



# Onsite Journal

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National Onsite Wastewater Recycling Association

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Volume 12, No. 3  
June-July 2003



◆ **Conference  
Program**

**Announcement: *Decentralized Systems—  
The Changing World of Wastewater Treatment***

◆ **The Industry's Need for Education & Training**



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# Onsite Journal

## National Onsite Wastewater Recycling Association

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# HEADQUARTERS UPDATE

Linda Hanifin Bonner, Ph.D.,  
Executive Director

NOWRA's programs, especially the 2003 Annual Technical Education and Exposition, are well underway. Again, we are emphasizing the professional education and training opportunities available for NOWRA members. Many states are now focusing on the "educational requirements" of providers in the onsite industry; and

never before has this work been so important. We want to emphasize the availability of NOWRA's technical education and training programs that can be provided for areas where facilities are not present, and can be conducted in locations convenient to government agencies. Please call Headquarters for more information.

The Model Performance Code being produced by the NOWRA committee will affect virtually everyone within the decentralized industry once it is published. The importance of this work is evidenced by the quality of the participants involved in its development, who are recognized national experts and leaders from all sectors of the onsite industry. Its credibility is also enhanced through the financial sponsorship and support of private industry members, state government officials, onsite associations and the U.S. EPA. Its influence with practitioners and political officials will enable it to serve as a point of comparison with currently adopted codes in the industry. Ideally, it will be adopted as regulation. *(Please note the special pre-conference workshop being held on November 3, 2003.)*

NOWRA's new website will also provide more updated technical information for industry members and the general public. Other important features are the availability of messaging—sending inquiries directly to NOWRA Board and Committee members; meetings can be conducted on line, and hopefully the online conference registration process will be completed and ready by September 2003. As with many new endeavors, we may have a few "glitches" in the transition process and getting all of the information updated. We anticipate that they will be quickly resolved, and appreciate your patience.

## 2004 Marketing/Advertising: Onsite Journal – Website

The next issue of the *Onsite Journal* will feature 2004 Advertising rates for the journal and website. Response to our 4-color advertisements has been great; and with sufficient support we will be able to continue it into 2004.

## 2003 Conference & Exposition— SOLD OUT? WOW!

If this milestone event represents a prediction about the November program, then by all indicators it should be NOWRA's greatest success. PLEASE take notice in the Exposition Section of the exhibitors planning to be at the conference and bring your questions and list of items with you. In addition, the Technical Education Program will have great case studies, reports on new research, and updates on regulations and legislative activities. Social events are well planned and registrations are already beginning to arrive. We look forward to seeing you—so mark your calendars for November 3-6, 2003, in Franklin, Tennessee.

## NOWRA's New Website Premier with Model Performance Code Committee Work

Hopefully by the time this message reaches you, NOWRA's new website is appearing on your screen. The primary catalyst of this effort is the work of NOWRA's Model Performance Code Committee. The purpose of this expansion is to enable regulators, public officials and interested parties to participate in and become more knowledgeable about this work. This work is sponsored by the National Water Resources Capacity Development Project, whose mission is to fulfill the work of the onsite industry, and has been an invaluable support to NOWRA.



## Editor's Note

*As we prepare for NOWRA's 2003 Technical Education Conference, a core message loudly heard from industry regulators, educators and members is the need for education and training. The authors of the articles in this issue identify these needs from their professional perspectives.*

*You will note that "state updates" is a bit slim (as in "MIA") this issue; the reason—this is the busiest time of the year for many of the onsite industry service providers. This is only temporary—in the fall, meetings begin and program activities take on new energies. Be sure to check the Calendar on page 28 for upcoming events and training opportunities. NOWRA President Tim Frank's regular message—"Frankly Speaking"—will return next issue as well.*

*The next Journal issue features LEGISLATION—Preparing for 2004, RESEARCH & SOLIDS MANAGEMENT. Your articles are encouraged and welcome.*

**2004 NOWRA  
Conference Location—  
Albuquerque, New Mexico**

Plans are underway for the 2004 Technical Education Conference & Exposition in New Mexico, with a projected time frame of early November. New Mexico was selected for several reasons—supporting the growth a New Mexico constituent group, addressing regional issues, and reaching other public officials not familiar with NOWRA. A site visit has been conducted to inspect the convention center and various hotels. Dates and related information will be provided shortly.

**Board Meeting Update**

The June 11, 2003 Board of Directors meeting during the NEHA Conference set into action a number of important events and activities. Highlights of these items noted below will be reported on in greater detail as they are further developed.

**Governance Task Force**—how the Association governs itself; representation on the Board; committee functions and even membership development are all a part of the work that this group will address. Chaired by Raymond Peat, NOWRA Vice-President/President Elect, this group will embark upon their work this fall.

**Corporate-Business Memberships**—An examination of the membership for businesses—small and large—is currently underway, with information to be presented to the NOWRA Board of Directors this fall.

**Installer Education and Training Certification Program**—The Board approved the offer to participate with the National Environmental Health Administration (NEHA) to develop an installer education and training program for onsite systems. NEHA has received a grant from the U.S. EPA to produce this certification program, and has asked NOWRA to join it in this work. ♦

# *The Local Regulator and “The Business of NOWRA”*

*by Ralph Benson, R.S.*

**L**ocal regulators often face huge and sometimes impossible challenges – that are as varied as the areas in which they reside. Similarly, circumstances affecting the regulators range from sanitarians wearing every hat in small health departments to sanitarians in large health districts spending most of their time dealing only with onsite issues. While cataloguing local regulatory issues is a major—if not impossible task—a few situations that weigh heavily on most local regulators are provided as well as examples as to how NOWRA can support regulators to accomplish their work.

A short list of situations involving issues of general concern includes: enforcing local regulations requiring that onsite systems be maintained; dealing with varying levels of competence and professionalism among local contractors, suppliers, and vendors of technologies; carrying the burden of “protecting consumers” because of insufficient free-market checks and balances within the current onsite business model; revisiting properties to negotiate system re-designs because of lack of coordination during site development or building construction, or installation problems; contending with customers and others who hold popular, but erroneous, ideas about onsite systems and related matters.

If you’ve had experience with any of the above situations, you know that they frequently consume large amounts of time and cause varying levels of stress, often unnecessarily... for all of the parties involved. Situations are sometimes only tangentially related to regulatory issues,

but become the regulator’s problems by default. And why is this? Because there is still much work to be done before onsite emerges as a mature and professional industry.

These example situations represent typical onsite issues, some of which can be technically complex and usually involve people who lack good information and guidance.

Developing the means to effectively deal with these kinds of issues requires a sustained commitment, the forging of consensus, contributions of time by those concerned, and money...things usually not found in abundance at the local level. Through their membership and participation, regulators can contribute to the NOWRA mission to provide leadership and promote the onsite wastewater treatment and recycling industry through education, training, communication and quality tools to support excellence in performance.

The **Business of NOWRA** envisions a new model for onsite program performance and NOWRA is developing the means to implement this model. The model’s goal is nothing less than the evolution of a sustainable sewer infrastructure. Revisit the NOWRA Model Framework document...and consider how its components support the role of regulators.

Many states have NOWRA-affiliated organizations to focus on local priorities while lending support to the broad national effort. If you are not a member, please join. Become a partner in “Making the difference in Onsite.” ♦

# How to Connect with Your Customer

by Frank Aguirre, R.S., M.A.,  
frank@septicssystemsexpress.com

## Introduction

Consider these statements:

- Saying something does not mean they understood you.
- Stating what you consider a fact does not mean they believe you, or heard you.
- Deciding for someone what's best for them is an insult if you have no credibility with them.

In all of these cases and many more, the problem, simply stated, is that you spoke *to* your customer, not *with* him and you just didn't "connect."

These examples also point to the fact that if there was ever an industry that needed good PR training, it's the sewage business.

## What's the problem?

Several things. First, most onsite wastewater customers come with preset prejudices about septic systems. Here are five well-known, commonly accepted and well documented facts! (A "fact" is a deeply set mental perception which is connected to one's ego.)

- 1)Septic systems stink.
- 2)They're expensive and undependable, not cheap and dependable like city sewage.
- 3) They cause loss of valuable trees and tear up your beautiful property by their installation.
- 4) The installation cost of the septic system reduces the amount of money you can spend on the important things like a metal roof, beautiful tile work or a nicer house exterior.
- 5)Septic systems require lots of maintenance, unlike city sewage which requires none.

Second, onsite sales are often budget-based; i.e., by the time the question gets to the designer, site evaluator or regulator, someone (home builder, installer or brother-in-law) has already instilled in the owner's mind what the system should cost. Furthermore, by the time we get there, the property owner might have already practiced his speech: "My neighbor got his installed for only \$x," etc. When cost proposals and budgets are planned ahead of soil analysis and other onsite considerations, conflicts are sure to arise.

Finally, onsite wastewater persons attempting to explain or sell septic system designs or installations have one common problem—they're trained in onsite wastewater and not in professional sales or in human psychology.

## What to do? What to do?

It's a simple, but time consuming process—go out of your way to learn some professional sales techniques. The purpose of this article is not to solve the problem but simply to point to it and encourage onsite wastewater people to relentlessly pursue its cure.

Toward this end, I offer but three small suggestions, all based upon the concept of connecting with the person who is going to have to part with some hard earned money to do as you're suggesting.

### 1. How do I define a "connection?"

A true connection with this valuable customer has several salient features:

- 1) He feels (not just thinks) that you are a good listener. He feels that when

he speaks, you value what he says and you take him seriously.

- 2) He trusts you. He feels that you understand his plight and you truly want the best for him.
- 3) He believes in you and what you say. Because you have somehow earned his personal respect, you have credibility with him.

### 2. How do you know you've made a connection with him?

You know you're "in" when you see behaviors like some of these:

- 1) He nods in agreement when you speak.
- 2) He's interjecting happy tones, smiles and agreeable comments.
- 3) He says things like, "OK, whatever you say." Or "I didn't know I was going to have to do this, but you're the pro."
- 4) You hear later on, from third parties, that he was impressed with your presentation or work and that he was even bragging about having you on his team.

### 3. How do you know you missed the connection?

You observe some of the following behaviors:

- 1) He constantly disagrees or argues with you.
- 2) He's reluctant to accept what you're saying.
- 3) He seems to agree but then later you find out that he complained to someone about you or went to someone else to get a second opinion.
- 4) During your presentation, he's very quiet, not smiling or joking, and is slow to react.

**OK, so what are three things I can start doing today to improve my "connectiveness" with my customers?**

1. Foremost, accept the fact that you can't convince anyone of anything. None of us have enough power and control to get someone to do something they don't want to do.

Recall that their perceptions are deeply set. They have clear mental pictures of how life "should be" and, finally, that these perceptions are closely tied to their fragile egos. This means that if you try to blow them over with NOWRA facts, NSFCH charts and diagrams or University of Wisconsin research papers without first establishing a personal rapport with them and earning your right to contradict, you're squashing your chance at making that all important personal connection.

Any convincing of their minds and redirecting of their thinking must come, not from you, but from within their own

thinking. When they've gotten new information and they feel comfortable that they are on the right path, then they can make a new decision.

Therefore, it is our calling to calmly, methodically and objectively lead them down a path, step-by-small-step, where they can gradually see for themselves what needs to be done in the case of their septic system.

(Side note—Never call it an "onsite" system or an "OWTC" or an "OSSF" or any other such industry anocronymic jargon. Call it a "septic system" because that's what your customers call it. *Always* use their terms. That's part of connecting with them!)

Secondly, listen very carefully to what they say and observe their body language in every detail.

Most people are highly egocentric; i.e., they are not really concerned with your world so much as they're focused on their own wants and needs.

Here's something to keep in mind: There is no such thing as a joke!

2. People almost universally abhor conflict. So when you say something that they don't like or they disagree with, rather than directly object and confront you head on, often they issue a "joking barb"; i.e., they say something under a pretense of humor. Beware!

When this happens, use the mental technique of taking their exact words and writing them out on a piece of paper.

When you subtract the "just kidding" context or the under-ones-breath soft tone you have the stark naked truth of what they really think! Therefore, make note of such comments, take them seriously, then, without addressing them directly, (which would put them into denial or defensiveness), go back and address the issue again.

When you return to the issue, however, never repeat yourself, but rather state the same thing in a different manner and/or with additional information and see if you can get a more positive response. The same is true of body language. Our bodies do not hide what's in our minds and hearts. With their egos, our customers can select their words and easily disguise what they're really thinking as you speak, but that folding of the arms or raised eyebrow can speak volumes to the onsite person who's sensitive to such things.

3. Finally and most assuring that you've made the necessary connection, find a way to have them repeat aloud what you said. If they can explain back to you, in their own words, the new rationale that you've exposed them to, that would be a sign that they have a high degree of comfort with what they have decided.

Remember that just their signing of your contract or giving you a check does not, in itself, indicate that they believe you, trust you or feel connected with you.

**What's the Real Message?**

In the end, aim for each and every interaction with your customer to be a win-win situation where the signs of your successful connection are in the realm of observable behaviors. When they trust you, not because of your position but more so because of your personage, when they send you new business and when they brag to others about you, yes, you've truly "connected" with your customer and you deserve their business. ♦

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# PROGRAM ANNOUNCEMENT

## *Decentralized Systems— The Changing World of Wastewater Treatment*

NOWRA 12TH ANNUAL CONFERENCE & EXPOSITION

November 3–6, 2003

Franklin MARRIOTT Cool Springs Conference Center  
Franklin, Tennessee (30 miles south of Nashville)



The 12th Annual Technical Education Conference takes place this year within the beautiful rolling hillside of Franklin, Tennessee, at the Marriott Cool Springs Conference Hotel. Located 30 miles from the Nashville, Tennessee airport, shuttle transportation is available for easy access. Complimentary transportation to the local shops, restaurants, and the historic Franklin area will be provided.

Again this year, attendees will participate in technical education sessions providing continuing education requirements (CEUs), additional knowledge, and skills to support their ongoing professional development. NOWRA's technical exposition provides opportunities to meet manufacturers and distributors from all over the United States, and learn about new products and equipment. 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. *CPR for Onsite Systems* addresses the methods for attending to failing and problem systems. *Developing a Model Performance Code* is an interactive session designed to give attendees an opportunity to hear the most up-to-date findings of the two-year work, and offer valuable insights and suggestions for improvement.

**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 and leaders throughout the United States who share your commitment to protecting and enhancing water quality.

**IMPORTANT INDUSTRY AND PROFESSIONAL CONTACTS** are achieved through the interaction with colleagues, manufacturers and representatives in the onsite industry. More exhibiting companies than ever 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.



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**HIGHLIGHTS**

**MONDAY, NOVEMBER 3, 2003 – 8 a.m.–5 p.m.**

**NOWRA Pre-Conference Workshops  
(separate fee required)**

**CPR FOR ONSITE TREATMENT SYSTEMS AND TECHNOLOGY—  
*Addressing the critical issues of operations and maintenance*  
presented by NOWRA's Technical Practices and Education  
Committees**

This comprehensive one-day session focuses on one of the most important topics with the service industry. It tackles known problems being experienced with existing systems and identifies strategies for use with newer technology. Following the workshop, participants attend NOWRA's Technical Exposition to meet equipment manufacturers and suppliers, and learn more about the products available to support their work.

**DEVELOPING A MODEL PERFORMANCE CODE FOR THE  
ONSITE/DECENTRALIZED INDUSTRY**

This workshop is a significant milestone in the two-year span of the Committee's work. It presents the products developed over the past year on soils, guidance documents and evaluation criteria. The culmination of this program is the development of a draft report. In this session, the various committee reports will be used to engage in an active discussion with participants for their input during afternoon roundtable breakout sessions, to produce this document.

NOWRA members of all industry segments are urged to attend and contribute to this vitally significant event. This program provides an update on the direction of this work and gives industry members and regulators a valuable opportunity for essential input on the products underway. This is your opportunity as a professional in our industry to learn more about the importance of the Performance Standards Code to your work, and participate in its development.

**5:00 p.m.—OFFICIAL CONFERENCE WELCOME RECEPTION**

Welcoming conference participants to the annual conference is always a joyous opportunity to combine important networking with visiting NOWRA's manufacturers and suppliers. A great evening is planned with festive entertainment provided by area bluegrass musicians.

**TUESDAY, NOVEMBER 4, 2003 – 8 a.m. to 5:30 p.m.**

**8:00 a.m.—CONFERENCE OPENING CEREMONIES – *Exposition Hall***

This year, NOWRA leaders will officially welcome conference attendees with an opening session in the Exposition Hall. Joining NOWRA's president are the Williamson County Executive Rogers Anderson and Mayor Jerry Sharber of Franklin, Tennessee.

**12:00–2:00 p.m.—NOWRA ANNUAL AWARDS AND MEMBER  
RECOGNITION LUNCHEON**  
*Featured Guest Speaker* – James Hanlon, Director, Office of Wastewater Management, U.S. Environmental Protection Agency

**9:00 a.m.–12:00 p.m.—TECHNICAL EDUCATION SESSIONS  
AND  
NOWRA'S COMPREHENSIVE TWO-DAY EDUCATIONAL COURSE ON  
THE BASICS OF ONSITE WASTEWATER TREATMENT—A TO Z  
(pre-registration necessary—no separate fee)**

A regular feature at NOWRA conferences, the A to Z course provides a comprehensive educational experience that does not exist in other programs. This unique, 12-session program takes the topic of onsite wastewater treatment from its historic beginnings and covers the basics of wastewater chemistry, microbiology, and soil evaluations, as well as the varied systems and options that produce a quality recycled water product. All course topics are led by experienced and credentialed NOWRA leaders in the onsite wastewater industry, with a special continuing education certificate provided.

**2:00–5:30 p.m.—TECHNICAL EDUCATION SESSIONS**

**WEDNESDAY, NOVEMBER 5, 2003 – 7:00 a.m.–5:30 p.m.**

**7:00–8:45 a.m.—NOWRA COMMITTEE MEETINGS**

**9:00 a.m.–12:00 p.m.—TECHNICAL EDUCATION SESSIONS**

**DAY 2: THE BASICS OF ONSITE WASTEWATER TREATMENT—A TO Z**

**12:00–2:00 p.m.—NOWRA NETWORKING LUNCH & ANNUAL  
BUSINESS MEETING**

**2:00–5:30 p.m.—TECHNICAL EDUCATION SESSIONS**

**THURSDAY, NOVEMBER 6, 2003 – 8:00 a.m.–3:00 p.m.**

**8:00 a.m.–3:00 p.m.—**

**EDUCATIONAL FIELD TRIP OF TENNESSEE ONSITE SYSTEMS**  
This field trip provides data on several successful onsite systems currently being used in various types of soil conditions. Presented in conjunction with the *NAWT Inspector Certification Training Course*, the trip will feature three systems with instructions provided on proper inspection procedures.

**8:30 a.m.–12:00 p.m.—NOWRA'S POST-CONFERENCE  
ROUNDTABLE DISCUSSION: *Approvals, Reductions &  
Pretreatment—Is the Current System Fair?***

This unique roundtable forum addresses the controversial issues encountered daily by industry professionals.

**Industry Participants**

- Regulators/NEHA
- Service Providers/Contractors
- Manufacturers
- Academic and NSF

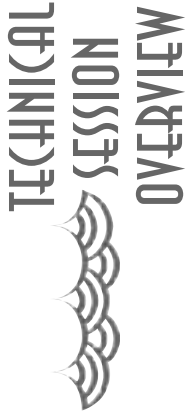


# SCHEDULE OVERVIEW

## NOWRA 2003 TECHNICAL EDUCATION CONFERENCE & EXPOSITION



DATE	EVENT	TIME	ROOM LOCATION
Sunday, November 2, 2003	NOWRA Board of Directors Meeting	1:00–5:00 p.m.	Thoroughbred Board Room
	REGISTRATION OPENS	3:00 p.m.	Conference Center Lobby
	Exhibitor Materials and Set-up available	4:00–8:00 p.m.	Champion Ballroom
Monday, November 3, 2003	REGISTRATION	7:00 A.M.	Conference Center Lobby
	Exhibitor Set-up	8:00 a.m.–3:00 p.m.	Champion Ballroom
	Pre-Conference Workshops	8:00 a.m.– 5:00 p.m.	
	<i>CPR for Onsite Systems</i>		Meeting Room 1
	<i>Developing a Model Performance Code for Onsite Systems</i>		Meeting Room 2
	Workshop Lunch & Speaker – Dr. Robert Rubin	12:00 p.m.	To be Announced
	NOWRA Annual Golf Tournament	Meet in Hotel Lobby at 10:00 a.m.	The Legends Club of Tennessee
	Conference/Exposition Opening Reception	5:00 p.m.	Exposition Hall/Champion Ballroom
Tuesday, November 4, 2003	REGISTRATION	7:00 a.m.	Conference Center Lobby
	Continental Breakfast	7:00–7:45 a.m.	Exposition Hall
	Prayer Breakfast	7:00–7:45 a.m.	Appaloosa Room
	Conference Opening Session	8:00–8:45 a.m.	Exposition Hall
	Technical Education Sessions	9: 00–11:55 a.m.	Onsite A to Z–Meeting Room #1 Nutrients–Meeting Room #2 Technical Systems–Williamson Planning–Franklin
	Session Break	10:30–11:00 a.m..	Exposition Hall/Champion Ballroom
	NOWRA Annual Member Recognition Luncheon	12:00–2:00 p.m.	Hotel Terrace
	Technical Education Sessions	2:00–5:30 p.m.	Onsite A to Z–Meeting Room #1 Nutrients–Meeting Room #2 Technical Systems–Williamson Planning–Franklin
	Session Break	3:30–4:00 p.m.	Exposition Hall/Champion Ballroom
	Wednesday, November 5, 2003	REGISTRATION	7:00 a.m.
Continental Breakfast & Networking in Exposition Hall		7:00–9:00 a.m.	Champion Ballroom
Joint Committee Meetings State Presidents, Membership, Gov. Relations Technical Practices, Education, License & Certification		7:00–8:45 a.m.	Meeting Room #1 Meeting Room #2
Technical Education Sessions		9:00 a.m.–11:55 a.m.	Onsite A to Z–Meeting Room #1 Operations & Maintenance–Meeting Room #2 Technical Systems–Williamson Planning–Franklin
Session Break		10:30–11:00 a.m..	Exposition Hall/Champion Ballroom
NOWRA Networking Lunch & Annual Business Meeting		12:00– 2:00 p.m.	Exposition Hall
Technical Education Sessions		2:00–5:30 p.m.	Onsite A to Z–Meeting Room #1 Innovations–Meeting Room #2 Design–Williamson Planning–Franklin
Session Break		3:30–4:00 p.m.	Exposition Hall/Champion Ballroom
Thursday, November 6, 2004	NAWT Inspector Certification Course REGISTRATION	8: 00 a.m.	Conference Center Lobby
	NOWRA Special Onsite Issues Forum <i>Approvals, Reductions and Pretreatment: Is the Current Industry System Fair?</i>	9:00 a.m.–12:00 p.m.	Meeting Room #1
	NAWT Inspector Certification Course	9:00 a.m.–12:00 p.m.	Meeting Room #2
	NAWT Inspector Certification Course Joint Field Trip Training Session	12:00 p.m.	
Friday, November 7, 2003	NAWT & NSF Inspector Certification Examination	8:00 a.m.	Meeting Room #1
	NSF Proctor Training	Afternoon session	Information provided at registration



TUESDAY, NOVEMBER 4, 2003

7:00 a.m.—CONFERENCE REGISTRATION & CONTINENTAL BREAKFAST IN EXPOSITION HALL  
 7:15–8:00 a.m.— Prayer Breakfast in Meeting Room #1

8:00–8:45 a.m.—CONFERENCE OPENING CEREMONIES – EXPOSITION HALL

	MEETING ROOM #1	MEETING ROOM #2	WILLIAMSON	FRANKLIN
<b>Session I</b> 9:00–9:55 a.m.	<b>Onsite Systems A to Z - Part I</b> History of Wastewater Disposal and Treatment Dr. Mary Margaret Minnis	<b>Nutrients</b> Passive Nitrogen Removal Systems— Treatment Performance Pio Lombardo	<b>Technical Systems</b> Retrofitting A Septic Tank with a Bacterial Reactor Stephen Dix	<b>Planning</b> Residential Design Flow Projections: What Constitutes A Bedroom? Trey Cavin
10:00–10:25 a.m.	Chemistry of Water and Wastewater Dr. James Peterson	A Denitrification Process Based on a New Filtering Media for Onsite Wastewater Treatment - R. Lacasse	Comparing Effectiveness of Drain-fields and Seepage Pits for Septic Effluent Treatment - Jason Fields	Projected and Measured Wastewater Flows for Proposed Westerly Rd. Church, Princeton, NJ, and Implications for Site Planning Randy Kertes
<b>10:30–11:00 a.m. – NETWORKING BREAK IN EXPOSITION HALL</b>				
11:00–11:55 a.m.	Microbiology of Wastewater Treatment Dr. Mary Margaret Minnis	1. Forced Aeration Denitrifying Onsite Systems 2. Denitrifying Onsite Sewage Treatment Systems Using Trickling or Packed Bed Filters Barbara Rich	Low Pressure Pipe Systems: Evolution, Adaptation & Quality Control Brian Conwin	Innovative Onsite Systems in West Virginia Patricia Miller
<b>NOON–2:00 P.M. NOWRA ANNUAL AWARDS AND MEMBER RECOGNITION LUNCHEON – HOTEL TERRACE</b>				
<b>Session V</b> 2:00–2:55 p.m.	<b>Session VI</b> 2:00–2:55 p.m.	<b>Nutrients</b> Nitrogen and Phosphorus Removal in Onsite System Systems Mark Gross	<b>Technical Systems</b> Application of a Septic Tank Effluent Pump Sewer System in Tennessee – David Disney	<b>Planning</b> System Performance in Cold Weather Chris English
3:00–4:00 p.m.	Soil and Site Selection Leroy Jansky	Denitrifying Onsite Sewage Treatment Systems that Rely on Trickling or Packed Bed Filters Barbara Rich	Modeling a High Water Table Randy Kertes	How Onsite Wastewater Reuse System Provided the Answer to an Economic Development Problem in an Ohio Community Howard Wingert
<b>3:30–4:00 p.m. - NETWORKING BREAK IN EXPOSITION HALL</b>				
4:00–5:00 p.m.	<b>Session VII</b> 2:00–2:55 p.m.	<b>Session VIII</b> 2:00–2:55 p.m.	<b>Session IX</b> 3:00–3:30 p.m.	<b>Session X</b> 4:00–4:30 p.m.
4:00–5:00 p.m.	Aerobic Treatment Dr. James Converse	Sequencing Batch Reactor and Rotating Biological Contractor for Denitrification Break – Barbara Rich	Onsite System Failure Rates and Survivability Revisited Mike Hoover	The TVA-EMS—An Evolution to Success Warren Behlau
		High Performance Septic Tank Devices Yves Berube		Get Ready for E-Government—Regulating Onsite Systems Online Anish Jantraina
<b>5:00–7:00 p.m.—NETWORKING IN EXPOSITION HALL</b>				

WEDNESDAY, NOVEMBER 5, 2003

7:00 a.m.–CONFERENCE REGISTRATION & CONTINENTAL BREAKFAST IN EXPOSITION HALL

MEETING ROOM #1	MEETING ROOM #2	WILLIAMSON	FRANKLIN
7:00–8:45 a.m. Assoc. Leaders, Membership, Communication & Government Affairs Committees	7:00–8:45 a.m. Technical Practices, Education, License & Certification Committees	7:00–8:45 a.m.	7:00–8:45 a.m.
<b>Session IX</b> 9:00–9:50 a.m. Soil Based Treatment Systems George Loomis	<b>Session X</b> 9:00–9:50 a.m. Operations and Maintenance Philosophies – Terry Bounds	<b>Session XI</b> 9:00–9:50 a.m. Plastic Media to the Rescue George Garden	<b>Session XII</b> 9:00–9:50 a.m. Planning Wastewater Management Lorraine Joubert
10:00–10:30 a.m. Effluent Distribution Gravity and Pressure Dr. Mark Gross	10:00–10:30 a.m. Evaluating Resort Wastewater Treatment Systems in Antigua Harley Blake	10:00–10:30 a.m. Reciprocating Constructed Wetlands to Treat High-Strength Lagoon Water – Terry Yost	10:00–10:30 a.m. Buyer's Guide For Decentralized Wastewater Technologies Karen Sawyer
<b>10:30–11:00 a.m.–NETWORKING BREAK IN EXPOSITION HALL</b>			
11:00–11:55 a.m. Anish Jantraina Wastewater Treatment System Installation	11:00–11:55 a.m. George Loomis Management and Operations Forum	11:00–11:55 a.m. James Watson Drip Distribution Guidelines	11:00–11:55 a.m. Quantifying Site-Scale Processes & Watershed-Scale Cumulative Effects of Decentralized Wastewater Systems – Robert Seigrist
<b>12:00–2:00 p.m.–NETWORKING IN EXPOSITION HALL</b>			
<b>1:00 p.m.–NOWRA ANNUAL MEMBERSHIP MEETING IN EXPOSITION HALL</b>			
MEETING ROOM #1	MEETING ROOM #2	WILLIAMSON	FRANKLIN
<b>Session XIII</b> 2:00–2:55 p.m. Operations and Maintenance of Onsite Systems Dr. Bruce Lesikar	<b>Session XIV</b> 2:00–2:55 p.m. EPA's New Decentralized Wastewater Management Program—How It Affects You – Joyce Hudson	<b>Session XV</b> 2:00–2:55 p.m. Business Aspects of High Strength Waste System Design Frank Aguirre	<b>Session XVI</b> 2:00–2:55 p.m. Planning For Cost Effective Onsite Wastewater Treatment Rod Frederick
3:00–3:30 p.m. Land Use Issues Randy Miles	3:00–3:30 p.m. Effluent Sampling Techniques for Residential Treatment Systems Joe Bush	3:00–3:30 p.m. The Importance of Geology in Onsite Wastewater System Design in Colorado Edward Church	3:00–3:30 p.m. The Art of Negotiating with Private Landowners for Municipal Cluster Systems Mary Clark
<b>3:30–4:00 P.M.–NETWORKING BREAK IN EXPOSITION HALL</b>			
4:00–4:30 p.m. System Management Joyce Hudson	4:00–4:30 p.m. Treatment of Organic Waste and Sewage Sludge by Vermicompost Kuruville Mathew	4:00–4:30 p.m. Ashford: The Little System that Couldn't – Tricia Angoli	4:00–4:30 p.m. Using Resource Vulnerability Assessment To Set Water Quality Priorities – Carl Ethier
4:30–5:00 p.m. EPA Injection Rules Leanne Whitehead	4:30–5:00 p.m. Cleaning the Fog on Fats, Oils and Grease – James Newton	4:30–5:00 p.m. Designing to Accommodate Failures – Bill Stuth	4:30–5:00 p.m. A Unique Process of Treating Septic Tank Sludge – Eric Vachon
5:00–5:30 p.m. A Pilot Practitioner Project Ralph Benson			5:00–5:30 p.m. The TVA-EMS—An Evolution to Success – Warren Behlau





**Pre-Conference Workshop**

**THE CPR OF ONSITE SYSTEMS**

A NOWRA Specialty Pre-Conference Workshop  
Monday, November 3, 2003 – 8 a.m. to 5 p.m.  
Franklin Marriott Cool Springs Conference Center  
Meeting Room #1  
(Separate registration fee)

*This unique one-day workshop addresses the areas affecting failing conventional septic and newer onsite systems. It provides an understanding as to how to begin to solve the problems being experienced by owners. Participants learn first-hand from "experts in the field," the reasons systems fail and steps needed to correct and revive them. NOWRA's presenters bring a significant range of skills in dealing with system failures, trouble-shooting and problem solving.*

**Bill Stuth, Aquatest, Seattle, Washington**

Bill Stuth opens the workshop presentations by defining failure and identifying the core problem(s) found in many systems. He then focuses on estimating hydraulic and organic loading rates to the system. Stuth brings to the session more than 30 years of experience in addressing these areas.

**Tim Frank, Tim Frank Septic, Columbus, Ohio**

As a pumper for 20+ years, and now current NOWRA president, Tim Frank addresses the fine points of learning how to determine if a septic tank is robust or in major trouble. From that diagnosis, he then concentrates on information about the water-tightness of tanks.

**Tom Fritts, Residential Sewage Treatment Co., Grandview, Missouri**

Fritts has been a service provider for several types of aerobic treatment units (ATUs) for over 15 years. In this session, he describes how the various ATUs being used today function. Following this discussion, he provides a problem-solving strategy in how to assess their performance levels.

**Ron Lindsay, Miland Engineered Systems, Dearborn, Michigan**

Ron Lindsay, with many years of experience as a service provider and supplier, will provide information on resuscitating stressed single pass and re-circulating sand filters.

**James Converse, University of Wisconsin, Madison, Wisconsin**

Learning how to renovate soil based treatment systems is a critical component in many areas. Not only is Converse the founder of this method, he is also one of the nation's leading researchers and teachers in this topic area. Following this discussion, distribution systems are also addressed.

**Ronnie Thomas, Triple R Construction, Nokesville, Virginia**

An experienced installer and service provider, Ronnie Thomas will present evaluating and repairing control panels. There will be ample time for discussion.

**Expert Panel Discussion: Problem Solving Strategies**

The concluding afternoon session is devoted to addressing problems encountered in the workplace. Workshop participants will have the opportunity to obtain answers and solutions to difficult issues and challenging topics. Following the workshop, additional experts will be available in the exhibit hall to address specific areas of advanced systems.

The workshop starts at 8:00 a.m. and adjourns at 5:00 p.m. followed by a Welcome Reception to the NOWRA Annual Conference—with exhibitors available to show their products. This workshop is worth 6 CEUs.

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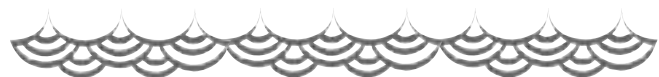
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**Pre-Conference Workshop**

**Developing a Model Performance Code for the Onsite/Decentralized Industry**

A NOWRA Specialty Pre-Conference Workshop  
Monday, November 3, 2003 – 8 a.m. to 5 p.m.  
Franklin Marriott Cool Springs Conference Center  
Meeting Room #2  
(Separate registration fee)

The Model Performance Code being produced by the National Onsite Wastewater Recycling Association (NOWRA) will affect virtually everyone within the decentralized industry once it is published. The importance of this work is evidenced by the quality of the participants involved in its development, who are recognized national experts and leaders from all sectors of the onsite industry. Its credibility is enhanced through the financial sponsorship and support of industry members, state government officials, onsite associations and the U.S. EPA. Its influence with practitioners and political bodies will enable it to serve as a point of comparison with currently adopted codes in the industry. Ideally, it will be adopted as regulation.

This one-day workshop presents an opportunity for NOWRA members, state officials, regulators and industry manufacturers to participate in, and influence, the code development process. It focuses on the significant progress made by NOWRA's Model Performance Code Committee since the September, 2002 conference in Kansas City. It also represents a major milestone in this work, with products that enable a critical and important dialogue to occur at this time between committee chairs, NOWRA members and onsite industry representatives. The materials developed over the past year include soils evaluation matrices, output standards, guidance documents, component evaluation and listing criteria, and code language—all of which will be presented.

**Who Should Attend this Workshop?** Public officials, regulators, product manufacturers and suppliers, planners, installers, designers and engineers, health and environmental decision-makers, and interested parties.

**Why this Work is Important!** The Model Performance Code being developed by NOWRA is intended to assist state and local governments to adopt new onsite regulations. Since the U.S. EPA concluded in the 1997 *Response to Congress on the Use of Decentralized Wastewater Treatment Systems* that "adequately managed onsite systems are a viable and essential solution to supporting the wastewater system infrastructure," confidence in onsite systems has significantly increased. Their use will continue to increase even more in the 21st century.

The reason? The accelerated use of new designs, installation practices, and treatment technology developed in the 1990s are not compatible with or applicable to existing older procedures used by regulators to make decisions and manage the onsite programs in some jurisdictions. As a result, the NOWRA Model Performance Code, as designed, will assist the regulatory sector of the onsite industry in the adoption of modern and consistent codes.

**Validating Dialogue and Input**

The status of the Committee's work at this point provides a valuable opportunity for input from all the interests involved in the onsite industry. Information received from the workshop deliberations will be used by the Code Committee to produce a public meeting draft document for the 2004 NOWRA Annual Conference. The Committee's 2003 working documents will be used throughout the workshop session to engage participants in active discussions and ultimately provide direction for Committee work in 2004. A workshop report with information received in all of the breakout sessions will be placed on the NOWRA website. It will include a summary of the key points provided by participants on each topic area.

**Luncheon Speaker – Dr. Robert Rubin, University of North Carolina**

***How We Got Here and Look At Where We Are Going!***

Dr. Rubin's message focuses on the U.S. EPA's recognition that onsite systems are a permanent part of the nation's wastewater treatment infrastructure. As a result, the onsite industry's direction and work are now even more important. The federal government's realization is enforced by the recognition that the \$300 billion investment in the big pipe infrastructure has failed to reach low density housing outside urban areas. Further, it is also being recognized by many states that the increased funding needed to maintain the existing big pipe infrastructure and expand municipal systems may not occur in the 21st century.





## WORKSHOP PRESENTERS AND FORMAT

**Tim Frank, NOWRA President**, will provide opening statements and introductions.

**KEYNOTE SPEAKER – Dr. Richard (Dick) Otis, P.E., NOWRA Technical Practices Committee Co-chair**, leads off the workshop with a timely discussion of the principal elements of the Performance Code. He presents the findings of a valuable case study of the Northern Minnesota Performance Code Framework that incorporates the EPA Voluntary Management Guidelines within the document.

### *A Report on State Practices to Implement Performance Code Provisions*

**Dr. Richard (Dick) Otis, P.E.**, (Project Liaison with the National Water Resources Capacity Development Project) and **Michael Corry**, Chairman, NOWRA Model Performance Code Committee, collaboratively present the findings from NOWRA’s research effort to document state practices to implement performance provisions in their codes.

### *Standards For Watertight Septic Tanks*

**Bob Pickney, P.E.**, presents the results of the committee’s work to develop standards for watertight septic tanks.

### *Soil Treatment Matrices*

**Dr. Jerry Tyler** and **Del Mokma**, co-researchers, present the findings of a year-long effort to develop soil treatment credit tables. The committee will present a paradigm shift in the evaluation of hydraulic and soil treatment credit assigned to the soil component. This paradigm shift involves a focus on access to oxygen and retention time in the three-dimensional treatment zone rather than the current prescriptive vertical separation distances. They will report on the status of a soils subcommittee effort that includes contributions from Drs. Kevin White and Bob Siegrist, on the issues of biomats, gravel and fine soils and their effect on treatment and hydrologic conductivity.

### *Public Health And Environmental Risk Reduction Considerations*

**Jean Caudill**, Committee Vice-Chair and team leader of the Guidance subcommittee addresses the important public health and environmental risk reduction considerations that need to be made by state and local governments as they make decisions on the levels of performance they will demand from new onsite systems.

### *Evaluating and Listing Treatment Components*

**Fred Bowers**, team leader of the evaluation subcommittee, presents the results of the subcommittee’s work as to how NOWRA, in cooperation with existing test centers, will evaluate and list treatment components by their output characteristics.

### *The Model Performance Code Development*

**Michael Corry**, Committee Chairman, discusses the layout and content of the proposed NOWRA code document including code language, definitions, adopted standards and appendices.

## **Concurrent Round Table Discussions**

During the afternoon, four individual group sessions will occur, each addressing key components in the development of the performance code documents. These work groups provide additional opportunities for participation in this work. Workshop participants will select and participate in three of the four groups during the allotted 40 minute time periods.

1. **Reuse/Recycle under Performance Codes – Robert E. Lee, P.E., Facilitator**  
Discussions focus on understanding the approach being used for reuse and recycling standards for onsite wastewater and its constituents. This is a timely and important topic as communities attempt to preserve and enhance their clean water resources.
2. **Septage Management – Bennette Burks, P.E., Facilitator**  
This discussion addresses regulations affecting the management of septage, as it relates to code provisions. Land application will be the major focus.
3. **Adopted Standards and Protocols, Steve Branz, P.E., Facilitator**  
This topic focuses on the standards and protocols currently being considered for inclusion as reference standards in the code. Input desired of participants addresses standards under consideration—e.g. which ones should be adopted, discarded, or modified?
4. **Administrative credits for EPA Management Level V – Mike Hines, P.E., Facilitator**  
This discussion addresses the appropriate administrative standards that should be applied to EPA Management Level V organizations—those that own and operate cluster systems and/or scattered site systems.

**Workshop Wrap-up Session:** Following the deliberations in the four workgroups, participants will reconvene to comment on their participation in the workshop—and to provide direction for the Model Performance Code development effort in 2004.

**Included in the Workshop:** The workshop fee covers participants’ breaks, lunch, and handout materials.

# Special Offering at the NOWRA 12th Annual Conference November 4-7, 2003



## Onsite Wastewater Systems (Conventional/Septic) Inspector Training and Certification Course

### You Can't Afford to Miss this Training!

Many states and builders now require septic system service providers to show documentation of education and training for onsite systems. More will do so in the future. NAWT's course provides this needed training.

Participants attend the NOWRA two-day conference and the course in Basics of Onsite—A to Z, with additional inspector training, the NOWRA Exposition and ALL Program Events, including the Thursday Field Trip designed for Inspector Training. Fee also includes the Monday Welcome Reception, Tuesday's Luncheon, refreshment breaks, manuals, and testing and certification materials. Participants are tested for either NAWT or NSF Certification on Friday, November 7.

NSF Certification requires an additional fee. Contact: Tina Beaugrand at 1-800-NSF-MARK or email: beaugrand@nsf.org

#### Who Should Attend?

Pumpers, service providers, installers, regulators, home inspectors, sewer and drain cleaners, realtors, and health officials.

#### What You Receive!

- Completing the 2-day program, and passing the written examination provides a two-year Inspector Certification Registration issued by NAWT.
- Inspection Report Form, System Service Scope, Evaluation and Owner Consent Agreement.
- NAWT certified inspectors' names are listed on the NAWT website, and is referenced daily by state regulators to verify service providers' accreditation.
- Certificate verifying 16 hours of Continuing Education Credits.

#### What You Learn

- **An Overview of Septic and Onsite Systems:** terminology, tank designs, treatment systems—surface and subsurface
- **Site Locations, Inspection Requirements and Procedures with Owners:** defining conditions and their effect on system components; locating tools, opening and checking methods
- **Inspection Procedures for Plumbing, Pumps, Tanks, Soils and Alternative Systems:** Site conditions, checking and troubleshooting leaks, sump pumps, and garbage disposals
- **Inspecting Trenches/Beds and Treatment Media:** Locating openings, checking performance, closing and water tightness; performance and problems with sand filters, peat filters, and wetlands
- **Completing Inspection forms, producing drawings, comments and customer information**

#### Questions?

Call NAWT at 1-800-236-6298

## Registration Form

Franklin, Tennessee ■ November 4-7, 2003

NOWRA 12TH ANNUAL CONFERENCE & EXPOSITION

Registration by fax: Send completed registration to: 410-798-5741 by October 15, 2003

Registration by mail: Send completed registration and payment to the NAWT office by October 15, 2003

Mailing Address: P.O. Box 1270, Edgewater, MD 21037-7270

**No refunds after October 15, 2003. Pre-payment is required. Returned checks will be charged a \$50.00 fee**

Name: \_\_\_\_\_ Company: \_\_\_\_\_

Other Company Members Attending: \_\_\_\_\_

Address: \_\_\_\_\_

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#### PRE-REGISTRATION FEES (Before October 15, 2003)

- NAWT Members: \$295.00
- Non member: \$325.00
- SPECIAL RATE:** 3 or more company registrants – \$215.00 each

#### ON SITE REGISTRATION FEES (After October 15, 2003)

- NAWT Members: \$395.00
- Non-Member: \$425.00

#### 1-DAY RECERTIFICATION (same deadlines)

- Thursday, Nov. 6, 2003**
- Pre-Registration: \$175.00
- On Site: \$195.00

**PAYMENT METHOD**  CHECK (Payable to NAWT Inspector Education and Training Course)  VISA  MASTERCARD

CARD NUMBER \_\_\_\_\_ EXPIRATION DATE \_\_\_\_\_

SIGNATURE \_\_\_\_\_



## Spouse & Guest Activities

*Special attention is given to making the time spent in Tennessee one of the most unusual and enjoyable for Conference attendees. Highlights of the opportunities for fun and relaxation in Williamson County and the Franklin area are described below.*

### MONDAY, NOVEMBER 3, 2003

#### 9:30 a.m.—NOWRA Annual Golf Tournament

Pick up your own foursome and enjoy the best course in the state of Tennessee. [separate fee – see registration]. All golfers meet in the hotel lobby for transportation to the course.

#### 6:00 p.m.—Welcoming Reception

NOWRA's Board of Directors, Conference Committee, and Exhibitors welcome this year's attendees with music, food and superb festivities in the Exposition Hall. Registered spouses and guests participate in the buffet reception, meeting NOWRA Exhibitors, and enjoying some of Tennessee's best bluegrass music. (Comfortable dress—e.g. jeans & things—is the attire of the evening.)

### TUESDAY – NOVEMBER 4, 2003

#### 9:00 a.m.—Spouse/Guest Hospitality Breakfast Reception *Thoroughbred Board Room*

Reacquainting with old friends and meeting new ones, during the morning, you are being treated to refreshments, given information about the area, and receive a "mini-massage" compliments of the Tennessee Onsite Association.

#### 12:00–2:00 p.m.—NOWRA Annual Member Recognition and Awards Luncheon, *Hotel Terrace*

2:00 p.m. Meet in hotel lobby for transportation to historic Franklin—spending a leisurely afternoon of strolling along beautiful shops and touring the old southern homes. Transportation back to the hotel will be provided.

**HISTORIC WILLIAMSON COUNTY AND FRANKLIN, TN**  
Williamson County officials are ready to welcome NOWRA conference attendees to their area. A unique area in Tennessee, it is located 100 years and a few short miles from Nashville! Dating back nearly two centuries, the area was founded in 1799 by early settlers who carved farms out of the wilderness. The City of Franklin boasts many "firsts in Tennessee"—including the Masonic Lodge and St. Paul's Episcopal Church.

Visitors find the best of both worlds in this area—small-town charm and big-city sophistication. Williamson County attractions include stirring Civil War sites and museums, magnificent Antebellum and Victorian homes, the Natchez Trace Parkway, great shopping, unique dining and entertainment, championship golf, and wonderful festivals throughout the year! The conference site is located just minutes from Nashville, "Music City USA!"

Williamson County is home to numerous historical sites, many associated with the "War Between the States." Guests are encouraged to visit such places as *Carnton Plantation*, which served as a hospital during the Battle of Franklin; *The Carter House*, a focal point of that bloody and tragic struggle; and *Lotz House*, which contains a museum full of memorabilia and artifacts from the Battle of Franklin and the Old West.

Visitors to Historic Downtown Franklin experience an award-winning "Great American Main Street" town. Beautifully renovated historic buildings house an eclectic mix of shops, galleries, and restaurants. Venturing a few blocks away, visitors can spend hours at *The Factory at Franklin*, a renovated 300,000-square-foot retail, dining and entertainment complex.

Another option is to hop in the car and travel out Highway 96 to *The Natchez Trace Parkway* for a view of some of the most pristine and undisturbed scenery in the state. This parkway closely follows the original Natchez Trace, which was used by traders and travelers in the early 19th Century. The Trace is one of only six of our country's "All-American Roads" and was selected as "Favorite Scenic Drive" by the readers of Southern Living magazine.

Nearby, beautiful *Brentwood*, noted for its stately homes, magnificent parks, and wonderful shopping and dining, offers an enjoyable afternoon of leisure activity.

*Cool Springs Galleria*, the state's second largest mall, is conveniently located and provides a wide variety of great shopping and entertainment opportunities. Franklin also has some of the best antique stores in the area.

### WEDNESDAY, NOVEMBER 5, 2003

#### 9:00 a.m.—A Day in Nashville—with a tour of the Famous Country Hall of Fame and Museum

Registrants meet in the Thoroughbred Board Room for coffee. Buses leave from the Conference Center Lobby at 9:30 a.m. and return at 4:00 p.m. The Hall of Fame tour is included in the Spouse/Guest registration fee; however, lunch is on your own.

Located in the heart of downtown Nashville (and adjacent to the Gaylord Entertainment Center), the Country Music Hall of Fame and Museum is the largest museum dedicated to the preservation and heritage of this distinctively American music. The Hall of Fame is as diverse as country music itself, and offers something for everyone. It is America's rich musical heritage, past and present, at its best.

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Following the Hall of Fame Tour, the afternoon is open for lunch, shopping and more exploring in historic Nashville. The bus bringing folks back to the Marriott will depart at 3:30 p.m. from the Hall of Fame & Museum.



# Annual Golf Tournament

## UPDATE ON THE FESTIVITIES!

(We play rain or shine – NO MAKE-UP RAIN DATE)

- WHO** 2003 Conference attendees, guests, and even friends
- WHAT** A great day on a fabulous golf course, contests, prizes, beverages, lunch, range balls, door prizes, hats
- WHERE** The Legends Club of Tennessee
- WHEN** Monday, November 3, 2003 – Meet in Hotel Lobby at 9:30 a.m. for check-in; tee times begin at 11:00 a.m.
- WHY** To relax, have fun & support NOWRA
- HOW MUCH** \$125 per golfer – \$450 per foursome – \$550 per foursome + hole sponsor (includes hole sign) – \$125.00 per individual hole sponsor
- WHAT ELSE** Special – NEW Event! STATE Competitions  
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Lowest scoring group awards
- FORMAT** Modified Scramble – Best Ball

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Address \_\_\_\_\_

Telephone \_\_\_\_\_ Fax \_\_\_\_\_ e-mail \_\_\_\_\_

# \_\_\_\_\_ golfers

Team members: \_\_\_\_\_

Single fee (per/person) \_\_\_\_\_ Team fee \_\_\_\_\_

### Sponsor Information

- Yes, I'd like a hole sign @ \$125 per/company
- Yes, Contact me about providing items for goody bags
- Yes, contact me about providing a door prize
- Yes, contact me about other sponsorship opportunities (beverage cart or photographs)



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American Manufacturing Co., Inc.	Hoot Aerobic Systems, Inc.	Rietschle Thomas Shebouyan, Inc.
Bio-Microbics, Inc.	Hydromatic Pumps	Septronics
Bord na Móna	Infiltrator Systems, Inc.	SJE-Rhombus
Clearstream Wastewater Systems, Inc.	MicroSepTec, Inc.	SNS Group, Inc.–Juggler™
Concentric Enviro, Inc.	National Precast Concrete Assoc.	STA-RITE Industries
Concrete Sealants, Inc.	National Small Flows Clearinghouse	Synergy World
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## NOWRA 12TH ANNUAL CONFERENCE & EXPOSITION AIRPORT TRANSPORTATION INFORMATION

### Cool Springs Limousine & Executive Services

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Please provide us with your name and number of passengers in your party; airline, flight number & time of arrival; and your destination—where we will be taking you.

#### WHERE & HOW TO FIND THE TRANSPORTATION DRIVER AT THE AIRPORT...

*Due To Increased Airport Security new plans are required. If the Driver is not At Baggage Area to Meet You, Please Follow This Directive....*All private transportation vehicles must meet their passengers curbside on the ground transportation level of the airport. This level is one level below the baggage level. Exit the building between the Grayline Booth and the Thrifty Car Rental Booth. Upon exiting the building, walk immediately forward approximately 125 feet, crossing street into the parking garage for the rental cars. Upon entering garage, turn to your right and you will see limos, sedans, and vans picking up their clients. Look for the Cool Springs Limousine Vehicles marked with the company name. Normally, we pick up in either black Lincoln Navigator, black Lincoln, white stretched limousine or a silver 15-passenger van.

#### WHAT IF YOUR PLANE IS DELAYED OR FLIGHT IS SWITCHED?...

There is no need to call us if your flight is delayed, as we track all inbound flights. We will not leave our post until you arrive. Only call us if you switch flights or if you miss your flight.

#### Payment For Services

If payment is not being billed to your company, you may pay by cash; all credit cards accepted; or if you are staying at the Franklin Marriott Cool Springs you may put it on your hotel bill.

*Thank You! Jim and Jackie Simms*

.....



## Registration Information

The full **Regular Registration** fee includes access to all education sessions, break refreshments, the Technical Exposition, Exhibitors' Welcome Reception (Monday evening), NOWRA Member Recognition & Awards Luncheon with guest speaker, James Hanlon, U.S. EPA (Tuesday afternoon), Thursday's Industry Issue Roundtable and Conference Proceedings.

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

The **Spouse/Guest** fee includes access to the technical exposition, Monday evening Welcome Reception, Awards Lunch, Hospitality refreshment breaks, a tour of the Nashville Hall of Fame, and transportation throughout the area.

**DATES AND DEADLINES**—See Separate Registration Form *Registrations at the rates identified below must be RECEIVED by the dates listed.*

Early/reduced-rate registration: July 1 – September 15, 2003.

*No reduced-rate registrations can be accepted after September 15.*

Regular registration: September 16 – October 15, 2003.

Late registration: October 16 – November 5, 2003  
(ACCEPTED AT CONFERENCE ONLY).

All registration materials and badges will be provided to attendees at the Conference Center Registration Desk

Confirmation of "Early/reduced" registration (not hotel reservations) will be by e-mail or fax.

Monday's Pre-Conference Workshop registration includes breaks, lunch, access to the Exposition, and the evening Reception. Admittance requires registration and showing business identification to receive a badge.

Check-in and Registration Hours – Franklin Marriott Cool Springs Conference Center Lobby Registration Desk

NOWRA Conference begins Monday, November 3rd at 8:00 p.m. and ends Thursday, November 6th, at 3:30 p.m.

Thursday, November 6, 2003 –  
NAWT Inspector "Re-Certification" Course – 7:00 a.m.  
Marriott Cool Springs Conference Center Lobby

### Exhibitor Check-in and Set-up

Exhibitor check-in begins Sunday, November 2, 2003, at 3:00 p.m. and materials will be available for pick-up on Sunday, and on Monday, November 4, at 7:00 a.m. at the Cool Springs Conference Center Lobby Registration Desk—adjacent to the Exposition Hall. Set-up services are provided by Freeman Decorators. Exposition packages will be mailed by Freeman beginning August 1, 2003. Exhibit break-down begins Wednesday, November 5, 2003, at 4:00 p.m. and must be completed by 6:00 p.m.

### Registration Policy

Registration prior to October 15, 2003 ensures that attendee badge, session registration, event reservations, and conference materials are correct. Phone-in registrations are not accepted. Changes in previously made registrations may be handled by 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 15, 2003, and be accompanied by payment in full in order to be processed.

### Registration Cancellation/Refund Policy

Registrations must be in writing, and are *refundable until October 15, 2003*, but will be charged a processing fee of \$50.00. No cancellations will be accepted after October 16, 2003, and no refunds will be given after that date.

### Conference Lodging

Conference Headquarters will be at the Franklin MARRIOTT Hotel, with a block of rooms reserved at a special rate of \$99.00 for attendees. All Lodging reservations are made directly with the Hotels.

### Additional Lodging in the Cool Springs Area

Lodging is also available at the Embassy Suites and Hampton Inn, adjacent to the Cool Springs Conference Center. However, NOWRA does not have a reserved room block at a special rate.

### Hampton Inn & Suites – Franklin

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## Embassy Suites Hotel

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Fax: 615-515-5152 <<http://www.embassysuites.com>>

## Transportation Information

1. AIRLINES—NOWRA has negotiated a group rate number for NOWRA attendees using Southwest Airlines for their transportation to Franklin - via Nashville, TN. Southwest Airlines offers up to 10% off most fares for air travel to and from the event with the convenience of ticketless travel. Travelers contacting Southwest Airlines should use the following identification code number(s) when making their reservations: ID CODE: WO272  
Attendees must call 1-800-433-5368 and reference the code (this includes travel agents)

Reservations Sales Agents are available 7:00 a.m.-8:00 p.m., Monday-Friday or 8:30 a.m.-5:30 p.m., Saturday and Sunday, central daylight time.

2. Car Rental - [www. Avis.com](http://www.Avis.com)

3. Airport Transportation from Nashville to Franklin - Cool Springs Conference Hotel—see page 19.

## NOWRA MEMBERSHIP

If you are not a current NOWRA member\* but would like to become one, you may receive a **one-YEAR membership for 2004** for \$100.00 (regularly \$140/year) and save on the full conference price!

\*NOWRA membership is held both on an individual basis and through State Constituent Groups. To register at member rates, you must be listed in NOWRA's current membership rolls, and all member dues and obligations must be paid in full. Constituent State Group Members: Please check with your state group to be certain that you are listed in their database as a NOWRA member.

**Student fee** includes full 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. A copy of your current college or university ID card is required.

## Continuing Education Units (CEUs)

Up to 15 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.

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# NOWRA'S 12TH ANNUAL CONFERENCE & EXPOSITION

## Decentralized Systems—The Changing World of Wastewater Treatment

November 3-6, 2003 • Franklin Marriott Hotel and Cool Springs Conference Center • Franklin, Tennessee

### CONFERENCE REGISTRATION FORM



Please duplicate this form for additional registrations.

Last Name (please print)	First Name	Name for badge (if different from first name)	
Company/Organization			
Street Address			
City	State/Province	Zip/Postal Code	Country
Daytime Phone	Fax	e-mail	
List any special needs (dietary or other)		Membership Number	Section Number

\*NOWRA Partnering Associations include: The National Association of Wastewater Transporters, the National Environmental Health Association, the National Groundwater Association, and the NWRCD Project.

CONFERENCE FEES <i>Late registration is AT CONFERENCE ONLY</i>	Early by 9/15/03		Regular 9/16-10/15/03		Late 10/16		Total
	Member/Partner*	Non-Member	Member/Partner*	Non-Member	Member/Partner*	Non-Member	
<b>Monday Pre-Conference Workshops</b> (must pre-register to receive workshop handouts) <input type="checkbox"/> CPR for Onsite Systems <input type="checkbox"/> Developing a Model Performance Code	\$175	\$225	\$175	\$225	\$225	\$325	
<b>Technical Sessions (Tuesday–Thursday)</b> Non-Member price includes membership for 2004 I plan to attend: <input type="checkbox"/> Onsite A to Z Systems Course <input type="checkbox"/> Post-Conference Roundtable Discussion	\$375	\$475	\$425	\$525	\$450	\$550	
<b>Technical Sessions—Student</b> Student price includes membership for 2004 I plan to attend: <input type="checkbox"/> Onsite A to Z Systems Course <input type="checkbox"/> Post-Conference Roundtable Discussion	\$125	\$125	\$125	\$125	\$125	\$125	
<b>Daily Attendance</b> <input type="checkbox"/> Tuesday <input type="checkbox"/> Wednesday <input type="checkbox"/> Thursday	\$200	\$250	\$225	\$300	\$250	\$350	
<b>Other Fees</b> Spouse/Guest (includes Welcome Reception, Awards Luncheon, hospitality room, gift and tour)	\$125	\$125	\$125	\$125	\$125	\$125	
Monday, Nov. 3—Welcome Reception	\$30	\$30	\$30	\$30	\$40	\$40	
Tuesday, Nov. 4—Prayer Breakfast	\$15	\$15	\$15	\$15	\$15	\$15	
Tuesday, Nov. 4—Awards Luncheon	\$40	\$40	\$40	\$40	\$55	\$55	
Thursday, Nov. 5—Onsite Systems Field Trip	\$75	\$75	\$75	\$75	\$75	\$75	
<b>Total Enclosed</b>							

#### PAYMENT INFORMATION

Fed. ID Number: 593099430

Check  Visa  MasterCard

Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Name on Card \_\_\_\_\_

Signature (required) \_\_\_\_\_

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 15, 2003, registrations are only accepted at the Conference.

#### NOWRA Conference Registration

P. O. Box 1270 • Edgewater, MD 21037-7270  
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For Revisions or Cancellations Please Call 404-497-4555  
Check In Time: 4:00 PM Check Out Time: 12:00 NOON

GROUP NAME: National Onsite Wastewater Recycling Association  
GROUP CODE: NOWRA  
PROGRAM DATES: November 2 – 6, 2003  
RATE: \$99.00 (plus tax)  
CUT OFF DATE: Monday, October 12, 2003

Reservation requests after the cut off date are subject to availability, and rates higher than the group rates may apply.

**GUEST INFORMATION**

Guest(s) Name(s): \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Home Phone: \_\_\_\_\_ Work Phone: \_\_\_\_\_  
Fax:Email: \_\_\_\_\_  
Arrival Day: \_\_\_\_\_ Arrival Date: \_\_\_\_\_  
Departure Day: \_\_\_\_\_ Departure Date: \_\_\_\_\_  
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**SPECIAL REQUESTS:**

(All special requests are on a space availability basis.)

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Please fax or mail complete form to Franklin Marriott Cool Springs, ATTN RESERVATIONS, 700 Cool Springs Boulevard, Franklin, TN 37067, Fax 615-261-6148.

# ARIZONA REGULATOR SURVEY OF TRAINING NEEDS

by Kitt L. Farrell-Poe

Starting in January 2001, Arizona implemented new regulations for discharges from domestic wastewater treatment systems under the Aquifer Protection Permit (APP) program. Changes in the administrative and technical approaches to regulating these facilities are challenging to onsite regulators and practitioners. In every county, onsite wastewater treatment regulators need a more comprehensive working knowledge and understanding of the basics of onsite wastewater treatment and the regulations and proper techniques pertaining to installing, inspecting, and maintaining onsite wastewater treatment and dispersal systems in Arizona.

In mid-2001, Region IX Environmental Protection Agency provided funding to

conduct regional workshops for State and County regulators. The emphases of the workshops were to develop an awareness of the science and social disciplines that affect onsite wastewater treatment and to become more knowledgeable about the Arizona APP program and the rules and regulations pertaining to onsite wastewater treatment and dispersal. Also, the Arizona Department of Environmental Quality (ADEQ) is interested in developing a master plan for training both regulators and practitioners. Thus, a survey was developed to determine the training needs of the regulators and their perception of their clients' training needs, with the results of the perceived training needs of the regulators.

One hundred surveys were sent to Arizona regulators in fifteen counties and ADEQ

to determine the training needs of both themselves and their clients. Regulators were asked to rank ten areas of training (some with sub-areas of training) and to rank methods, frequency, length of time, and location of training (at the end of the paper is a sample of the regulator training needs portion of the survey).

Ten areas of training surveyed included:

- fundamentals
- regulations
- soil characterization
- site evaluation
- design
- installation
- operation and maintenance
- inspections
- system controls
- computations and/or math review

**Table 1. Number of responses by training need for each training area.**

Training Area	Critical Training Needed (1)	Training Highly Needed (2)	Average Training Needed (3)	Training Somewhat Needed (4)	Little or No Training Needed (5)	No Response
Fundamentals, overall	1	8	18	10	13	10
raw waste	1	7	16	16	12	8
sewage treatment processes	2	11	17	15	8	7
conventional systems	5	7	19	6	18	5
Regulations, overall	9	11	18	6	8	8
administrative processes	5	13	15	12	8	7
soil characterization	14	16	15	4	6	5
site evaluation	15	18	11	4	9	3
design	9	16	17	4	7	7
installation	7	10	24	2	11	6
inspection	8	6	18	11	12	5
Soil Characteristics, overall	16	15	10	8	4	7
percolation tests	4	12	15	17	7	5
soil morphology	13	18	18	7	2	2
seepage pits	2	6	13	18	14	7
Site Evaluation	13	11	19	3	3	11
Design, overall	5	20	16	3	4	12
hydraulics, overall	5	16	18	5	4	12
linear loading	7	15	19	3	5	11
site hydraulics capacity	6	18	16	4	4	12
conventional systems	3	12	12	15	8	10
alternative features	18	16	13	2	3	8
Installation	5	10	20	6	9	10
Operation & Maintenance	4	11	21	11	4	9
Inspections	8	9	19	6	8	10
System Controls	3	15	15	9	5	13
Computations and/or Math Review	6	14	17	7	7	9

continued on page 28

## TRAINING AREA NEEDS

To determine which areas of training are needed by the regulators, the responses of critical-training-needed ranking were summed with the training-highly-needed and average-training-needed rankings. There was an

equal number of regulators who felt they needed to review fundamental concepts and those who felt they didn't need that area of training. Percolation tests and seepage pits were two areas on which regulators consistently agreed that they didn't need training. The

survey results indicate that, excluding the previous topics, the regulators need training in all the other areas listed in the survey. Table 1., on the previous page, shows that regulators recognize a need for training in most areas of onsite wastewater treatment and dispersal.

**Table 2. Summary of the training topics by area emphasis**

Training Critical	Average Training Emphasis	Training Should Be De-emphasized
Regulations - overall	Regulations - admin. processes	Fundamentals - overall
Regulations - soil characterization	Regulations - installation	Fundamentals - raw wastewater
Regulations - site evaluation	Installation	Fundamentals - sewage treatment processes
Regulations - design	Operation & Maintenance	Fundamentals - conventional systems overview
Soil Characteristics - overall	Inspections	Regulations - inspection
Soil Characteristics - soil morphology	System Controls	Soil Characteristics - perc tests
Soil Characteristics - site evaluation		Soil Characteristics - seepage pits
Design - overall		Design - conventional systems
Design - hydraulics overview		
Design - linear loading rates		
Design - site hydraulic capacity		
Design - alternative features		
Math Review		

The trends indicate that the regulators feel they need less training on fundamentals, inspection regulations, percolation tests, seepage pits, or design of conventional systems. They feel they need more training on regulations (overall, soil characterization, design, and site evalu-

ation), overall soil characteristics, soil morphology, site evaluation, and all aspects of design except conventional systems. Over 85 percent of the respondents desire some math review with almost 40 percent expressing this topic as at least a highly needed area

of training. The top five areas of training that the regulators expressed as being critical are design of alternative features, regulations of site evaluations, fundamental understanding of soil characteristics and soil morphology, and regulations of soil characterization.

## METHOD OF DELIVERING TRAINING

The most preferred method of receiving training is through one-day workshops, held quarterly, in either a regional or local location. CD-ROM and web-based courses were not highly preferable.

**Table 3. Number of responses by training method.**

Training Aspect	Most Preferred (1)	(2)	Least Preferred (3)	No Response
Training Method				
workshop	53	3	1	3
CD-ROM	7	20	17	16
web-based courses	6	16	24	14
Training Frequency				
monthly	5	9	14	32
bi-monthly	7	14	9	30
quarterly	48	1	6	5
Training Length				
1-day	39	8	0	13
2-3 days	22	16	2	20
Training Location				
on-location	28	6	9	17
regional	33	16	4	7
central	11	11	17	21

**SUMMARY**

Within the newly implemented regulations, Arizona Aquifer Protection Permits, the onsite wastewater treatment and dispersal code includes soil morphology as a method of determining both site suitability and hydraulic loading rates to the native soil. It is clear that Arizona regulators desire to be more comfortable with concepts and regulations pertaining to dispersal of effluent to soils.

Although the regulators perceive a critical need for training in alternative features, the kind of systems being installed in Arizona are predominantly conventional systems (defined in Arizona as a septic tank followed by a trench, bed, seepage, pit, or chamber). In 2001, of the estimated 11,700 applications for onsite wastewater treatment systems in Arizona, about 10,000 were for a conventional system (Edwin Swanson, ADEQ, personal communication, May 2002). However, that still means that, on average, over 100 alternative featured systems are being installed in every county. And fewer than half the counties have an engineer on staff to assist in the permitting process. Understandably, the regulators want a better understanding of the concepts and treatment efficacies of non-conventional systems.

Because the regulators would like their training to be more localized, the idea of a traveling "road show" with a mobile training center appears to be the preferred model of training (versus a Training Center approach). While this is not the path that Arizona has chosen, the approach should be further examined ♦.

*Kathryn L. Farrell-Poe is an Associate Professor in the Agricultural & Biosystems Engineering Department at the University of Arizona, Yuma Agricultural Center, 6425 W. 8th Street, Yuma, AZ 85364; kittfp@ag.arizona.edu*



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# 2003 Calendar

## August 12, 2003

POWRA Board Meeting  
Yerkes Associates Office, Morgantown, PA  
Contact: David Linahan - 610/644/4254  
dlinahan@yerkes-assoc.com

## August 12-13, 2003

Existing System Evaluator Training  
Michigan Onsite Wastewater Training & Education Center  
For info, call Barb DeLong (517)355-4720

## August 19-20, 2003

Onsite Wastewater Systems 101  
Michigan Onsite Wastewater Training & Education Center  
For info, call Barb DeLong (517) 355-4720

## September 22-23, 2003

12th Northwest On-Site Wastewater Treatment Short Course and Equipment Exhibition  
Sponsored By: University of Washington Dept. of Civil & Environmental Engineering & Washington State Department of Health University of Washington, Seattle Washington  
For more information, contact:  
Christy Roop Pack, Conference Manager  
Toll Free: 1-866-791-1275  
E-mail: uw-epp@engr.washington.edu

## September 25, 2003

12th annual State-County Ground Water Symposium  
Sponsored By: Maryland Dept. of the Environment  
Best Western Hotel and Conference Center  
5625 O'Donnell Street, Baltimore, MD 21224  
For more information, contact:  
Norman Lazarus  
Maryland Dept. of the Environment  
Water Supply Program  
1800 Washington Blvd., Baltimore, MD 21230  
e-mail: nlazarus@mde.state.md.us

## NAWT Inspector Training & Certification Courses August 13-14, 2003

Malibu City Hall, City of Malibu, CA  
Registration: NAWT Headquarters: 800-236-6298

## August 27-28, 2003

Holiday Inn Center City, Manchester, NH  
Registration: NAWT Headquarters, 800-236-6298

## September 27-28, 2003

OMNI Westside Hotel, Houston, Texas  
Registration: Texas Onsite Wastewater Association - 512-494-1125

## October 20-21, 2003

Recertification only: Oct. 19, 2003  
Sheraton Old Towne Hotel  
Albuquerque, New Mexico  
Registration: Contact Tom Duker, 505-314-0324  
Email: tduker@mercury.berncgo.gov

## November 4-7, 2003

NOWRA 12th Annual Conference (SEE PAGE 16)  
Registration: NAWT Headquarters, 800-236-6298

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