacted some form of state regulations for onsite systems. California is one of the last two states working to adopt a state level onsite code. In drafting its code, California has the opportunity to avoid the mistakes experienced by others while emulating the successes of other state programs.

NOWRA is currently developing a national model performance code. This work involves more than 50 individuals representing all professional segments of the onsite industry, including regulators. Committee members represent all regions of the United States and Canada. NOWRA is willing to provide its national expertise to assist the State of California in developing its regulations. The following statements and information addresses many of the issues currently under consideration.

Section 1: Underlying Principles

While not readily recognized or admitted, the regulation of onsite systems is an application of risk management, not risk elimination. As a result, a there are

fundamental questions that must be answered and relating issues to be addressed when drafting an onsite or decentralized code.

- What is the risk associated with unregulated onsite systems – what is the problem?
- What is the purpose of the regulation?
 - a. High level purpose
 - b. Specific purpose

As written, the statutory purpose of AB 885 is to prevent "...a violation of water quality objectives, or [impairment of]... present or future beneficial uses of water, to cause pollution, nuisance, or contamination of the waters of the state."

(AB 885, s13291 (a)(4)) Therefore, this purpose needs to address several relating areas.

- What is the desired level of risk reduction?
- What are other contributors to the problem? What part of the problem is attributable to onsite systems?
- Will the contemplated rules achieve the objective? Will the surface and subsur-

face waters meet the standard of beneficial use after implementation?

- Will the public and private costs be reasonable and politically sustainable? (Costs include money, time and citizens' ability to use their land.)
- Will the regulatory community be able to implement the provisions reasonably—equitably, technically and politically? Will the agencies have sufficient resources?
- Will the onsite service provider community be able to implement the rules—sufficient trained personnel with the tools and treatment components necessary to do the job?
- To what extent, if any, do the rules represent a mixed motive, such as rural land use control?

Section 2: Choices

The State's choices for the regulation of onsite wastewater treatment systems are, 1) *prescriptive*, and 2) *performance code language*. Both approaches have advantages and disadvantages, as well as the option to incorporate elements of both

within a single state code. Within a state code, the following categories are subject to either performance or prescriptive language.

- Objects – treatment components
- People – certification
- Processes – permits, plan review, inspection
- Organizations – certification, standards and performance of assigned function.


Performance of the onsite industry, that is the regulatory process and industry providers, is also subject to review by the body politic. It answers the question—does the industry deliver the appropriate services at an acceptable private and public cost to the citizens?

Costs include the additional funds needed to install and operate approved systems and the citizens' ability to use their land. Benefits are the assumed enhancement in the human and natural environments as incremental advances in the quality of wastewater treatment are required.

—continued on page 10

L
A
R
G
E

T
A
N
K
S



18,000 Gallon Precast Concrete Tank

- Septic, Grease Interceptors, Holding Tanks
- Available in Sizes 750 to 40,000 Gallon
- Extra Heavy Duty Tanks—HS20 Loading
- Bituminous Coating, Fast, Efficient Setting
- Vacuum Tested, Water Tight Structures
- Tanks for Bio-Microbes and Nibblers, Sand Filters



1-800-325-8456

Visit us on the Web: www.wieserconcrete.com



Highway Culverts

3" to 48"

- Airport Runway/Parking Lot
- Golf Course Storm Drains

- Industrial Waste Water Applications

- Constructed Wetlands
- Landfill Drainage

- Sewer Sludge Compost Pipe

3" to 48"

SEPTIC SEWER DRAIN PIPES



Crumpler Plastic Pipe, Inc.

Plant Office: Box 2065
Reidsville, NC 28650
Phone: 810-625-1070
FAX: 810-625-5571

For the Best Quality and Service Call
WEB SITE: www.cpp-pipe.com

TOLL FREE: 1-800-334-5071

Assumed, because data has not been developed to support politically expensive marginal increases in wastewater treatment relative to measured improvements in public health and the environment.

For example, increasing prescriptive vertical separation distances in conventional drain fields from 3 feet to 4 feet is assumed to be safer but the health effect data either does not exist or has not been provided to regulators and citizens.

Similarly, reducing average pretreatment system nitrate levels from 15 ppm to 10 ppm is presumed to reduce risk but to what level? Both code shifts are expensive to many homeowners. Most codes provide solutions to un-quantified problems at unmeasured cost.

Prescriptive codes – are the traditional method in writing regulation, and are relatively easier to administer than performance codes. They have been administered in the past in a manner disadvantageous to citizens preventing the use of viable treatment system alternatives on some building lots, and affect the following areas.

- Specifying the means of accomplishing a specific task to promote a general objective such as protection of public health. Examples include specifying the design of a septic tank, a site constructed sand filter and a soil treatment/dispersal component, or requiring that all installers be licensed plumbers and all designers be licensed engineers.
- Prohibiting or severely curtail use of other designs.
- New designs are specifically prohibited
- Authorization for general use of new designs generally requires a code change
- Code work-around may allow a limited number of experimental systems and individual variances.
- Not specifying the quality of the final effluent of the operating system. The design of the installed system is instead “deemed to comply” with the code objectives.
- Tending to error [sic] on the conservative side by adding multiple design safety factors and redundant administrative procedures because of limitations of

knowledge about actual risk, by assumptions that other safety factors/procedures will fail or not be implemented and the regulator’s belief that under-specifying prescriptions creates more political risk than over-specifying. An example of this situation is requiring licensed engineers to design and supervise the construction of treatment systems and then requiring that all designs be reviewed and installations be inspected.

The primary problem with prescriptive codes has been their lack of flexibility and failure to focus on the operation stage of treatment systems.

1. The lack of flexibility affects owners of occupied and unoccupied building lots. Owners of homes with failing systems may be barred from using treatment systems successfully employed in other states, and are forced to live with sewage in the backyard—until the regulatory agency can modify the code or find a way to work around restrictions of their code through the use of variance, alternate and experimental approvals. Owners of vacant lots may not be able to build their homes because the soil conditions do not support an approved onsite design. Because code revisions take years (5-10 years are common), technology deployment is severely curtailed.

2. The lack of focus on the operation stage has involved the failure to require maintenance of the systems and the general indifference to the quality of the final effluent.

Performance codes – Decentralized onsite regulation has recently made limited application of “performance” provisions for several reasons.

- The ability to authorize additional treatment system designs on lots unsuitable for a conventional system.
- Establishing a quantitative link between the effluent constituent, values of the conventional system design and these alternate designs.
- Increasing the level of treatment over that provided by conventional systems in areas deemed as “environmentally sensitive areas.”

The distinguishing characteristic of a performance code is that it specifies the “ends” or results of a process, not the “means” of accomplishing it. For example, the code could establish a performance standard for treatment systems near a lake to achieve an average effluent value of 20 ppm of total nitrogen without specifying the means of achieving the result. Under this type of code, all proposed system designs that meet the standard are acceptable for use.

Several major program elements must be considered with respect to the performance of treatment systems.

1. Clear numeric or narrative performance standards are formally adopted, which may be in the code or as part of a permit.
2. Performance standards applied are linked to risk management needed at the site. The standard adopted is a function of the benefit (risk avoided) and the cost of achievement.
3. A method to evaluate the proposed treatment process to the adopted standard is provided, with three strategies for implementing the evaluation process.

a. “Deemed to comply” design – The system or component is evaluated as compliant with an adopted standard in lab and field studies. Systems that meet the performance standard are listed. Regulations that adopt the listing allow the use of the system as “deemed to comply” to the standard.

The main difference between prescriptive and performance codes are that prescriptive codes do not test designs to standards, they instead assume that the design meets general objectives like protection of public health. At this level of evaluation, prescriptive and performance codes are similar because neither pays much attention to operation management.

b. Operational management of approved systems – The listed system is maintained and inspected while operating. If the system is operating within specifications, the system is “deemed to comply” with the standard—without effluent sampling.

c. Effluent sampling – periodic samples are taken to determine compliance with the adopted standard. This step can be conducted in conjunction with the first two elements or stand-alone. Effluent sampling, if done frequently is the most direct quality assurance step to ensure the system is operating within effluent performance specifications.

However, effluent sampling has a number of major disadvantages when applied to small on-lot systems. First, it is very expensive if done appropriately. Because most onsite components have a high output variability due to input waste flow and waste strength variability, many samples are required to accurately characterize the performance of an individual system. The common practice of taking a sample once every 6 to 36 months is statistically unsupported.

The last treatment component in most systems is the soil. Taking samples after treatment in the soil is expensive, technically difficult and the monitoring devices

are subject to contamination from other sources.

The onsite industry will make a significant step forward if system operation management, combined with skilled site assessment and robust design is deployed. The degree of management attention should vary with technology risk and the potential site risk to the human and natural environments.

Application of performance provisions has also demonstrated the following additional characteristics.

- Performance codes are more difficult to administer than prescriptive codes because of the additional elements of design performance evaluation and attention to the operational stage of the treatment system life cycle.
- Performance codes are more favorable to citizens because a design solution is likely to be available for every site.
- Performance standards for onsite systems are often set without reference to other health and environmental risk

sources such as those found in agriculture/animal husbandry, storm water, urban sewage collection/treatment systems, natural flora and fauna, public assembly, kitchens and bathrooms, and wells that lower the water table to the point that surface water recharges the ground water. All sources of health and environmental risk generation need to be considered if an efficient and effective set of solutions is to be developed.

- The adopted performance standard should be linked to specific site risk reduction objectives to the extent possible. To require a specific homeowner to employ more treatment than is necessary relative to risk is a disservice, in that it can impose added (unnecessary) burdens on human, environmental or financial resources. To specify a standard for a site that is too low for the risk does not adequately protect the human and natural environments. Some regulators specify standards that would eliminate risk— 0 total coliform is an example.

—continued on page 12

THE FUTURE OF DRAINAGE ... NOW!

FRENCH DRAIN
RETAINING WALL
INTERCEPTOR
ROOF RUN-OFF
SEPTIC
FOUNDATION
LANDSCAPE

EZflow

SEPTIC SOLUTIONS

The patented EZflow geosynthetic aggregate is uniquely engineered with "flow channels" designed to increase void space — creating greater water flow and storage capacity.

The EZflow Internal Connector

TOLL FREE 1-800-649-0253
www.ezflowlp.com

RING
INDUSTRIAL PRODUCTS

Elimination of all risk is unlikely and is very expensive to implement. These zero-risk standards are seldom enforced. Because risk conditions vary by site and region, applied standards should also vary.

- Many regulators adopting effluent performance standards adopt very conservative standards relative to risk that are not politically supportable if uniformly enforced. Standards that are too strict are often ignored, subject to the *de facto* adoption of a sub-standard (enforced at 30 ppm nitrate instead of the adopted 10 ppm) or are selectively applied. The acceptable cost/benefit ratio of performance standards is primarily a political judgment.
- Performance standards are often advanced without a full exploration of either the benefits or the costs.
- The body politic has a level of tolerance for risk associated with onsite systems as demonstrated by the general public acceptance of sewage on the ground from failing onsite systems in many rural areas. While they would prefer that these situations be corrected they are unwilling to pay for the correction either out of private or public funds. They will accept stricter measures provided the problem is perceived, the solution is focused on the problem area and the private and public costs are reasonable.

Section 3: California State Code under AB 885

California has several strategic issues to be addressed in drafting and implementing a state level code.

1. *What treatment credit will be allowed for the soil component?* All soil dispersal components, either surface or subsurface, rely on the soil to treat and/or disperse the system’s effluent. The soil mechanisms currently recycle most organic matter deposited on land and can recycle household waste if appropriately applied, assuming sufficient soil and enough time. All of the soil treatment processes can be duplicated by pretreatment devices, at some cost and with extra human attention to the system’s operation. Adequate soil assessment is necessary to determine the capacity of the soil—

also at some cost. The advantage of soil treatment is that homeowners already own their soil treatment component.

2. *Will the code be a performance or prescriptive code with respect to: system/component design, personnel standards, administrative process and organizations?* The provisions of AB 885 allow the state to set minimum performance standards (the word “may” is used, not “shall”) and allow the regional authority to adopt stricter standards (13291(d), and/or to adopt exemptions (of state standards?) 13291(b)(6).

3. *If the state adopts performance standards for treatment systems, what level of standard will be adopted?* The state has several options to pursue to either adopt or implement.

- a. Statewide standards targeted at the lowest statewide risk levels and then encourage the regions and local governments to adopt stricter standards where they feel appropriate. This method is aligned with the concept of “minimum standards.”
- b. Statewide standards targeted at the state’s highest risk circumstances and then allow regional governments to adopt exemptions to the state provisions. The regional agencies can then adopt a lesser standard or no standard. They can also adopt a stricter standard than the state high standard.
- c. Statewide standard set at some midlevel risk condition. Regional and local authorities can then pass stricter standards, grant exemptions followed by adoption of a lesser standard or no standard.

4. *The same set of choices exists for prescriptive provisions.* For example, the state could set vertical separation distance for conventional systems at a minimum level—6-18 inches found in many states or a maximum level— 60 to 120 inches found in Arizona. Then the regional agencies can increase or decrease the distance. The assumed benefit of 120 inches is reduced health risk. Reduced risk (120 inches) should be observable in the health effects relative to higher risk separation distances (6-18 inches).

Unfortunately the issue has not been sufficiently researched to demonstrate the differences in health outcomes. There is however a significant cost difference to owners between vertical separation distances of 6-18 inches and 120 inches – the difference between the cost of a conventional design and an alternate design for a lot that does not meet the prescribed separation distance.

5. *Will the state, local/regional governments and the onsite provider have sufficient trained staff to implement the proposed code?* If major code elements are performance provisions, the labor and costs are expensive to implement for government agencies, unless the work is shifted to the private sector. The evaluation/audit process requires sufficient skilled staff to evaluate treatment technology, conduct plan review and construction inspection, perform site visits to ensure the systems are operating properly, and to take enforcement action.

6. *Will the body politic support the proposed state code?* This support includes code provisions and their enforcement, funding increases in public costs and in agreeing to pay the individual private costs.

7. *Will the water quality goals be achieved if the code is applied only to new and replacement systems?* Will the goals be achieved if the code is applied to all systems?

8. *How will the various treatment designs and manufactured units be evaluated against any adopted standards?*

Conclusions

The Model Performance Code being developed by NOWRA and its Committee will resolve most of the embedded problems within existing state codes that they are attempting to change. California has the ability to begin with a “clean slate” and to write a code that is not burdened by the common issues within existing state codes. NOWRA urges the State of California to use model performance code material and apply it to their new code. NOWRA’s committee, who is composed of national

experts from all sectors of the onsite industry and all areas of the country, including California, is available to assist with this endeavor.

The purpose of the draft Model Performance Code is to accomplish the following objectives.

- Provide a series of performance options for issues that affect the local human and natural environments, with
 - ~ Effluent performance standards that match local risk conditions, and
 - ~ Management attention to system operation—again, to match the local risk conditions.
- Establish national standards for the evaluation of treatment components and to list them to the various performance standards, that includes supporting,
 - ~ standardization at the national level of certification of service provider categories by recognizing certifications of other national associations and by developing NOWRA certification standards, and

- ~ national organizations, such as NOWRA, NSF, National Environmental Health Association (NEHA), and state agencies in the implementation of certification programs.
- Provide expert guidance and assistance to state and local governments adopting codes.
- Use the best science available to substitute for embedded tradition and myth in the industry.

The NOWRA Committee supports the adoption of effluent performance standards to the lowest level of responsible government for the following reasons.

1. Local governments are more likely to enforce performance standards that they adopt than a uniform state standard. This will diminish the gap between the letter of the law and the applied enforcement practices.
2. Local governments are better able to recognize variable risk conditions, the public's tolerance for regulation and the agency's capacity to implement regulations.

3. The state can still influence the local decisions through the development of the Total Maximum Daily Load (TMDL) process and other state level guidance. Within the State of California, a broad diversity of climates, natural features, commercial activity and population densities currently exists. The nitrate-nitrogen standard is a good example of the advantage of local adoption of a standard. Local regulators are in the best position to translate any TMDL or other risk conditions into a performance standard—for example, a dense subdivision with shallow wells and high groundwater versus scattered rural housing in areas of intense agricultural activity where 150 pounds of nitrogen/acre/year application is common (An adult human contributes about 10 pounds annually to the environment).

As a result, performance standards are more likely to be accepted if they are focused on areas where public perception is that the status quo is undesirable and a standard to solve a problem is supported.

—continued on page 14

Concrete Tanks

Septic Tanks
Nibbler Tanks
Bio-Fast Tanks
Pump Chambers
Grease Interceptors
Recirculation Tanks



Large Tank Sizes - Gallons
 2,000 - 3,000 - 5,000 - 6,000 - 8,000
 10,000 - 12,000 - 15,000 - 18,000 - 25,000

Quality Products and Nationwide Service

CREST

Precast Concrete

1-800-658-9045

EMAIL: crestpc@presscenter.com
 WEB: www.crestprecastconcrete.com



**AMERICAN MANUFACTURING
Company, Inc.**
www.americanonsite.com

Bull Run Valve™
Dial-A-Flow™
Perc-Rite® drip equip.
Timer Controls



Toll free: 1-800-345-3132
 P.O. Box 549 Manassas, VA 20108

In contrast, an attempt to apply a strict statewide standard for nitrate in low risk areas will generate a major political problem as it has done in other states. Other states have experienced significant opposition from citizens when adopting a statewide nitrate standard because in many areas, especially in scattered housing and agricultural areas, the perceived cost and benefit was out of balance.

It is also probable that current regional and local governments have insufficient trained staff to implement a full performance code and within the current fiscal environment are also unlikely to increase staffing levels. California regulators should consider the following actions to achieve their goals.

1. Shift much of the extra work to the private sector. All functions from plan review to construction inspection and monitoring operations can be accomplished by private sector agents who are supervised by government auditors.
2. Encourage COWA to initiate legislation requiring a certification program and continuing education. Because the cost of developing a valid certification program for a single occupation is larger than most states are willing to invest, the certification programs should be performance based and developed by national professional associations such as NOWRA, the National Environmental Health Association (NEHA) and others. State regulations should then require certification and recognize the association certification programs. Most state regulatory programs currently recognize third party certifications and standards such as the National Sanitation Foundation (NSF) Standard 40. Most state-operated certification programs

have a difficult time enforcing the terms of the certifications.

Under this proposal, two levels of certification enforcement can be provided:

- a. the associations/standards groups can enforce their requirements, and the state and
- b. local regulators can enforce the requirements of their codes.

State associations can then provide training programs and assist the national organizations in the administration of the certification programs.

3. Take advantage of the functions being developed by the NOWRA Model Performance Code Committee. The model code process is developing a number of tools that may be useful to the development of the California onsite code.

NOWRA has developed a series of matrices to classify treatment components by their output characteristics. These classification levels can be adopted as performance standards to match the local conditions. Components that are listed on the NOWRA matrix could then be approved for use without further state evaluation. This process is similar to that deployed for most other building related equipment, such as electrical, plumbing and water and air cooling/heating systems. The development of the evaluation and classification systems is largely complete and the first designs are being run through the process to test the instrument.

NOWRA has also developed a system to evaluate treatment components based on test and field data. Components are then

listed in the performance classification matrices. This process is in the final development stages. California will need to assess the effectiveness of the hundreds of treatment and distribution devices in their code. A cooperative venture between California and NOWRA would be mutually beneficial.

NOWRA is in the process of developing soil treatment credit tables that will determine the quality of pretreatment needed to meet adopted final effluent standards. The soil component is one of the primary treatment devices in the vast majority of treatment systems. The soil is owned by the homeowner and is available to provide significant levels of treatment if properly evaluated and utilized. California will need to have a mechanism to recognize treatment capability of the soil component.

Unlike prescriptive codes that set vertical and horizontal separation distances, the NOWRA code uses the full volume of soil available to calculate treatment credit. The evaluation of the treatment component will focus on the type of soil, the retention time within the treatment zone, access to free oxygen (its presence or absence is important to treatment of different constituents), and the presence or absence of organic material. Designers will be able to trade off increased area for decreased depth, or balance reductions in both in exchange for reduced loading and pretreatment.

In conclusion – a cooperative venture between California and NOWRA will be mutually beneficial and should be seriously considered by those working on the state code. ♦



NOWRA Meeting with US EPA Defines Actions on UIC Regulations

A delegation of NOWRA leaders—Linda Hanifin Bonner, Michael Corry and Michael Hines—met with EPA Directors James Hanlon and Cynthia Dougherty and their staffs from the Offices of Wastewater Management and Drinking Water to address NOWRA's concerns regarding how States perceive the implementation of UIC regulations. During the March 26th meeting, several examples were provided to EPA of situations where the interpretation of these regulations by state officials are affecting the installation of onsite systems—specifically cluster systems for communities. Key points were made by NOWRA officials during the meeting.

- NOWRA shares EPA's interest in promoting water quality with onsite systems and in fostering Management Level IV and V deployment of cluster treatment systems.
- NOWRA is concerned that the current UIC rules and the intended administration by all levels of government—federal, state and local—is putting the cluster design at a competitive disadvantage to the on-lot subdivision design (surface and subsurface).
 - ~ Current UIC rules set practically unachievable performance standards, especially the 0 total coliform standard. While technically achievable, the cost of implementation requires an economy of scale unavailable to small cluster designs and, even as applied to large installations, would erase any advantage of cluster design over the on-lot subdivision design or surface disposal.
- The rule provisions and performance standards are not being uniformly applied in the field; instead the use of an ad hoc and case-by-case application approach is being applied, both in a manner that exceeds the authority of

the rule in some cases, and fails to implement in others.

- ~ The point of standards application is uncertain and is being widely interpreted. The language of the rule is being interpreted in the field as requiring the point of standards application at the d-box, the last sampling point prior to injection.
 - ~ The absence of criteria for the approval of initial and renewal permits will cause many developments, especially smaller developments, to opt for the on-lot subdivision design.
 - ~ Permits are being denied for mixed motive reasons—land use control.
 - ~ Existing rule language only recognizes traditional conventional design of a septic tank and drain-field. Cluster systems employing secondary and tertiary treatment components are treated in the same manner as conventional design.
- It is apparent to the onsite industry that many permit reviewers at the federal, state and county government levels are unfamiliar with onsite technology, treatment processes and capabilities.
 - Application of standards at the d-box negates the utilization of the soil component of the treatment system. The inability to utilize the soil for treatment will place soil dispersal at a competitive disadvantage to surface disposal designs, because the performance standards for surface dispersal are less stringent, and it is less costly to surface discharge than subsurface discharge.
 - The UIC rules are being implemented, modified and interpreted by many units of government in unique ways. The lack of policy guidance is apparent to NOWRA members.

—continued on page 16

Participants in the development of this Position Statement included:

Michael F. Corry, *Chairman, NOWRA Model Performance Code Committee (MPCC)*
Michael Hines, *Chair, EPA Level IV/V Subcommittee of the NOWRA MPCC*
Linda Hanifin Bonner, Ph.D., *NOWRA Executive Director*
Robert B. Rubin, Ph.D., *Professor & EPA Consultant*
E. Jerry Tyler, Ph.D., *Co-chair, Soils Subcommittee of the NOWRA MPCC*
Del Mokma, *Co-chair, Soils Subcommittee of the NOWRA MPCC*
Raymond Peat, *NOWRA Vice President*
James Converse, Ph.D., *NOWRA Education Committee Chairman*
Jerry Stonebridge, Ph.D., *NOWRA Director*
Kevin White, Ph.D., *Professor & member of the Soils Subcommittee of the NOWRA MPCC*
Randall Miles, *Associate Professor & member of the Soils Subcommittee of the NOWRA MPCC*
Ted Loudon, Ph.D., *Professor, University of Michigan*
Larry T. West, *Soils Scientist & Professor, West Virginia University*

Participants in the NOWRA & EPA March 26, 2004 Meeting included:

NOWRA
Michael F. Corry
Linda Hanifin Bonner

EPA
James Hanlon, *Office of Wastewater Management (OWM)*
Michael Hines
Sheila Frace, *Municipal Division Director*
Elizabeth Coor, *UIC Division Director*
Joan Harrigan Farrelly, *UIC Branch Chief*
Phil Zahreddine, *Branch Chief, OWM*
Joyce Hudson, *Engineer, OWM*

NOWRA Proposals

NOWRA proposes to assist the US EPA in addressing this process in a number of ways, as a partner, in order to achieve the common goal to encourage and foster the utilization of Management Level IV and V cluster systems.

- NOWRA will establish a certification program for EPA Level IV and V Responsible Management Entity (RME) organizations—performance standards, certification and audit certification. NOWRA will provide training and technical assistance to these organizations. (An unsolicited proposal for EPA consideration was also delivered)
- NOWRA will provide training courses in onsite treatment technology and

soils science to federal, state and local government UIC staff; and will also establish a certification program for UIC regulatory staff at state and local levels.

- Through the unanimous adoption of a resolution on February 24, 2004, NOWRA's Board of Directors proposes to establish a liaison committee with EPA headquarters on UIC and other relevant issues, through the memorandum of understanding with quarterly meetings to address emerging issues and define successful strategies to achieve the above goals.

NOWRA requested that the U.S. EPA pursue the following actions.

- Publish clear guidance to UIC enforcement staff stating that the

soil is an integral treatment component of onsite systems.

- Modify the current UIC rules to clearly recognize soil treatment and to clearly set forth the point of standards application.
- Further, to clarify that the UIC rules apply to only public water supply designated source areas.
- Accept the NOWRA's soil treatment credit tables currently being developed by the NOWRA Model Performance Code Committee.
- Provide NOWRA with financial assistance to develop the proposed programs. ♦

NOWRA STATE LEADERS WORKSHOP

**AUGUST 4-5, 2004
KANSAS CITY, MISSOURI
Watch the website for details.**

NOWRA APPLICATION FOR 2005/2007 BOARD OF DIRECTOR POSITIONS

In 2004, there will be 5 positions on the NOWRA Board of Directors to be filled.

The position categories include: regulator, service provider, manufacturer, designer/engineer, and academic. State groups and individuals are encouraged to apply for serving in this role. Directors and officers who serve in these positions, do so on a voluntary basis, and are not financially compensated for this work.

Expectations/Roles & Responsibilities of NOWRA Board Members

- Participating in 4 meetings (that includes a 2-day strategic planning session); reading relevant materials, providing timely responses and policy direction
- Serving as an active liaison and mentor with state groups on topics
- Contributing your time in a leadership role on committees and special task groups when requested
- Providing guidance and direction to the NOWRA Board on the issues representing your industry sector or organization's positions.

Application Process

Potential candidates should prepare a letter to the NOWRA Nominations Committee c/o Executive Director. The letter should include:

- a statement of your desire to be considered for one of the positions within a specific category, and understanding of the commitment to fulfilling the expectations, roles and responsibilities as a member of the Board of Directors,
- your current employment, professional title, and position,
- number of years of work or affiliation within the onsite industry, and relevant expertise and/or credentials.

In addition, please provide a brief statement that answers the following questions.

- Any specific area of interest you desire to work with the NOWRA Board on industry issues and how you will make a contribution
- **Why you are willing to serve on NOWRA's Board as a leader in the onsite industry**
- Your perspectives on the directions that NOWRA as an organization should consider in order to increase its leadership role in the industry
- What are the critical issues that NOWRA's should be addressing on behalf of its industry members

Send this information by August 1, 2004 to NOWRA's Executive Director, Linda Hanifin Bonner, either by mail (PO Box 1270, Edgewater, MD 21037) or email: lhbonner@hanifin.com

State Group Happenings

Colorado

Colorado Professional Onsite Wastewater Association Holds Board Meetings and Workshops on May 13, 2004 in Golden, CO.

The workshops in Golden and Grand Junction were a great success with a total of 155 registrants. The workshops were also financially successful. Exhibitors and speakers who were the most significant part of the success and cannot be given enough THANK YOUs!

The next CPOW meeting will be a part of the Colorado Environmental Health Association (CEHA) Annual Education Conference in Breckenridge Colorado September 29 - Oct 1, 2004. CPOW will have a meeting on September 30 at the conference. There is a one-day OWS track on September 30th.

Bylaws are being finalized and elections are being planned for the September meeting. A November meeting is also in the planning stage to develop a Strategic Plan for CPOW. The website construction is proceeding. Check in at www.cpow.us for progress.

Ed Church
303.463.9317
echurch@geo-church.com
www.geo-church.com

Missouri

Missouri Small Flows Organization announces its 8th Annual Conference & Exhibition—scheduled to occur Tuesday & Wednesday, January 18 - 19, 2005—Columbia, Missouri

Contact for more details and registration:
David Casaletto, Program Coordinator
Table Rock Lake Water Quality, Inc.
P.O. Box 606 2 Kissee Avenue
Kimberling City, Missouri 65686
417-739-4100 Fax: 417-739-9889
Cell: 417-230-2111

Michigan

Michigan Onsite Wastewater Recycling Association
Larry Stephens

In the last issue of the Onsite Journal (Jan/Feb 04), it was reported that Michigan Gov. Granholm requested the state legislature to “develop a uniform state code in 90 days.” While the timeframe appears unrealistic, her request has brought about a flurry of activity, and the effort is indeed on a fast-track schedule—at least for the moment.

A task group with representation from about 2 dozen stakeholders’ organizations has been formed and is meeting every two weeks. There continues to be a lot of support for moving ahead with

the effort. In addition, MOWRA has about 5 members representing various organizations on the task group, which has resulted in the ability to contribute valuable information and perspective to the process.

The state’s committee is working its way through a number of issues in an attempt to gain consensus one-step at a time. One of the first issues addressed was the training and certification of practioners --- designers, regulators, contractors, inspectors, and service providers. There was strong agreement among the group that this was a needed and appropriate task to pursue.

The last meeting was spent on the subject of system inspections and management. It appears that while most agree that some extent of O&M is necessary, there is a wide disparity of opinion as to how aggressive such a program should be. This overall effort fits with some of NOWRA’s efforts nationwide—particularly the effort to establish a program to train and qualify/certify practitioners. MOWRA, with NOWRA’s support, will continue to represent industry members in this regard. Watch for updates on MOWRA’s website.

Louisiana

Louisiana Initiatives – Hitting the Ground Running
Brenda Guy

There are many exciting developments occurring in the Onsite Wastewater Industry in Louisiana with several manufacturers selling in the state and over 600 installers and service providers currently licensed by the state health department.

Recently a group of interested parties consisting of representatives of NOWRA, (representing several NOWRA constituent groups), LOWA (Louisiana Onsite Wastewater Association) and the ADWA (American Decentralized Wastewater Association), met to address a wide range of needs and to make recommendations to improve the decentralized wastewater industry in the state.

The group met with health officials to present their recommendations for improving the education program for installers and service providers as the centerpiece of their agenda. The program will be submitted through the Administrative Procedures of the Louisiana Health Department for adoption into the Sanitary Code and will address the following training areas:

Initial Training for first time license:

Classroom and practical demonstrations on the following topics:

- | | |
|------------------|---------------------------------|
| -Sanitary code | -Understanding soils |
| -Septic tanks | -Limited use systems |
| -Oxidation ponds | -Aerobic treatment plants |
| -Overland flow | -Lift stations & holding tanks |
| - Sprinklers | -Maintenance |
| -Disinfection | -Manufacturer specific training |

—continued on page 18

... State Group Happenings ...

Refresher Course (every two years) licensed installers:
Classroom and practical demonstrations

- Sanitary Code changes
- Record Keeping
- Maintenance
- Maintenance Contracts
- Manufacturer specific training and refresher
- Questions and answers on topics of interest

It is hoped that adoption and implementation of the CEU program will significantly contribute to membership in the fledgling LOWA (Louisiana Onsite Wastewater Association) state group which has plans to join NOWRA as soon as possible.

The Louisiana group is also working with legislators to pass two new pieces of legislation. The first measure has to do with establishing a "Maintenance Only" license for service providers, and the second requiring that before property can be transferred, the onsite system must first undergo an inspection by an approved service or maintenance provider. Documentation of the inspection would have to be presented by the mortgage company at closing.

Michigan

Minnesota Professional Onsite Wastewater Association

Annual Conference was held March 5, 2004 with 50 members in attendance. The membership has grown by 30% in MPOWR's second year. Guest speakers at the annual conference included Raymond Peat, Dave Lindbo and Richard Otis. MPOWR also elected the following four new board members, who represent other groups.

Professional Soil Scientists: James Balogh; Spectrum Soils
Installers: John Kurkosky; Alley Excavating
Government Officials: Brett Ballavance; MPCA
Maintenance Service Providers: Merlin Brisbin; Sewerman
MOSTCA Representative: Eric Larson; Septic Check

MPOWR is now planning a large conference scheduled to occur in Duluth, MN, in early April, 2005. ♦



NOWRA FUTURE CONFERENCE DATES



14th Annual Technical Education
Conference & Exposition
October 10-13, 2005
Cleveland, Ohio, Marriot Town Center Renaissance

2006 - NOWRA TO HOST
ITS FIRST INTERNATIONAL CONFERENCE!
Details are in progress.



2004 Sponsorships Deserve a Round of Applause!

NOWRA wishes to recognize and thank our member companies who, through their support of the new Business Benefit Package, have already committed as sponsors for the 13th Annual Conference and Exposition in Albuquerque, New Mexico.



Oreco Systems
Delta Environmental Products
Bio-Microbics, Inc.
Consolidated Treatment



Wieser Concrete
American Manufacturing Co.
Geoflow, Inc.
Netafim USA
Sta-Rite Industries
SJE Rhombus Controls



E-Z Set Tank Company
Hoot Aerobic Systems, Inc.
Gast Manufacturing Inc.
Zoeller Pump Co.
Xerxes Corp.
Rietschle-Thomas Sheboygan, Inc.
Infiltrator Systems
Ecological Tanks, Inc.

In Memoriam: Kenneth Everett “Ken” Zoeller



Kenneth Everett “Ken” Zoeller, 59, of Louisville, Kentucky, died unexpectedly of a heart attack on Saturday, May 8, 2004, while traveling in Taipei, Taiwan, on business.

Born December 10, 1944, Ken was the son the late Edward Jerome “Jerry” and Marie Zoeller. He was a lifelong resident of Louisville, and an active member of St. Polycarp Catholic Church. Ken graduated from DeSales High School and the University of Louisville, where he received an associate's degree in engineering technology and a bachelor's degree in commerce after 15 years of night school. (Now that is perseverance.)

Ken worked for 37 years at Zoeller Company, a local manufacturer of sump, sewage and effluent pumps and wastewater treatment systems. He served the company in many capacities over the years, from toilet scrubber to president, but most recently as vice president in charge of engineering. Ken held nine patents related to pump technology on behalf of the company and had two pending at the time of his death. He was active in membership and leadership in the Sump & Sewage Pump Manufacturer's Association, the National Onsite Wastewater Recycling Association (serving as a director and secretary-treasurer) and the Kentucky Onsite Wastewater Association.

Although devoted to always making things better, that focus and drive did not hinder deep relationships with all whose paths Ken crossed. His commitment motivated his volunteer work, just as it drove his career. His activities included leadership in the Dixie Kiwanis Club since 1976, serving as its president in 1980 and 1981. With his Kiwanis friends, he volunteered for the St. Vincent de Paul Soup Kitchen and Hazelwood Center and slung hot dogs at Bats' games to benefit the Western High School Key Club. Ken also served on the board of the Southwest YMCA and taught Junior Achievement classes. He served as a YMCA Safe Place volunteer from its inception. He was an active member of DeSales High School's Finance Committee.

He loaded and unloaded countless instruments for the Pleasure Ridge Park High School marching band when his children, Dominic and Monica, were members—and managed not to break any!

“Like everything in Ken's control, he ran a tight instrument transport ship. We all had to carefully follow the rules of the efficient ‘Zoeller’ system. He served humbly in all these activities, from his heart, with his head, ready to do the right thing and help others do their best beside him.” Ken was proud of his children, his grandchildren and the quiet strength he saw in his wife, Marian. “Our friendship with him got better over time—it grew from an acorn to a mighty oak. He was our oyster—rough on the outside but inside a precious pearl of a heart wrapped in softness that required a deeper look to recognize. Those who looked deeper grew to admire and respect him.”

Ken is remembered by his family for giving strength, hope and love to his wife Marian. Theirs was an uncommon bond, forged in hardship and hard work with an ever-present faith; for giving guidance, nurturing support and loving discipline to his children, Dominic and Monica; for giving love and support to their spouses Amanda and Todd; for his love of Shelby, Morgan, Spencer and Davis; and the joy he had in playing with them and watching their ways. He is also remembered for his generosity, his commitment to trying to do whatever he did better, for being a “bull in a china shop”; for how he appreciated a good joke, a game of cards, a fishing trip, a great big bowl of ice cream, a run or bike ride with Bill and Carole Sanders and a “noogie on his noggin” before parting. “We love you and will forever miss you Ken, Pops, Big Daddy, Papa Ken, until the day when we join you and the hole in our hearts, in our souls, is once again filled.”

Ken is survived by his beloved spouse of almost 39 years, the former Marian Evangeline Martin of Louisville; his son, Dominic Allen Zoeller of Midland, MI, his wife, Amanda Lea (Mattingly), and their two beautiful and smart daughters, Shelby Nicole and Morgan Elaine; and by his daughter, Monica Elaine (Zoeller) Henderson, Esq., of Louisville, her husband, E. Todd Henderson, Esq., and their two handsome and sharp sons, Spencer



Ken Zoeller and the Zoeller Company have been strong supporters of the Ohio Onsite Wastewater Association (OOWA) and NOWRA. Ken allowed Matt Byers, an employee of the Zoeller Company, to serve as OOWA's mentor when this NOWRA constituent group was just getting started in Ohio. Ken also served as a presenter at OOWA conferences and at Ohio State University training programs for onsite professionals. Ken Zoeller will be greatly missed as a strong leader in the onsite industry.

—Jean Caudill

Ken Zoeller did much for the onsite wastewater field. He contributed to onsite-related organizations, both state and national. He had real passion for this field. His contribution is not unlike the many of you who are working hard to see the profession grow correctly. He will be remembered for his honesty (you always knew where you were with Ken), faithfulness (ask his wife of 39 years), hard work, boisterous manner (you know what I mean), unique wit, and much more. Any person Ken met has a ‘Ken’ story. These stories are generally colorful and indicate we were dealing with a true eccentric, in the best sense of the word. The profession has grown due to Ken and folks like him. He will be dearly missed. What would Ken say about this situation? “Shit happens, let's get on with life.”

—Matt Byers



Cruse and Davis Edward. His grandchildren lovingly called him “PaPaKen.” Ken is also survived by his mother, Marie Ruth (Richards) Zoeller; sisters, Marjorie Zoeller Crone, Lisbeth Zoeller Perez (Manuel), Christine Zoeller-Hill (Mike Hill) and Theresa Zoeller Evans (D. Keith); and brothers, Reverend Thomas Zoeller of Ontario, Canada, Anthony M. Zoeller and William A. Zoeller (Marisa).

Ken and Marian's second family grew from their decades-long commitment to Teams of Our Lady fellowship group. May God bless these brothers and sisters in Christ Jesus: Bill and Carole Sanders; Steve and Jan Smith; Tony and Connie Peerce; Bob and Marilyn Beam; Mike and Mary Clapp; and the Reverend Joseph Merkt. His funeral Mass was held Monday, May 17, 2004, at St. Polycarp Catholic Church. Memorial contributions may be made to The Kenneth E. Zoeller Memorial Fund, c/o The Cerebral Palsy School of Louisville, Inc. (The Mattingly Center), 1520 Baxter Avenue, Louisville, KY 40205. ♦

CHANGING PROCEDURES FOR SYSTEM FIELD EVALUATION IN SUPPORT OF WATER QUALITY & EFFICIENCY

*An Opinion Message from Mike Corry, Co-Chair,
NOWRA Model Performance Code Committee*

The recent California COWA Annual Conference raised the issue of sampling individual home systems for conformance to performance standards. Failure to meet standards in two consecutive samples would require an upgrade of the system. Other state codes require a sample every 6, 12 or 36 months for some applications.

After reading the Converse/Nordheim paper (ASAE 2004 Proceedings, page 343) my previous suspicion has been confirmed that these test protocols on individual systems to determine compliance to a performance standard based on mean or midpoint values are harmful, expensive and otherwise useless with respect to the evaluation of an installed OWTS system. Specifically, if the practice were proposed in a student's statistics term paper, it would earn the student a well deserved grade of F. The Converse/Nordheim paper should be very valuable for code developers and the onsite community when establishing protocols to evaluate onsite system designs.

Further, the protocol (number of sites and number of samples each) for the evaluation of designs should be a function of the cost of the process, who is paying, the risk to the human and natural environments of a classification error, and the consequence of a decision to the individual homeowner or the company involved.

Currently, the onsite industry uses the field sample data two ways: (1) to approve/reject a treatment design, and (2) to test a single system for compliance to a performance standard. The comments below illustrate the value of the first approach and the problems with the second.

1. Product Approval/Rejection

The company involved has hundreds of thousands of dollars tied up in R&D and another \$80,000 or so in the evaluation process. The example used in the Converse/Nordheim paper involves a system whose true mean (2.6 log fecal coliform) exceeded the standard (3.0 log) by a large measure, yet it also had a 10.7% chance of rejection in error at 4 samples at each of 12 sites. At 20 samples and 30 sites the chance of a false reject or acceptance is 1.63%. I don't know the cost difference between this range of evaluation protocols. My guess is that the companies will pay for more a extensive evaluation to avoid the risk of a rejection in error, especially if they need to go through the test only once, not with repeated evaluations in many states and counties.

On the other hand, the chance of a false acceptance with a system's true mean of 3.4 is also 10.7%. That we are discussing error rates of 10% as acceptable means that the consequence of the error of false acceptance to the public is relatively small. So on balance the decision of the number of samples and the number of sites primarily affects the companies submitting for review. I suggest that the evaluation process should be designed to support a higher confidence level and smaller error rate for both the benefit to public and the submitting companies.

2. Individual Home Testing

While the Converse/Nordheim table does not extend to the probability of error for a one site/one sample evaluation, I suspect that the probability of error is huge. The consequence of this 1N testing protocol to the homeowner is the cost of the test (wasted money to pay

for the test) and if the samples randomly fall above the adopted standard and results in the repair or replacement of the system, the consequence to the individual can be very expensive, and can be repeated each time a sample is taken.

RECOMMENDED PROCEDURAL CHANGE!

It is recommended that the onsite industry get out of the business of testing effluent of single home systems, as the required procedure to determine the compliance of the system to a performance standard. The reality is that most agencies ignore these test results because of the built-in error rate and the cost consequences of enforcement against the homeowner. The result of the current practice is that law-abiding citizens who submit the sample information are unwitting participants in a statistically invalid and expensive exercise.

The recommended change is that the industry and regulators instead rely on robust evaluation at the national level and concentrate local attention on management and service of operating systems. Further, when we evaluate the performance of a design in the field, then an appropriate number of sites should be selected (volunteers with some type of incentive) with the costs paid by the evaluation agency.

Comments and opinions on this topic are requested. Please go to NOWRA's website—the model performance code page—and enter your opinions into the message file. ♦



NEWS RELEASE
VILLAGE OF
INDIAN POINT, MISSOURI

The Board of Public Works for the Village of Indian Point, Missouri, has enacted a set of Rules and Regulations that establishes an immediate and permanent ban on new septic tank and lateral systems while also phasing out all existing septic systems during the next ten years. The purpose of the new regulations is to provide for the safe and healthful construction, operation, and on-going maintenance of all private and publicly owned wastewater treatment systems in the Village of Indian Point.

The Village of Indian Point is a resort and residential community situated along a 3-mile peninsula on Table Rock Lake located in the Ozark Mountains of southwest Missouri. A popular vacation destination, Indian Point is home to Silver Dollar City, a major theme park, and is also known as "The Naturally Fun Side of Branson, Missouri," the tourist town famous for its large variety of live entertainment. Indian Point is favored among vacationers and residents alike for its natural beauty, fishing, boating, water sports and numerous outdoor activities. The Village of Indian Point, through the efforts of citizen-volunteers, has long strived to protect the subterranean water supply and preserve the pristine lake environment that are crucial to its tourism economy and quality of life.

However, the lake-side community has faced some daunting challenges developing cost-effective wastewater systems. Recent studies have indicated that septic tank and lateral systems are not suitable in the ledge-rock and shallow soil conditions that are typical of the Ozark's geology. Also, several efforts to develop large centralized sewer systems were too expensive due to the high costs of building long collection lines through the steep and rocky terrain. With the lessons learned from several false starts as well as investigation by the

citizen-volunteers into alternative treatment systems, the Village determined that it's most cost-effective solution to wastewater treatment would be a consolidated approach to decentralized wastewater systems.

The Village soon discovered that this approach posed a new challenge in that centralized management of decentralized wastewater systems, both public and private, had never been done before anywhere in the nation. Again, with further investigation by its citizen-volunteers and guidance by Mr. Leland Neher of the Missouri Department of Natural Resources in Jefferson City, the Village learned that the EPA had recently developed model guidelines for the management of decentralized wastewater systems. However, none of the guidelines had yet been implemented and so no working set of rules and regulations existed. While researching these documents for the Village, the volunteers were referred to attorney Elizabeth Dietzmann of Rolla, Missouri, who specializes in rural water and wastewater issues. Ms. Dietzmann was familiar with the EPA guidelines and recognized that a set of rules and regulations that would be administered by a Board of Public Works could be developed to meet the wastewater management and performance criteria established by the Village. The Village hired Ms. Dietzmann to work with the citizen-volunteers in developing the rules and regulations together with Stone Environmental, a consulting firm based in Montpelier, Vermont, that has experience in developing systems for managing environmentally sensitive areas.

The result of this multi-year effort by the Village of Indian Point to ensure proper wastewater treatment in its community was the creation of the Board of Public Works in January of 2004 and the adoption of its Rules and Regulations in March 2004. These Rules and Regulations created for centralized management of decentralized public and private wastewater systems are the first

of their kind in the nation. They provide a model that can be adapted and applied in other communities in Missouri and throughout the nation. The Rules and Regulations were developed by the efforts of citizen-volunteers with \$44,479 in funding from the Village of Indian Point for legal and consulting services. Since the Board of Public Works enacted the Rules and Regulations into law they are now part of the public record and so they are available at no cost to other communities who want to follow the Village of Indian Point's lead.

Key provisions of the Board of Public Works Rules and Regulations include:

1. An immediate and permanent ban on new septic tank and lateral systems.
2. All existing septic tank and lateral systems must be phased out during the next ten years under the guidance and assistance of the Village of Indian Point Board of Public Works (BPW).
3. All existing wastewater systems without an operating permit from the Missouri Department of Natural Resources (MDNR) must be inspected and issued annual operating permits from the Village of Indian Point Board of Public Works (BPW).
4. All existing wastewater systems with an operating permit from the Missouri Department of Natural Resources must be inspected and copies of the MDNR operating permits, testing reports and other correspondence with the MDNR must be provided to the BPW.
5. Any existing wastewater systems that are demonstrably failing, in disrepair or otherwise not in proper working order must be either repaired, upgraded or replaced with wastewater systems as approved by the BPW.
6. Any changes or repairs to existing wastewater systems requires a permit

—continued on page 22



...in the news

INDIAN POINT, *continued*

from the BPW to be issued upon the approval by the BPW of the type and design of the proposed changes or repairs.

- The construction of any new wastewater systems requires a permit from the BPW to be issued upon the approval by the BPW of the type and design of the proposed systems. The BPW will provide guidance as to the type and design of wastewater systems that may be approved.

A full copy of the Rules and Regulations is available at the Village office for a nominal fee. They may also be downloaded free from the Village of Indian Point's web site at <http://indianpoint.us/bpw.htm>

For additional information contact: Kathy Isaacs, Administrator for the Village of Indian Point, Missouri, at (417) 338-5599. ♦

OSWAP LOAN PROGRAM SURPASSES ONE MILLION DOLLARS IN SEPTIC SYSTEM LOANS

MASON CITY – With the completion of a septic system update near Mason City last week, the DNR's Onsite Wastewater Systems Assistance Program (OSWAP) surpassed one million dollars in septic system loans to rural Iowa homeowners. Since its inception in July of 2002, the program has completed 178 loans in 50 counties, at an average of \$5,600 per loan, for a total of \$1,000,519 in loans.

OSWAP offers low-interest loans, at a maximum rate of 3 percent, through participating local lenders to homeowners who need to replace failing or inadequate septic systems. With an estimated 100,000 substandard septic systems in Iowa, replacement of those systems is key to improving Iowa's water quality.

The owner of the updated septic system, Rob Heimbuch of rural Mason City, received an OSWAP loan through the First National Bank of Mason City. The new septic system, installed by local contractor Rex Liekweg, was permitted and inspected by the Cerro Gordo County Health Department.

The septic system includes a 1,000-gallon septic tank, followed by 300 feet of soil absorption laterals that provide secondary treatment of household wastewater. It replaces an inadequate septic system with a collapsed septic tank that discharged untreated

wastewater into an agricultural tile line. Septic tank discharges to open ditches, ravines, and underground tiles are illegal in Iowa.

"Both inadequate and failing systems can pollute groundwater and surface waters with nitrates, viruses and bacteria, such as E. coli, all of which are present in domestic sewage that carries human waste," said Steve Hopkins, DNR environmental specialist. "These systems pose a particular threat to children, as well as adults with compromised immune systems, who are exposed to untreated wastewater. Children can come into direct contact with untreated sewage when they play in road ditches, backyards or creeks that have illegal septic tank outlets piped to them."

OSWAP loans are available for homeowners with existing homes located in unincorporated areas, for loans of between \$2,000 and \$10,000, for a maximum repayment period of 10 years. To qualify for an OSWAP loan, applicants must first obtain a septic permit from the county sanitarian, then apply for a loan through a participating lender. Lenders may reject an application if the applicant cannot demonstrate an ability to repay the loan.

After a participating lender approves the loan, the new septic system can be installed and inspected by the county sanitarian. The OSWAP financial agent then transfers a deposit from the Onsite Wastewater Assistance Fund (OSWAF) to the local lender to subsidize the loan interest rate. The homeowner then repays the lender for the loan.

The OSWAF is a revolving loan fund authorized by the Iowa Legislature and funded by state appropriations and the U.S. Environmental Protection Agency Clean Water Act.

For information about participating lenders and counties, visit the OSWAP Web page at www.onsiteiowa.com. For more information, contact Stephen Hopkins, DNR environmental specialist, at 515-725-0346, or your county sanitarian. ♦

FROM SEWER TO SEPTIC
 . . . and every need in between.

Zoeller has your Solutions!

64 years of Strength, Value, Diversity and Integrity.

Ask for our complete catalogs for:
 Zoeller Pump Company Products . . . form F40532
 Zoeller On-Site Products . . . form F41600.

ZOELLER PUMP CO. 1-800-928-PUMP
www.zoeller.com

WERF TO RELEASE NEARLY \$2 MILLION IN RESEARCH FUNDING

The Water Environment Research Foundation is issuing four requests for proposals (RFPs) totaling nearly \$2 million in funding for water quality research. All qualified applicants are encouraged to apply. Proposals must be received by July 23.

The RFPs are:

Fats, Roots, Oils, and Grease (FROG) in Centralized and Decentralized Systems (RFP No. 03-CTS-16T): This project will determine the best design criteria for grease interceptors based on characteristics of fats, oils, and grease. This research will investigate the effectiveness of interceptors and evaluate the effect of different waste through these systems, while evaluating different root structures and their detrimental effects on sewer systems.

Develop Protocols for Assessing the Condition and Performance of Water and Wastewater Assets (03-CTS-20C): Will develop condition and performance assessment protocols for both water and wastewater utility assets including collection, treatment, and distribution works. These standardized guidelines will help collect comparable data sets and permit benchmarking metrics, and will provide a handy tool for utilities to meet their compliance needs with GASB 34 requirements.

Influent Constituent Characteristics of the Modern Waste Stream from Single Sources (04-DEC-1): Will review previously published research on onsite system influent characterizations and conduct a study on identified knowledge gaps. This research will result in improvements to onsite systems design and support informed decision-making.

Developing Better Indicators of Pathogen Presence in Waste Matrices (03-HHE-2): Will compare the accuracy, advantages, and disadvantages of existing indicator organisms with proposed indicators in wastewater, stormwater, and biosolids. If successful, alternative organisms will provide better indicators of public health impacts, more accurate tools for setting appropriate standards, and more effective monitoring of water and biosolids, leading to increased confidence in the quality of effluent and residuals.

Additional RFPs will be posted later this year. To sign up to receive regular notification of funding availability, go to http://www.werf.org/community/email_signup.cfm.

WERF research is awarded through a competitive process and coordinated under contract through a staff-assigned project manager. WERF encourages submission of proposals from all qualified entities, including consulting firms, wastewater utilities, industrial firms, wastewater equipment manufacturers, universities, and non-profit organizations performing research in the water quality field.

The RFPs are available on the WERF website at www.werf.org.

For more information, contact: Elizabeth Striano, WERF (703) 684-2470, ext. 7908

The Water Environment Research Foundation, a not-for-profit organization, helps its subscribers improve the water environment and protect human health by providing relevant science and innovative, cost-saving technologies for improved management of our water resources. ♪

ATTENTION DELTA/ WHITEWATER CUSTOMERS

Who purchased UV Wastewater Treatment Units from Delta which did not contain the Label of UV "The Disinfecter"; these units are not the product of UV The Disinfecter Inc.,

And neither the UV The Disinfecter Inc. nor Ken Moody are responsible therefore.

CUSTOM COMPRESSOR SOLUTIONS

Thomas rotary and linear compressors and pumps provide rugged, long life, custom solutions for all demanding wastewater applications.



**Rietschle
Thomas**

For a custom solution to your application needs call Rietschle Thomas, the first name in custom compressors.
Rietschle Thomas Monroe, Inc., 4001 Central Avenue, Monroe, LA 71203
Tel: 318-338-5050 Fax: 318-338-0185
www.rtpumps.com

ORENCO'S INJECTION-MOLDED FIBERGLASS TANKS SET NEW INDUSTRY STANDARD

Sutherlin, Ore., April 30, 2004 — Since Orenco Systems®, Inc. introduced its injection-molded fiberglass tanks in late 2003, nearly 1,000 have been installed. Orenco manufactures its fiberglass-reinforced polyester (FRP) tanks using a highly automated injection-molding process, which produces perfectly uniform tank halves that are easily assembled into lightweight, yet strong, watertight tanks.

Orenco's tank assemblers test every tank for watertightness following assembly. Orenco also requires installers to test every tank for watertightness once it's in the hole. The 1,500-gallon tanks can withstand a vacuum of 11 to 13 in. Hg, and the 1,000-gallon tanks can withstand 13 to 14 in. Hg — simulating more than twice the pressure that bears on an empty tank buried four feet deep with water to grade and a 2,500-lb. wheel load.

Able to accommodate various configurations of risers, pump vaults, effluent filters, and pumps, the tanks are suitable for use in many kinds of decentralized wastewater



treatment systems. In fact, Orenco's ability to supply strong, watertight tanks opens up new possibilities for designers planning such decentralized systems — systems that must have watertight tanks to be successful. "If local and national standards required tanks to be watertight and structurally sound, and if those requirements were enforced, onsite and decentralized systems would be accepted more widely than they are," said Eric Ball, Orenco's vice president of product development.

Orenco Systems, Inc. has been designing, manufacturing, and selling products for decentralized wastewater collection and treatment since 1981. The company now employs about 225 people and distributes its products throughout the United States, Canada, New Zealand, and parts of Europe and South America.

For more information, contact: Gail Elber, (800) 348-9843, x217

XERXES, LLC Established

(Minneapolis, MN) – Today a new business entity called Xerxes, LLC has been formed which will include certain assets of Xerxes Corporation of Minneapolis, Minnesota, and Containment Solutions, Inc. of Conroe, Texas. The new entity will maintain company headquarters in Minneapolis. In addition to continuing to supply fiberglass underground storage tanks and fiberglass aboveground storage tanks, Xerxes, LLC will offer Hoover steel aboveground storage tanks and an extensive Field Service operation.

Xerxes, LLC will begin operations officially on August 2, 2004.

The Xerxes, LLC underground storage tank product line will utilize the Xerxes Corporation technology. Manufacturing will continue at the four facilities currently operated by Xerxes Corporation: Hagerstown, Maryland; Anaheim, California; Tipton, Iowa; and Seguin, Texas.

Xerxes, LLC is committed to carry on Xerxes Corporation's 25-year history of values and service to the petroleum, chemical, and water/wastewater markets.

For more information, contact: Tom Tietjen at 952-887-1890.

FOR IMMEDIATE RELEASE

SJE-Rhombus and Fergus Power Pump, Inc. announce that they are jointly marketing the Fenton SludgeMASTER® RK Class A/EQ biosolids treatment system to Pumpers who are interested in processing their own septage/biosolids to reduce operating costs. Fenton Environmental Technologies, Inc. has over 15 years of experience in industrial and municipal sludge drying and has over 600 dryer installations in the US. This packaged, turn-key dewatering and drying system enables pumpers to process their septage/biosolids at a fraction of the cost of disposal fees at municipal treatment plants or landfills. The processed septage/biosolids meets Class "A/EQ" biosolids that have unrestricted fertilizer/soil amendment uses.

The SludgeMASTER® RK DD system, contains a high quality decanting centrifuge and a proven indirectly heated sludge dryer completely integrated and assembled on one skid. The centrifuge and dryer can also be purchased separately.

The SludgeMASTER® RK system features:

- Capability to treat 720 -9,000 gallons per hour of septage/biosolids with 2-30% total solids.
- Automated, turn-key system with minimal operator attention and skill level required.

For more information please contact Karen Borgeson, 1-888-DIAL-SJE (1-888-342-5753) or visit our website at www.sjrhombus.com.



EARLY CONFERENCE PROGRAM ANNOUNCEMENT & REGISTRATION

NOWRA's 13th Annual Technical Education Conference & Exposition

Decentralized Systems—The Changing World of Wastewater Treatment—Recycle, Reuse & Reclaim!

November 7-10, 2004 • Hyatt Regency Albuquerque & Conference Center • 330 Tijeras NW, Albuquerque, New Mexico 87102

NOWRA's 13th Annual Technical Education Conference takes place this year within the beautiful surroundings of Albuquerque, New Mexico. All events will be held at the Hyatt Regency Hotel and Conference Center, located just 5 miles (10 minutes) from Albuquerque International Airport. Shuttle transportation is available for easy access. During the week, guests staying at the Hyatt Regency will have transportation to local shops, restaurants and sites in the Albuquerque area provided by the hotel. Two blocks from the hotel is the historic Route 66 entertainment district; Old Town Plaza is one mile away and the Rio Grande Zoo is one-and-one-half miles away!

Again this year, attendees will participate in technical education sessions providing continuing education credits (CEUs), additional knowledge and skills to support their ongoing professional development. NOWRA's technical exposition provides opportunities for meeting manufacturers and distributors from all over the United States to learn about new products and equipment with distributors. Nearly all events and non-session-related activities occur in the Exposition Hall.

Join onsite industry professionals at the most important and influential water quality event of the year!

NOWRA offers an unparalleled educational and training experience to individuals committed to achieving water quality results with decentralized systems; it also provides the largest and most comprehensive exposition of manufacturers and products in the States.

NOWRA's **PRE-CONFERENCE WORKSHOPS**, widely recognized for their in-depth expertise, feature presenters who have years of experience in establishing onsite wastewater systems for homes, cluster and business developments. This year, two pre-conference workshops will be held—each focusing on essential information for the onsite industry. **Installer Training for Onsite Systems** addresses the installation practices of available technologies within the onsite industry. It is designed to update service providers on the skills needed to ensure water quality protections. **Re-using, Recycling, and Reclaiming Wastewater** is a session designed to give attendees insights into the applications of existing and new concepts with valuable case studies illustrating examples of ongoing operations.

TECHNICAL EDUCATION SESSIONS provide a valuable opportunity to become knowledgeable about the latest technology from industry leaders. All theories need to be applied in the field and these professionals value your input. After all, the best systems are the ones developed in the classroom and laboratory by the universities and proven in the field by the contractor.

NETWORK with onsite industry colleagues throughout the United States who share your commitment to protecting and enhancing water quality.

IMPORTANT CONTACTS are made through interaction with colleagues, manufacturers and representatives in the onsite

industry. Over 100 exhibiting companies are expected to be on hand to answer questions and demonstrate cutting-edge technologies and services at NOWRA's exposition.

CONTINUING EDUCATION sessions provide experiential learning from comprehensive technical sessions and workshops. Experts in the onsite industry present the latest information on every topic necessary to advance your professional development.

HIGHLIGHTS

NOWRA Pre-Conference Workshops
Sunday, November 7, 2004 - 8 a.m. to 5 p.m.

INSTALLER EDUCATION AND TRAINING

In today's environment, competent practices and procedures for the installation of onsite systems is a major priority. For NOWRA, this program represents the initial steps to a new education and training program, scheduled to occur in 2005. This comprehensive session provides participants with valuable information on the basic components of the installation process. It is a "MUST ATTEND" for all professional service providers. Following the workshop, participants attend NOWRA's Technical Exposition to visit equipment manufacturers and suppliers. 6 CEU's are provided for this session.

RE-USING, RECYCLING, & RECLAIMING WASTEWATER WITH DECENTRALIZED SYSTEMS

This day-long workshop provides basic information on water and nutrient balance in reuse; microbiology of recycling/reuse; EPA Reuse guidelines, challenges for large and small scale systems; and, case studies on small and large recycling systems, and reuse of treated wastewater. The workshop also addresses integrating decentralized wastewater management concepts into large, urban centralized wastewater infrastructure. The day-long program concludes with a panel discussion addressing many of these topics. 6 CEU's are provided with this session.

Monday, November 8, 2004/Tuesday, November 9, 2004
NOWRA Technical Sessions, including Onsite A to Z

Wednesday, November 10, 2004

8 a.m. to noon

Presentation of the NOWRA Model Performance Code
8 a.m. to 3 p.m.

NOWRA Field Trips – Continuing Education Units (CEUs)

Up to 30 continuing education contact hours may be earned by attending the conference. Forms to submit to your state for approval of Continuing Educational Units from the conference will be available at the Registration Desk. Check with your state to confirm that NOWRA's Conference Education Sessions are approved as meeting its requirements.

See NOWRA's Website for Additional Updates.

The regular conference registration fee includes access to all education sessions, break refreshments, the Technical Exposition, Exhibitors' Welcome Reception (Sunday evening), NOWRA's Member Recognition & Awards Luncheon with invited guest speaker, Honorable William Richardson, Governor, New Mexico (Tuesday afternoon), Wednesday's Special Industry Workshop—Presentation of the NOWRA Preliminary Model Performance Code—and Conference Proceedings.

The daily registration fee covers the one-day access to education sessions and seminars, the Exposition, refreshment breaks, and Conference Proceedings.

Guest fee includes access to the technical exposition, Awards Lunch, Exhibitors' Welcome Reception, Hospitality Area, and refreshment breaks.

DATES AND DEADLINES

Registrations at the rates identified below must be RECEIVED by the dates listed.

Early/Reduced-rate Registration:

On or before August 31, 2004

No reduced-rate registrations will be accepted after August 31, 2004.

Regular Registration:

September 1 through October 22, 2004

Late/onsite Registration:

October 23 through November 7, 2004

REGISTRATION PROCEDURES

- Materials will be provided at the conference registration desk.
- No phone-in registrations can be accepted, although changes in previously made registrations may be handled fax or by phone with a follow-up fax.
- Registration forms may be mailed with a check (payable to NOWRA) or credit card payment information, or faxed with credit card information. All pre-registration forms must be received by October 22, 2004, and be accompanied by payment in full in order to be processed.

CANCELLATION POLICY

Registrations must be in writing, and are refundable until October 22, 2004, but will be charged a processing fee of \$50.00. No cancellations are accepted after October 22, 2004 and no refunds will be given after that date.

NOWRA MEMBERSHIP

If you are not a current NOWRA member* but would like to become one, you may purchase a 2004 membership through your state group at \$20.00 or a 2005 NOWRA membership on an individual basis at \$140/year and save on the conference price!

* NOWRA membership is held on an individual, nontransferable basis. To register at member rates, you must have a current (2004) membership paid in full. All current members have been sent 2004 membership cards and numbers. To verify your membership, check with your State group or go to the NOWRA website and follow the instructions provided.

Student fee includes conference registration and a student membership in NOWRA through 2004. Students must be attending college or graduate school full-time in a course of study related to onsite wastewater technology.

CONFERENCE CHECK-IN AND REGISTRATION HOURS

Hyatt Regency Albuquerque Conference Center—

2nd level Atrium Area next to the Enchantment Exposition Hall

NOWRA Pre-Conference begins Sunday, November 7, 2004, at 8:00 a.m.

NOWRA Conference ends Wednesday, November 10, 2004, at 3:00 p.m.

Exhibitor Registration and materials will be available for pick-up on Sunday, November 7, 2004, at 8:00 a.m.

CONFERENCE FEES (Mon-Wed)

NOWRA Members and Partnering Organizations**

Early (on or before August 31, 2004) - \$375.00

Regular (September 1 - October 22, 2004) - \$425.00

Late/At Conference - \$475.00

Non-Members

Early (on or before August 31, 2004) - \$475.00

Regular (September 1 - October 22, 2004) - \$525.00

Late/At Conference - \$575.00

Daily Conference Rate –

NOWRA Members and Partnering Organizations**

Early (before August 31, 2004) - \$250.00

Regular (September 1 through October 22, 2004) - \$275.00

On site at Conference - \$300.00

Daily Conference Rate (Non-Member)

Early (before August 31, 2004) - \$300.00

Regular (September 1 through October 22, 2004) - \$350.00

Late/At Conference - \$400.00

Special Student Fee (includes NOWRA membership) - \$125.00

**NOWRA Partnering Associations include: The National Association of Wastewater Transporters, the National Environmental Health Association, the National Ground Water Association, and the NDWRCD Project

CONFERENCE FEES, continued

Two Pre-conference Workshops

Members - \$175.00 (before October 22, 2004)

On site - \$225.00 (after October 23, 2004)

Non-Members - \$225 (before October 22, 2004)

On site - \$325 – (After October 23, 2004)

Pre-registration is required in order to receive the workshop handouts.

Other Fees

Guest - \$75.00

(includes awards lunch & opening reception, hospitality room and gift)

Saturday, Nov. 6, 2004 GOLF Tournament

Individual \$100.00 Foursome - \$400.00

Foursome/Hole Sponsor - \$500.00

Sunday, Nov. 7, 2004 – Opening Reception

[early] \$30.00 [on site] \$40.00

Monday, Nov. 8, 2004 – Prayer Breakfast - \$15.00

Tuesday, Nov. 9, 2004 – Awards/Member Recognition Luncheon

[early] \$40.00 [on site] \$55.00

Wednesday, Nov. 10, 2004 – Onsite Systems Field Trip - \$75.00

(includes box lunch)

PRELIMINARY CONFERENCE SCHEDULE

HYATT REGENCY HOTEL
ALBUQUERQUE, NEW MEXICO

	Saturday-Nov 6	Sunday-Nov 7	Monday-Nov 8	Tuesday-Nov 9	Wednesday-Nov 10
7:00-8:00		Workshop and Exhibitor Registration	Conference Registration	Conference Registration Committee Meetings	
8:00-9:00	NOWRA Board of Directors Meeting	Pre-Conference Workshops Sendero & Enchantment	Opening General Session Sendero Ballroom	Exhibit Hall Open 8:00-12:00	Post Conference Session
9:00-10:00		Exhibitor Set-up Grand Pavilion Ballroom and Enchantment Rooms	Exhibit Hall Open All Day for Public—Contractors, Realtors, Builders	Technical Sessions 9:00-12:00	Technical Field Trips
10:00-11:00			Technical Sessions 10:00-12:00		
11:00-12:00					
12:00-1:00	NOWRA Golf Tournament	Conference Registration Opens		AWARDS LUNCH Sendero Ballroom	Consortium Meeting
1:00-2:00			Technical Sessions 1:00-5:00 p.m.		Board Meeting 1:00-3:00 p.m.
2:00-3:00				Technical Sessions 2:00-5:00 p.m.	
3:00-4:00					
4:00-5:00				Exhibit Hall Break Down 4:00 p.m.	
5:00-6:00	Registration Open for Workshops & Exhibitors	Exhibit Hall Opening Reception	Committee Meetings 4:30-6:30 p.m.		
6:00-8:00					

NOWRA'S 13TH ANNUAL TECHNICAL EDUCATION CONFERENCE & EXPOSITION CONFERENCE RESERVATION FORM

Last Name (please print)	First Name	Name for Badge (if different from first name)	
Company/Organization			
Street Address			
City	State/Province	Country	Zip/Postal Code
Daytime Phone	Fax Number	E-mail	
Membership Number		Section Number	

CONFERENCE REGISTRATION FEES: "Early Bird" Registration rates end August 31, 2004. Regular Registration is from September 1 through October 22, 2004. On site Conference Registration rates begin October 23, 2004 (at Conference)

REGISTRATION FEES <i>Late registration is AT CONFERENCE ONLY</i>	Early on or before 8/31/04		Regular 9/1 – 10/22/04		Late 10/23/04		Total
	Member/Partner*	Non-Member	Member/Partner*	Non-Member	Member/Partner*	Non-Member	
Pre-Conference Workshops (Sunday only) Sunday, Nov. 7, 2004 Please check the workshop you are attending. Pre-registration is required in order to receive the workshop handouts. <input type="checkbox"/> Installer Qualifier Education/Training <input type="checkbox"/> Recycling/Reuse & Reclaiming Systems	\$175	\$225	\$175	\$225	\$225	\$325	_____
Conference (Mon-Wed) NOWRA Members and Partnering Organizations*	\$375	\$475	\$425	\$525	\$475	\$575	_____
Daily Conference Rate NOWRA Members and Partnering Organizations* Please check the day you are attending. <input type="checkbox"/> Monday <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday	\$250	\$300	\$275	\$350	\$300	\$400	_____
Special Student Fee (includes NOWRA membership)	\$125	\$125	\$125	\$125	\$125	\$125	_____
Other Fees Guest (includes Opening Reception, Awards Luncheon, Hospitality Room and gift)	\$75	\$75	\$75	\$75	\$75	\$75	_____
Sunday, Nov. 7, 2004 – Opening Reception	\$30	\$30	\$30	\$30	\$40	\$40	_____
Monday, Nov. 8, 2004 – Prayer Breakfast	\$15	\$15	\$15	\$15	\$15	\$15	_____
Tuesday, Nov. 9, 2004 – Awards Luncheon	\$40	\$40	\$40	\$40	\$55	\$55	_____
Wednesday, Nov. 10, 2004 – Onsite Systems Field Trip (includes box lunch)	\$75	\$75	\$75	\$75	\$75	\$75	_____
Saturday, Nov. 6, 2004 – Golf Tournament (Please fill out complete golf registration, pg. 10)	Individual – \$100		Foursome – \$400		Foursome/Hole Sponsor – \$500		_____
TOTAL AMOUNT ENCLOSED							
*NOWRA Partnering Associations include: The National Association of Wastewater Transporters, the National Environmental Health Association, the National Ground Water Association, and the NDWRCD Project.							

Mail completed form with check (payable to NOWRA) or fax your registration with credit card information. Registrations are only accepted with full payment in U.S. dollars. After October 22, 2004, registrations are only accepted at the Conference. \$50 processing fee for returned payments.

NOWRA Conference Registration
 P. O. Box 1270 • Edgewater, MD 21037-7270
 or fax credit-card-paid forms to (410) 798-5741
 Please duplicate this form for additional registrations.

PAYMENT INFORMATION

Fed. ID Number: 593099430

Check Visa MasterCard (\$50 processing fee for returned payments)

Card No. _____ Exp. Date _____

Name on Card _____

Signature (required) _____

Pmt. Recd _____	Entered _____
Confirmed _____	

SEE WEBSITE FOR ONLINE REGISTRATION INFORMATION • • • INQUIRIES: 800-966-2942

EXHIBITORS—There's still space!

DOWNLOAD the full conference brochure at NOWRA's website - www.nowra.org
2004 Conference

OR you can call 1-800-966-2942 to have a copy of the brochure mailed or faxed to you.



13th ANNUAL TECHNICAL EDUCATION CONFERENCE & EXPOSITION

ALBUQUERQUE



NOVEMBER 7-10, 2004

HYATT REGENCY ALBUQUERQUE
CONFERENCE CENTER

Installer Friendly Series™

Introducing a **NEW** line of control panel that makes installation and programming pump control **EASY**. The **Installer Friendly Series™ (IFS)** panels feature a simple, easy-to-use touch pad on the lower door for programming pump control. At a glance, you can see pump functions, including: flow status, pump run indicators, elapsed time meter(s), cycle counter(s), **HAND/OFF/AUTO** and more! Tonal dosing panels include a built-in timer with a 5-digit digital display for hour/minutes. Available from your distributor!



*White supplies kit.

Get a **FREE IFS t-shirt** with any **Installer Friendly Series™** control panel purchase. IFS t-shirts are included **FREE** in each panel box*. Size **M**.

SJE-Rhombus
CONTROLS

LL
Pending

1-888-DIAL-SJE (1-888-342-5753) • Fax: 218-847-4617
www.sjerrhombus.com

Fiberglass Septic Tanks

As a leading manufacturer of underground storage tanks, Xerxes Corporation offers a wide range of fiberglass tanks specifically designed for wastewater/septic applications. Xerxes is a major supplier to many of the world's largest oil companies, with more than 100,000 tanks in service for petroleum product storage. With a long history of innovation and excellence in design and manufacturing, Xerxes tanks are an increasingly popular choice for a variety of water and wastewater applications as well. From residential homes to commercial and industrial facilities, Xerxes provides a full line of structurally sound, watertight tanks.

Features and Benefits:

- 800- to 60,000-gallon sizes
- Rustproof, long-lasting fiberglass
- Watertight
- Testable for watertightness
- Structurally strong
- Lightweight, easy to install
- H-20 Load Rated
- Competitively priced



Four manufacturing facilities nationwide!

For more information, visit www.xerxescorp.com.
(952) 887-1890 phone • (952) 887-1882 fax

XERXES®
CORPORATION



National Onsite Wastewater Recycling Association

Onsite Journal

P.O. Box 1270 • Edgewater, MD 21037

PRSRT STD
U.S. POSTAGE
PAID
Permit #273
ANNAPOLIS, MD



Single Family Dwellings



Clustered Subdivisions

Better Water FAST.

FAST[®] wastewater treatment systems are simply great technology.

Fixed Film Aerobic Treatment

Proven, safe, reliable...a cut above.

Nitrogen Reduction

Unsurpassed treatment in a single tank.

Repairs Failed Septic Systems

Simple repair with minimal site disruption.

Flexible Design

Many sizes and affordable options.

Tell us about your project and we'll help you make better water...FAST[®].

FAST wastewater
treatment
systems
with SFR.

BIO-MICROBICS
INCORPORATED



High Strength Commercial



Failed System Renovation