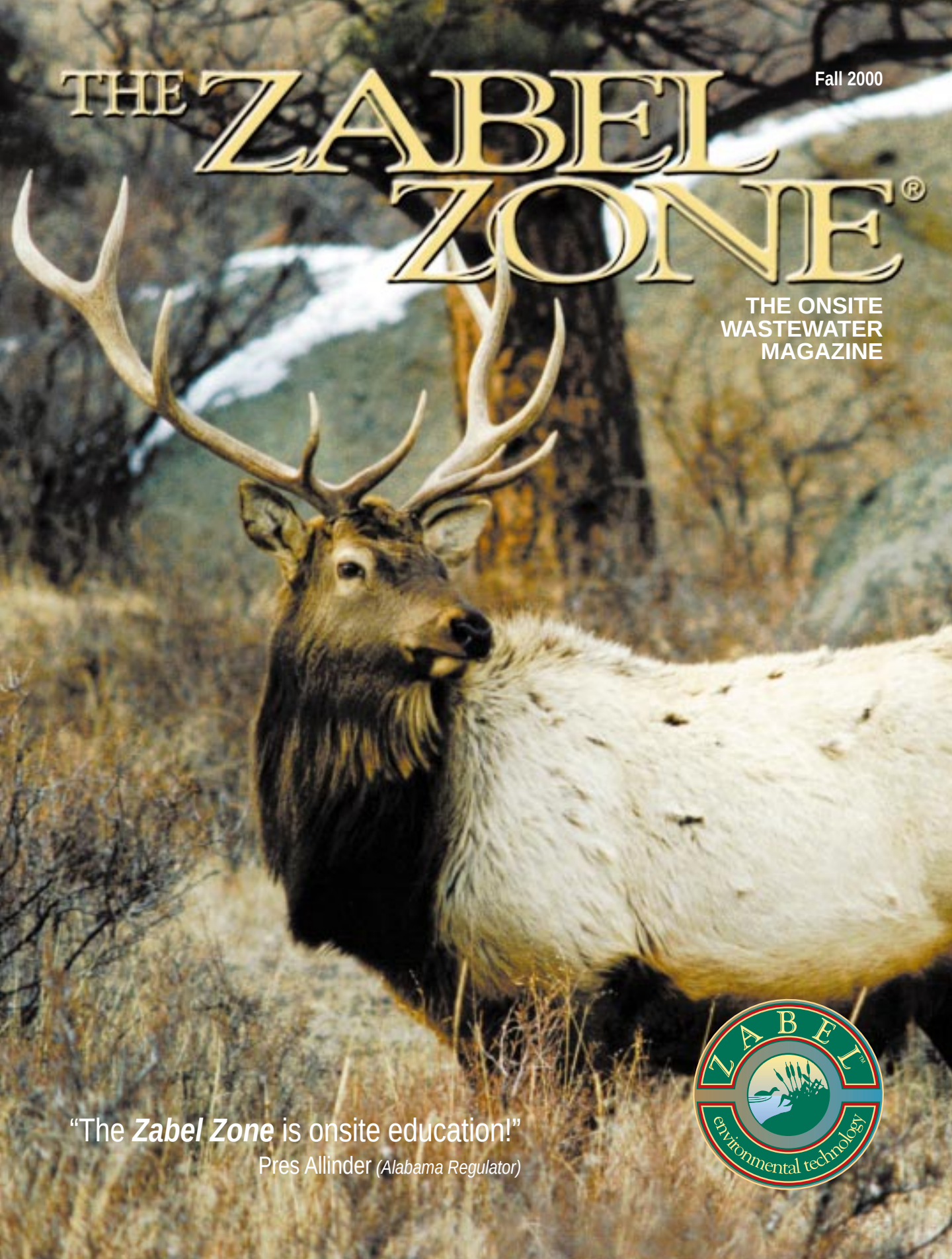
THE ZABEL ZONE®

Fall 2000

THE ONSITE WASTEWATER MAGAZINE



"The ***Zabel Zone*** is onsite education!"
Pres Allinder *(Alabama Regulator)*

ZABEL™ environmental technology

1st Filters to be NSF Certified

All Residential A1800, A100, A300 Series Filters

MADE IN USA

NSF Certified to ANSI/NSF Standard 46

Watch for other certified Zabel products in the near future

ZABEL™ environmental technology

1-800-221-5742

Visit our Website **www.zabel.com**

Look Inside

Cover photo by Tom Jenkins

P.O.Box 1520
Crestwood, Ky 40014
1-800-221-5742
zabel@zabel.com

Editorial Policies

The Zabel Zone™ is published in Fall and Spring editions each year and contains articles of interest to the Onsite Wastewater Community as well as information on Zabel products.

The Onsite Wastewater Community does not exist in a vacuum, but is part of the larger culture. Articles may also appear of a general interest that do not directly involve onsite wastewater issues. Articles by guest authors reflect only their opinions and do not necessarily reflect the opinion of the editor.

Letters to the Editor will be published as space allows with the editor reserving the right to edit the letters for brevity and clarity. If you would like to contribute an article, please contact the editor at : Voice 1-800-221-5742 - Fax 502-992-8201, or - Email Jnurse@zabel.com

The magazine is distributed free of charge and current circulation is approximately 30,000.

EditorsCorner

Jan M. Nurse, DMD

And the Winner is...

I would like to say thank you to those who responded to the questionnaire in the last issue of The ***Zabel Zone.*** Yes, I know most were doing it to be entered in our contest, but it was appreciated anyway.

Hundreds of you returned the postcard with all questions answered and we were able to get information we needed for planning the future of our magazine. Every segment of the onsite industry was represented in our responses, including one who drew a box and labeled it 'other'. Makes you think, doesn't it?

Only 8 of the respondents said they did not care to receive the magazine in the future and I hope they have been eliminated from our mailing list because I don't want them to know I am calling them losers. Kidding.

When asked how often you would like to receive a new issue, quarterly ranked first (I need a raise). Monthly came in second (I need a BIG raise), and twice a year was last.

Believe it or not, more than half of you would be willing to pay a subscription fee. Thanks for the vote of confidence.

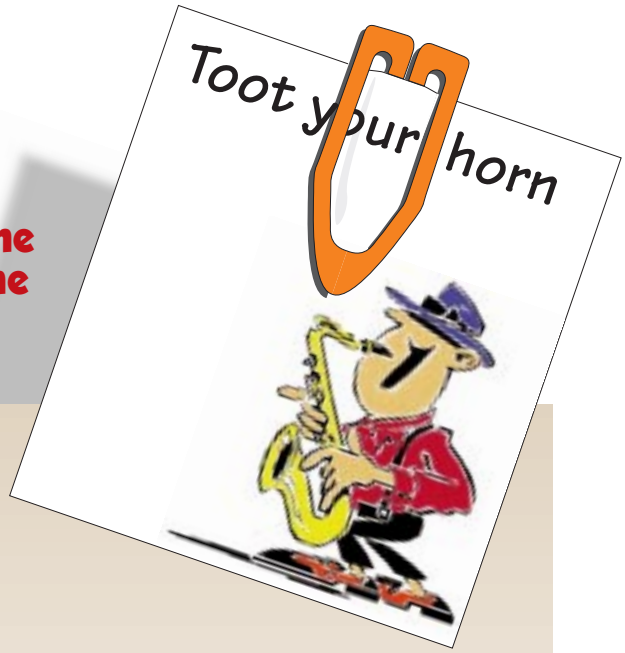
Now, check out the list of contest winners!

On June 12th while in Alabama for an AeroCell training class, Harry presented Kenneth Dodd with his prize. Congratulations and "Bon voyage". *Send us some photos. Oh and don't forget the fishin' pole.*

Name	Prize
Kenneth Dodd	Cruise
Claude Powell	$100
Ken Odom	$100
Noel Coplen	$100
John Herning	$100
Hank Huber	$100
Maggie Wilson	$50
Gerald Zingariello	$50
Ronald Abbett	$50
Kenneth Kretschmer	$50
Doug Cooper	$50
*Derek Brown	$50
Elroy Necaise	$50
*Andy Zimmerman	$50
Leon Barnes	$50
Bob Sullivan	$50

*Prize donated to charity

Name	Prize
Sarah Hyde	$25
Linda Briles	$25
J. Dell Rush	$25
*Charles Canipe	$25
Charles Norburg	$25
Richard Wilkerson	$25
Tracy Rank	$25
Jerry Nagelkirk	$25
*Wade Burcham	$25
Leonard Erdman	$25
Ray Herbst	$25
Willie Anderson	$25
Larry Hammond	$25
Betty Lee	$25
Derec Hudson	$25
Connie Schrandt	$25
Larry Witt	$25
Mike Thornton	$25
Walter Griese	$25
Terry Henry	$25



"It was refreshing talking to someone that was willing to spend a little time trying to understand what my real problems were rather than just answering my questions".

-----Original Message-----
From: bfuj
Sent: Thursday, June 22, 2000 11:28 PM
To: webmaster@zabel.com
Subject: RE: Larry Nurse

I am very pleased to pass on my comments to you about my phone conversation with Larry Nurse on 6/22/00.

I have a problem with a fiberglass 2 compartment septic tank and pumped effluent system. The sludge baffle is broken and the sump is too small. Larry was very helpful in answering my questions and offering some ideas on what I might do beyond just replacing the septic tank. He was very helpful in suggesting what my options were and offered suggestions and local supplier information. He also offered some ideas on how I might save a few dollars fixing my system. It was refreshing talking to someone that was willing to spend a little time trying to understand what my real problems were rather than just answering my questions.

Sent: Thursday, February 17, 2000 8:22 AM
To: All Zabel
Subject: FW: IOWWA conference

-----Original Message-----
From: Gail Anderson
Sent: Thursday, February 17, 2000 1:53 AM
To: webmaster@zabel.com
Subject: IOWWA conference

I enjoyed attending a class given by Wes Combs, at the IOWWA conference, in DES MOINES, IA, on Feb. 16. Well presented and informative class on foam based media, and recirc. filters. You guys keep up the good work. Sincerely, Gail Anderson, Latimer, IA.

From: Sharlene Walk
Sent: Wednesday, June 21, 2000 10:01 AM
To: TJenkins@zabel.com
Subject: SJE-Rhombus ad

Tom:
I got your proofs of our ads - they look good. I just want to say thanks for all your help on these ads...you would not believe how many publications would have just run the ads even though there was a font problem. Thanks for taking the time to let us know so we could correct the problem and for sending us proofs back on these. Yours is the first publication since I've been here (over a year) to send me a proof prior to printing. I really appreciate it! I look forward to seeing the final publications!

Thanks again, Sharlene

Thank you kindly.

Bob

Town of Wallingford, Connecticut

February 14, 2000

Bob Paulus, R.E.H.S., Northeast Field Manager
Zabel Environmental Technology
P. O. Box 1520
6244 Old LaGrange Road
Crestwood KY 40014

Dear Mr. Paulus:

Thank you for participating in the February 1, 2000 training seminar in Wallingford Connecticut. We appreciate your effort and enjoy opportunities to learn about the new technologies that will soon be a requirement in our state.

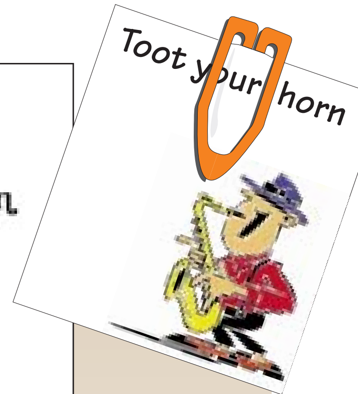
Please find enclosed a copy of the attendance list from this seminar, as we discussed. Thank you again for your presentation and involvement in our program.

Sincerely,

Maryann Cherniak Lexius, MPH, RS
Director of Health, Wallingford

BRIAN BART C…
Remodeling • Additions • …

TO WHOM IT MAY CONCERN:



2/19/2000

... was
... eciated
... ckly.

... for your time and
... I received many
... on your presentation
... it cleared a lot
... among the installers!
Maura Esposito
City of Middletown, Ct.

Missouri Milk, Food & Environmental Health Association

February 21, 2000

Harry L. Nurse, Jr.
Zabel Environmental Technology
PO Box 1520
Crestwood, Kentucky 40014

Dear Mr. Nurse:

On behalf of the Missouri Milk, Food and Environmental Health Association, I would like to thank you and Zabel Environmental Technology for your generous contribution of portfolio bags to be used at our 2000-2001 Annual Educational Conference. Your partnership continues to help us educate environmental health professional through the next millennium.

Thank you.

Sincerely,

Stephen St. Clair, RS
Environmental Public
Health Specialist III

SS:js
cc

"Your partnership continues to help us educate environmental health professionals through the next millennium".

CONSTRUCTION
All Home Repairs ● Reliable
...gent Street
...ine, WI 54501
...369-3819

4-13-00

... OPPORTUNITY, FROM WISCONSIN, TO
... LEPHONE CONTACTS IN MANY BUSINESS' EACH
... ARE YOU TO, AND THIS CO.' TELEPHONE REP'
... NEEDS TO BE SAID, AS THATS NOT ALWAYS THE
... "REED" COMPETITIVE WORLD WE FIND OURSELVES
... ITH 2, ONE BEING YOUR INITIAL SWITCHBOARD/
... COMPTING, WHAT PROFESSIONAL SAVVY THIS CO.
... E CHANCE TO MAKE A "FIRST" IMPRESSION AND,
... L" IN AN EXCELLENT CUSTOMER SERVICE MANNER.
... WITH THIS CO. BECAUSE YOU OFFER A QUALITY
... E JOB HERE IN RHINELANDER, WI., AND, FOR
... TAL COMMUNICATION POSITIONS, I THANK-YOU...

RESPECTFULLY,

I AM,

BONNIE BAST
OPC, MGR.

-----Original Message-----
From: Catherine Moody
Sent: Thursday, June 22, 2000 12:41 PM
To: webmaster@zabel.com
Subject: Excellent Service

Good Day-

After attempting -unsuccessfully- to order a Step System from [illegible], I was told about Zabel by a salesman from the Gilbert,AZ. branch of Hughes Plumbing Supply. From my first contact with your web site to defining the specific parts I needed took maybe an hour, contrasted with the ten days I had already wasted with [illegible].

Your web site, as is [illegible]'s, is excellent. That, however, is where the similarity ended. Larry took my call, fielded my questions and when he felt it necessary, transferred me directly, with no wait, to Wes who helped me spec. pump and accessories. Wes then hand-carried the list of part numbers in to Larry to help make sure the order was placed accurately.

Without a doubt and unequivocally, Zabel has my business. Assuming that is that your products are as good as your customer service.

It is now Thursday, I am expecting the Step System components to arrive by the middle of next week. [illegible] had a 4 week wait for the riser alone.

Sincerely,
Lance Moody
Licensed Residential Engineering Contractor

Zabel would like to thank everyone who has written to us. It is easy to write or call when something is not to your liking, but it takes time and effort when there is something good to say. Thank you.

Proven Technology in a New Package

Advanced Modular Treatment System

AeroCell™

- Secondary quality effluent
- Small footprint area
- **EASY** design & Installation
- Low operation & maintenance
- Shipped by UPS

FREE SHIPPING
On AeroCell Modules in the continental U.S.

"In my 15 years of regulatory experience the AeroCell is one of the most unique systems that I have ever seen."

Wes Combs, R.S.
Advanced Treatment Manager

U.S. Patent: 5,707,513, 5,980,739
Canadian: 209,617,5
Other Patents Pending

ZABEL® environmental technology

1-800-221-5742

Visit our Website **www.zabel.com**

MADE IN USA

By Harry L. Nurse Jr.

Rebel's Corner

This is a year of celebration. It is my tenth year of ZABEL® ownership. I have just received my 20th patent (foreign & domestic). We have been in our new office and plant facility for one year. It is hard to believe so much has changed so fast, not to mention that Jan and I will be celebrating our twelfth wedding anniversary and our son, Morgan will be celebrating his fifth birthday on October 9th.

And in May I took my first hot air balloon ride.

This past Christmas the ZABEL employees bought me a ride in a hot air balloon. I am scared to death of heights! I will fly in any kind of enclosed airplane or helicopter, but put me where the wind blows through my hair (euphemistically speaking) and I beg for mercy. So, what was I supposed to do?

I put it off as long as possible, but inevitably the day came and I was all out of excuses. Our pilot, Brian Beazly of Balloon Odyssey, gave us a few simple instructions, such as, don't try to get out of the basket when it is not on the ground. (That one was very helpful, Brian). Here I was on a beautiful, sunny Kentucky afternoon standing in a wicker basket with five others waiting to leave good old terra firma.

The wind was blowing at about ten knots causing the balloon to tilt sideways just at the moment of lift off and then . . . well then - nothing. A moment after the basket left the ground, the balloon caught up to wind speed and there was no sense of motion. None. No breeze. No rocking. Nada! It was a total surprise.

The best way I know to describe it is, it felt as if the basket was still in the same place and it was the ground quietly and slowly moving away.

The lush green Kentucky countryside is beautiful seen from a thousand feet in a slowly drifting balloon. Here were roads and houses and trees and fields I had viewed a thousand times, but everything looked fresh and new from this unique aerial perspective. From the ground, each feature, house or hill, road or field, can only be seen partially. From the air, they are all interconnected. I think when Theo Terry and I started AIM, this is what we were trying to say to our fellow board members at NOWRA. We saw the whole industry and part of it was being left out; a very important part, the men and women who install onsite systems.

Wherever we went, we promoted NOWRA. And everywhere people wanted to know: What is NOWRA doing to help us at the local level?

We didn't seem to be able to get NOWRA to provide the training and services these folks needed. And we didn't seem to be able to get NOWRA to see that it was to be the servant of the state associations and not the other way around. We tried to get NOWRA to cut their state association membership fees by proving that the annual conference could be the major source of funds. We proved it in Texas and Kentucky when we took the NOWRA annual conference to triple-digit growth in attendance and revenue.

While NOWRA's bank account was growing, most state associations were struggling to survive. They needed help and they needed it right then.

So we started AIM. On a shoestring budget, and under fire from friend and foe alike, we provided training to over one thousand installers in our first year. This year has been just as successful. We've published state association newsletters and helped manage state association conferences. We showed NOWRA what needed to be done and how it could be done with the vision and will to follow through.

Now these events can be seen from the distance of a year and a half. I hope that we can pass on to NOWRA our vision of serving the state associations and the local members with training and management services. And like the unique visual experience I had seeing Kentucky from a thousand feet, I hope the NOWRA leadership can now grasp the larger vision of serving all of the onsite community. Training programs and services at the local level is where NOWRA investment is needed, not just celebrating a bigger bank account or larger membership.

That's the kind of NOWRA the industry needs and that is the kind of NOWRA the entire membership deserves. Then maybe there will no longer be a need for AIM.

NOWRA, Catch the Vision

FLORIDA TRAINING CENTER:

CONSISTENCY AND QUALITY IN ONSITE TRAINING

By Kevin Sherman, Ph.D., P.E.

How did you learn to do your job? Some people are entirely self-taught. Others went through extensive long-term training. Most of us in the wastewater field got limited training and orientation to our company and job through a period of observing an experienced person do the same job we would be asked to do.

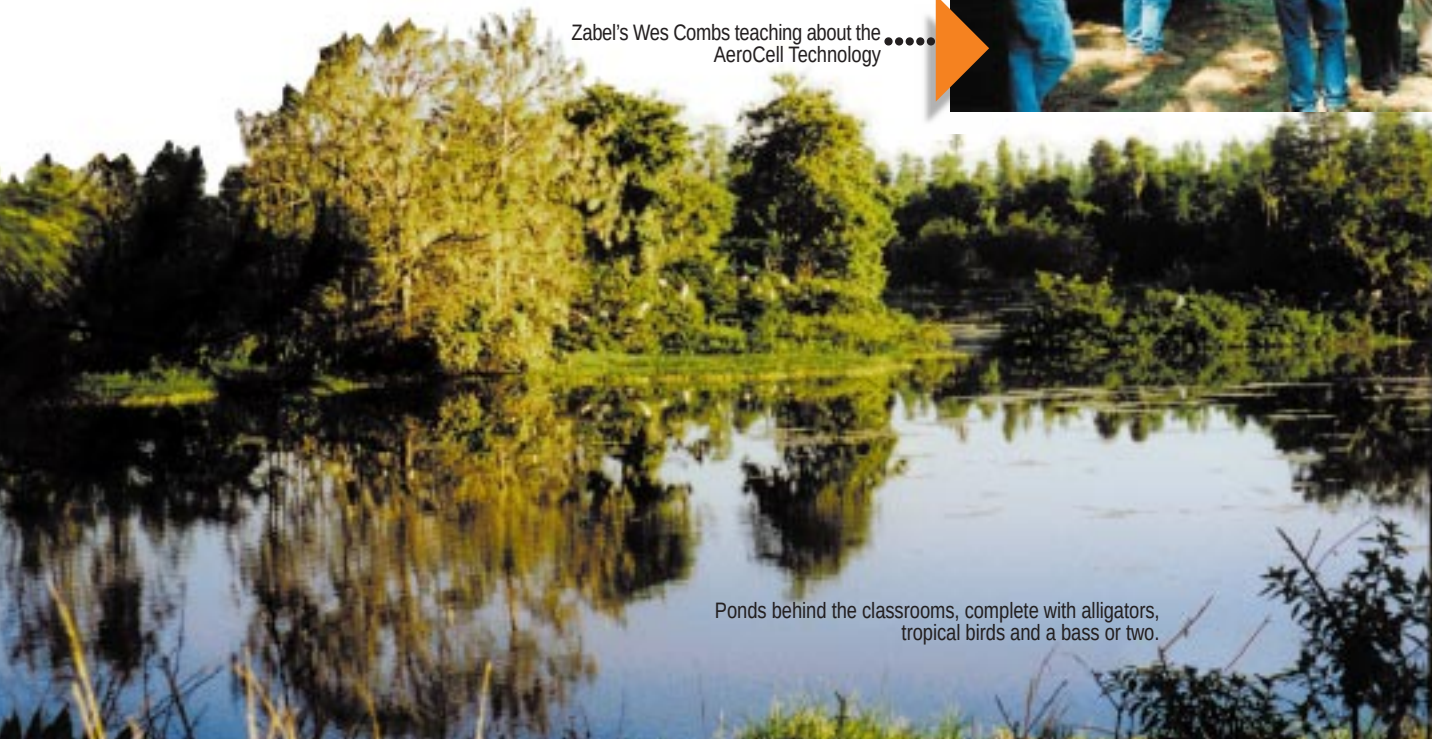
Onsite wastewater is a crossroads discipline. People come into the field from a wide variety of backgrounds. Its principles are rarely taught in trade schools or colleges. By and large, practitioners and inspectors were taught their job hands-on at actual job sites. This diversity creates a lack of a shared basic knowledge between people. In my mind, this is the number one reason why examination and certification of professionals and continuing education are crucial parts of an effective onsite wastewater program.

In Florida, voluntary certification began in 1986. Six hours of continuing education per year became mandatory for registered septic tank contractors (installation, service and maintenance personnel) in Florida in 1989. Since 1997, onsite system inspectors and site evaluators (called Certified Environmental Health Professionals) have been required to obtain twenty-four hours of continuing education every two years to maintain their certified status.

The latest innovation in Florida's onsite certifications is the Master Septic Tank Contractor. Master contractors are given unique abilities and responsibilities. They may conduct their own site investigations, including setting the seasonal high water table for new system installations, as well as repair installations. Master contractors will be consulted by the local county health department to help evaluate problem installations and they will be sought to instruct registered contractors. A master septic tank contractor may cover a system repair and sign a certification form should the department of health not be capable of inspecting the repair within thirty minutes of the scheduled inspection time.

Getting the Master Contractor license is not an easy task. The required education program spans thirty hours of advanced education during four separate courses, each with an examination to prove proficiency. A four-hour final examination tests

Zabel's Wes Combs teaching about the AeroCell Technology



Ponds behind the classrooms, complete with alligators, tropical birds and a bass or two.

The first training class at the new facility drew 52 participants.

applicants comprehensively. Continuing education requirements are also expanded for Master Septic Tank Contractors. Master contractors must take twelve hours of continuing education each year, six hours of which must be master level course work.

When it comes to providing continuing education for all these groups, however, there is a tendency to forget how we learned our jobs in the first place. Historically, classes in Florida have been held in hotels, agricultural centers and health department auditoriums. The primary means of instruction was an "expert" teaching with overheads or slides. Although valuable information was surely picked up by some participants, after a heavy lunch the next speaker had to give a rousing presentation to prevent a chorus of snores in the classroom.

My first exposure to a better mousetrap in onsite wastewater education happened in 1993 when I visited the training center in Craven County, North Carolina. The training center concept, successfully pioneered by Dr. Michael Hoover of North Carolina State University, stresses hands-on practical instruction in small mixed groups of contractors and inspectors. I was instantly hooked. I have since visited training centers in Rhode Island, Washington State and Texas. The classes at these locations have at least one thing in common- no one sleeps after lunch.

The Florida Training Center is located approximately mid way between Orlando and Tampa; the Polk County Board of County Commissioners leased the site to the Florida Onsite Wastewater Association for twenty-five years. It is approximately eighteen acres, eleven of which are ponds. Everyone who has seen the site remarks on the beautiful setting.

There are a few instances in which the Florida Training Center attempts to improve upon the lessons learned at other training centers. First, nearly sixty master septic tank contractors and inspectors from the local health departments and the state health office have worked cooperatively to develop eleven training stations on the site. The goal was to involve as wide a variety of people as possible in the design and teaching at the center. Secondly, master septic tank contractors volunteer to teach at most of the training stations. Finally, a detailed written script was prepared for each training station to maintain educational quality and consistency from instructor to instructor.

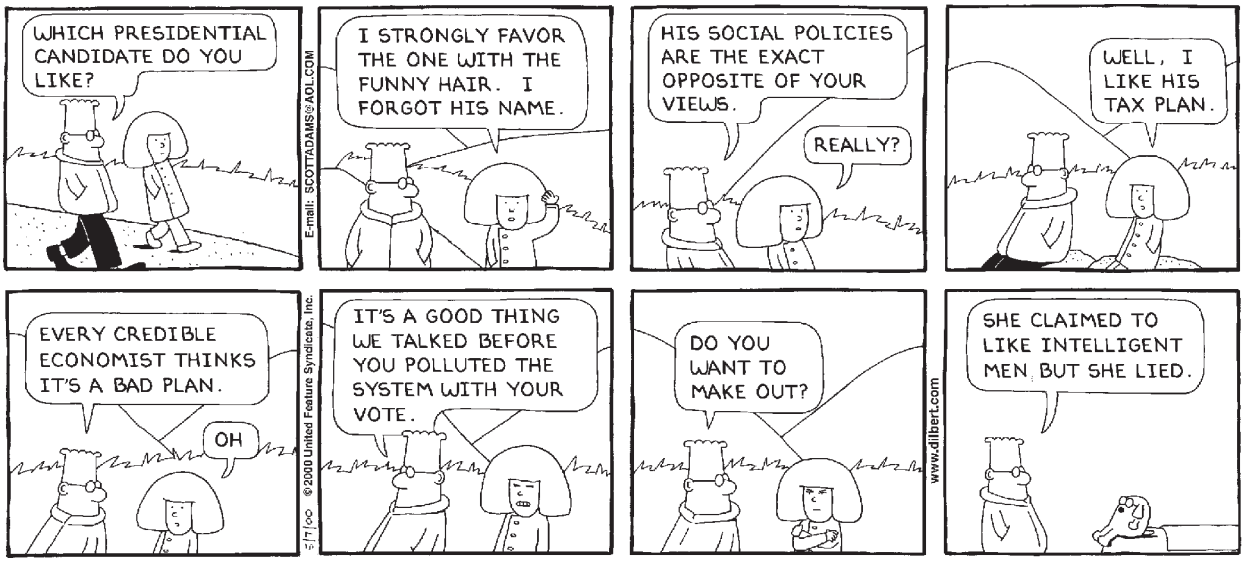
With the assistance of a grant from the Florida Department of Health, newly hired health department personnel will receive a week long educational session at the training center. Under Department of Health rules, employees must take their own four-day sequence of classes (similar to Master Contractors). Each class has its own examination to prove proficiency as well as a comprehensive examination on the last day of the training. The accelerated certification program must be completed before a DOH employee can perform unsupervised onsite system inspections.

The future of Florida's Training Center looks bright. I would like to thank Zabel® Environmental Technologies and many other industry supporters for their unwavering support during these critical early stages.

Bob McDonald, Austin Septic Systems, prepares to teach on filters

From left to right: Andy Gaudio, Kevin Sherman, Sam Evett, Mike Shoute, Joe Duke, Dee Griffen.

This one is for Harry and Jan.



DILBERT reprinted by permission of United Feature Syndicate, Inc.

Training *has begun in Alabama*

By Leslie Garner

On June 27-28, 2000, the Alabama Onsite Wastewater Training Center offered its first official Advanced Licensing class. The class was a resounding success, with over 100 enrollees. This class offers participants the opportunity to receive the Advanced License, which is necessary for them to install systems beyond the basic septic tank/drainfield configuration. They had the opportunity to hear experts in the field discuss various aspects of advanced wastewater treatment. In addition, they were able to see working demos at the Center.

The class was broken into lecture and field sessions, each lasting one-day. Dr. Kevin White kicked off the lecture session with an enlightening discussion on the need for alternative systems and the circumstances under which they can be applied. This was followed by presentations on state regulations, soils, system components, and the tremendous variety of advanced systems. In addition, Mr. Micky Smith of the University of West Alabama provided an optional review of the mathematics of system installation. Following his presentation, many of the participants confessed a new appreciation for the significance of the math underlying their job.

On the following day, the attendees were bussed to the Training Center on the University of West Alabama campus, where they were able to get "up close and personal" with the systems they had heard discussed. Among the advanced systems represented at the Center are a constructed wetland, peat biofilters, sand filters, aerobic systems with drip emitters, control-fill mound systems, and Zabel's® Aerocell™ system.

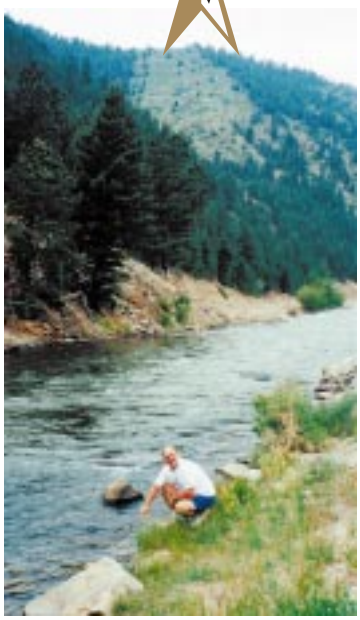
Zabel Environmental was well-represented at the class, with Bill Rawlins and Brian Borders providing their expertise on various aspects of the onsite industry. Bill spoke to the gathered participants on filters and risers. In his presentation, he taught the audience the significance of these components and the variety of options that are available.

Brian spoke on the Aerocell system, newly approved in Alabama. This system may well find a niche in the state, providing an inexpensive alternative that is easily installed and maintained, yet highly efficient. Through a state health department grant, Zabel is providing an Aerocell system for a family in Sumter County near the Training Center. This will allow participants in future classes to visit a working system and gain a further understanding of its potential application for sites throughout the state.

All in all, the Advanced Licensing Class was a tremendous success. The Training Center owes a tremendous debt of gratitude for Zabel's dedication to this project over the last three years. The people at Zabel have been behind the Center since its inception, and have always been ready to lend a helping hand. Thanks Zabel, for a job well-done. We couldn't have done it without you.

Zabel's Travels

In June Zabel's® Theo Terry and his wife Robin went to the NEHA conference in Denver Colorado.



Theo by Clear Creek

Theo caught Robin trying to push over the Leaning Rock when they visited the Garden of the Gods park in Colorado Springs, CO.

Denver City & County Government Building

View from the house across "Black Cove".

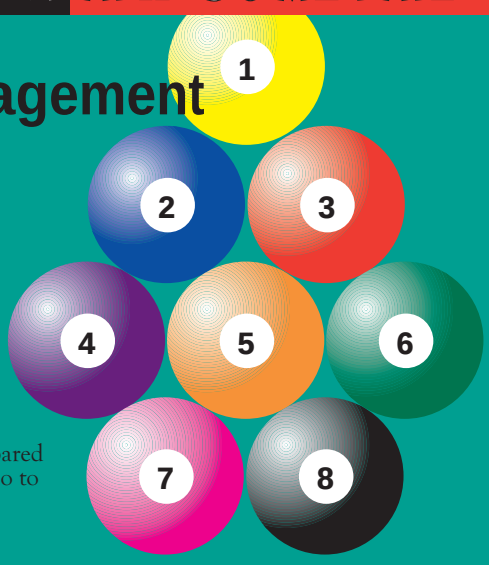
In May Zabel's Bob Paulus was in Hartford, CT. giving one of our Zabel Certified Training courses. While on the trip he stopped by to see a family member that lives in the town of Manchester, Massachusetts which sits on the Atlantic ocean.

In the small prestegious community known as "Manchester by the Sea" these large homes all utilize individual onsite wastewater treatment systems. Bob enjoyed the stay with relatives, (home pictured at right) while exploring for sites to utilize Zabel's newest Advanced Treatment System. This area of Massachusettes was also the setting for the film starring George Clooney "The Perfect Storm" based on a true story about a boat lost in a bad storm off the coast of Newfoundland.

WHY SOME COMPANIES PROSPER AND SOME FAIL

Commonsense Financial Management

Part I of II



Eight financial things to watch:

The financial side of a small company needs monitoring on a regular basis. You never have the time to look at everything, but there are some ways of looking at how well your business is doing that help more than others. Here are eight ideas that may change the way you see accounting.

1 **Don't** put your faith in historical financial statements. They are prepared by accountants using rules that make more sense to them than they do to you. It's the future you should be looking at, not the past.

2 **Change** your focus from concentrating on profit and move to cash flow analysis. Nobody cares whether you are making any profit or not, but everybody cares when your checks start to bounce. Profit can be affected by too many decisions and too much imagination in keeping books, but cash is just that, cash. When you don't have any, nothing else counts.

3 **Watch** your asset turns (Sales/Total Assets). This is a measure of how good you are at producing sales revenue out of your investment in assets (land, machinery, buildings, vehicles, inventory, cash and receivables). If you don't monitor and control receivables and inventory, asset turns go down, it takes more and more investment in assets and more borrowing to produce the same dollars of sales, and you wind up working for the banker.

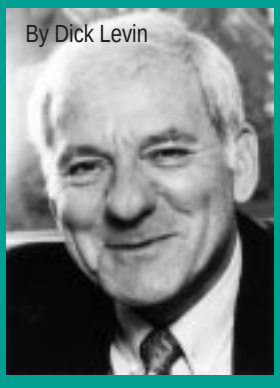
4 **Monitor** the rate at which you are recovering gross margin out of sales revenue. Match that figure against monthly overhead to see if you are staying ahead of the game. When gross margin can't pay the overhead, the trend is not your friend.

5 **Compute** the same ratios that your banker calculates every time you bring or send him your financial statements. Stay ahead of your banker, know the news before he does, and never surprise him. Bankers don't handle risk too well. If risk was what they wanted, why did they go into banking and why are they working for such low salaries?

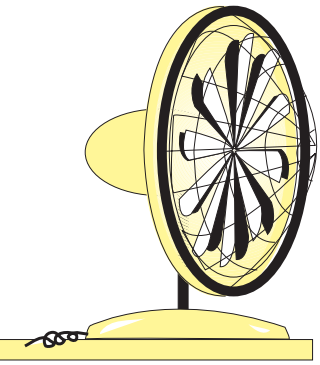
6 **Watch** your break-even point (calculated in dollars of sales). This is the lowest level rates can fall to without turning profit into loss. If good times turn into bad times, reducing the break-even point can allow you to survive. The break-even point is raised by excessive investment in plant, machinery, and vehicles. If you forecast that sales will rise, it's all right to invest in assets, but no one wants to go into a downturn and face lower sales volumes with a high break-even point.

7 **Know** whether you can repay the debt that you have on your balance sheet. Borrowing money from a bank from time to time is necessary, but not unless your forecasts show that you can pay it back. Today with spreadsheets, forecasting your ability to repay loans is a fairly straightforward operation and you should do that at least monthly. If you owe money to the bank and can't pay it, bad things generally happen.

8 **Monitor** receivables and inventory at least monthly. Here, more often is even better. In many companies, the total of receivable and inventory is the largest item on your balance sheet. Remember that you have to pay for everything that you put on your balance sheet whether you do it with your money or the bank's money. Here, less is generally better.


By Dick Levin

NEXT ISSUE: Financial strategies that make sense



New from Product Development at Zabel®

"Recirculation, Aeration & Chlorination"

By Wes Combs, R.S.

We've been busy at Zabel over the last six months with the development of new products that will enhance our growing line of wastewater components and treatment systems. With the introduction of the AeroCell™ Advanced Treatment System (see ad pg. 8) in the latter part of 1999, it became necessary to address recirculation. We have recently developed a very simple, yet effective, gravity recirculation device and a method for recirculation by pumping to answer these needs.

We are also offering the AeroDiffuser™ Aerobic Treatment Unit, which offers another alternative for advanced treatment needs. And, when disinfection is required, you will want to use our new chlorinator.

Recirculation

There are several advanced treatment systems available today utilizing effluent recirculation as a means of further treating the wastewater before final discharge. Zabel's product in this area is known as the AeroCell Advanced Treatment System.

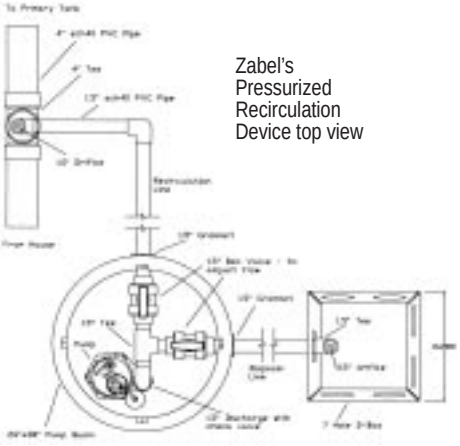
So, what is recirculation anyway? Recirculation is typically thought of as separating a portion of the treated effluent from an advanced treatment system and returning it through either the septic tank or pump tank. There are numerous benefits to this such as further treatment of the wastewater, additional reductions in nitrogen, and an overall dilution of the wastewater strength.

Keeping in mind that the septic tank and pump basin are typically in a reduced state (anaerobic) and have a high carbon content, the process of denitrification will occur and the nitrogen will be reduced and lost through nitrogen gas. In addition, recirculation reduces the overall waste strength by dilution. This occurs when treated effluent (typically <30 mg/L BOD and <30 mg/L TSS) is reintroduced into the septic tank or pump tank where it mixes with influent from the waste source. A dilution occurs and the mixed effluent now contains a significantly reduced BOD and TSS content. As the partially treated effluent passes through the system again, further treatment occurs.

When the elevation of the outlet of the advanced treatment system is higher than the inlet of the septic tank or pump tank, it is possible to recirculate by gravity flow. This eliminates the need for an additional pump and pump basin. Instead, gravity recirculation can be accomplished by the use of our new recirculation basin, which automatically splits the flows and recirculates the proper amount of effluent to the septic tank or pump basin and the proper amount for the final dispersal system. We have designed the standard recirculation basin to recirculate 80% to the septic tank or pump basin and 20% to the final dispersal system (4:1). This is the required design for the AeroCell system, but the new basin can be customized for most any recirculation system.

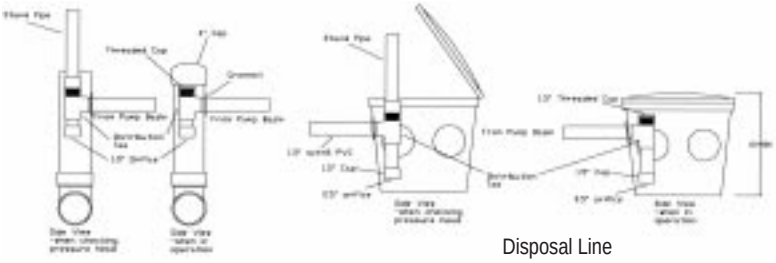
Zabel's Gravity Recirculation Device

When the elevation of the outlet of the advanced treatment system is lower than the inlet of the septic tank or pump tank or when the final dispersal system will be pressurized, it is necessary to recirculate using a pump. A pump basin and controls will also be needed to properly recirculate and disperse the final effluent. When recirculating with a pump, it is very important to maintain the required recirculation rates. One way to accomplish this is to install a PVC tee assembly within the inlet pipe to the septic tank or pump tank. The tee assembly will have a PVC cap glued on with a one-inch hole drilled in it. The pressure head will be set to two feet by a test stand pipe. If the final discharge system will be through a distribution box, another tee assembly can be used in the distribution box with a 1/2-inch hole instead of a one-inch hole. Again, set the pressure head



Zabel's Pressurized Recirculation Device top view

to two feet using a test pipe. With this design, 80% of the effluent will be recirculated and 20% will be discharged to the distribution box. If this sounds complicated and hard to envision, it's really not hard to accomplish. Study the drawing to the right/left/top/bottom and it will become much more manageable. When the final dispersal system is pressurized, such as a drip system or low pressure pipe system, use a recirculation basin to split the flows and direct 80% back to the septic tank or pump basin and 20% to the second pump basin. Now the required doses can be set for the drip system or low pressure system.



Recirculation Line

Disposal Line

AeroDiffuser™

Our newest advanced treatment system, the AeroDiffuser Aerobic Wastewater Treatment System, is also part of our line of advanced treatment systems for producing highly treated effluent. The treatment unit is certified to the NSF International Standard 40 Class I standard and offers another option when advanced treatment is desired or required by state or local regulations.

The extended aeration treatment unit is designed to treat up to 500 gallons per day through the activated sludge treatment process. The aerobic treatment occurs when air is introduced by a compressor into the fiberglass aeration chamber through a unique, fine air diffusion process. Porous ceramic diffusers are anchored to the bottom of the aeration chamber where fine air bubbles are produced and mix the wastewater. The fine air diffusion offers the benefit of maximizing air contact with the wastewater so that a very efficient process of aeration and mixing occurs. Hydraulic displacement causes the mixed liquor to enter the polyethylene clarifying chamber and migrate towards the outlet tee. Since the clarifying chamber provides a calm environment, suspended solids settle to the bottom where they re-enter the aeration chamber and receive further aerobic treatment. The clarified effluent exits the clarifying chamber through the outlet tee where it is discharged to a final dispersal system such as a soil absorption system.

Chlorination

In many areas of the country, it is common to discharge the final effluent from an aerobic treatment system to the surface through spray irrigation or a direct discharge to a waterway. Disinfection of the effluent is normally required by the regulating authority in order to reduce the total coliform organisms. For this reason, we have designed a new tablet chlorinator to be used in these circumstances. A simple yet effective means of chlorination is accomplished by installing a Zabel 1801 HIP septic tank filter within a PVC tee assembly on the outlet end of the aeration unit or within a pumping basin.

The 1801 HIP filter acts to hold the chlorine tablets within the tee assembly. The tee assembly holds the filter and creates a reservoir where the chlorine contacts the effluent as it flows over the tablets. The result is effluent that has been treated and disinfected to a high degree and is suitable for surface discharge through spray irrigation or direct discharge.

It seems that more and more designers, installers, and regulators are in need of advanced treatment systems to adequately negotiate poor site and soil conditions as well as environmentally sensitive areas. In the upcoming months, we will introduce other treatment systems to meet these needs. Advanced treatment systems can offer extreme flexibility when restrictive conditions are encountered, as well as, long-term solutions to wastewater treatment.

Please don't hesitate to contact our office if should have any questions concerning the products mentioned, or if you need design assistance with an advanced treatment system.

Contact Wes Combs:
Zabel Advanced Treatment Manager
1-800-221-5742
Wcombs@zabel.com

ZABEL® environmental technology

Tough Enough TO BE A ZABEL®

Zabels' risers, basins and lids are the toughest on the market.

- Best Guarantee (2 years)
- Durable Construction (tested to withstand up to 3,300 pounds of pressure).
- Made of non-corrosive UV protected polyethylene to withstand years of exposure to sunlight and septic gases.
- Light weight, for ease of transport to site. No need for heavy equipment for installation.

Installation is easy for existing tanks by using our retrofit tank adapter, or by using the cast-in tank adapter on a new tank.

Retrofit Tank Adapter

U.S. Patent 6,047,724

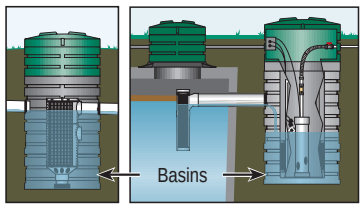
Water Resistant
Provides protection from ground water infiltration

Tamper Resistant
Every riser and lid comes with four stainless steel tamper resistant screws ,a torx bit and installation instructions

Interlocking
All parts lock together, and are easy to take on and off even after they have been underground

Septic Tank Access System

Risers, Basins & Lids



MADE IN USA

Call for a **free** ZABEL ZONE *An Onsite Wastewater Magazine* **1-800-221-5742** • Website http://www.***zabel***.com

LISTER INDUSTRIES INNOVATES USING ZABEL® PRODUCTS

By Jerry Dalbey

Lister Industries is a precast concrete company located in Des Moines, Iowa. We manufacture a variety of underground products, including septic tanks.

In the summer of 1999, a county sanitarian mandated that all septic tanks installed in that county have a watertight riser and that the lid be screwed onto the riser. This was to be implemented almost immediately so quick action was necessary.

Our company had previously committed to making our septic tanks watertight. This was accomplished by using thicker sidewalls and by installing a booted gasket on the inlet and outlet of the tank. Now, it was necessary to add a watertight riser.

Fortunately, prior to this event, we had been purchasing Zabel commercial and residential filters, and I had taken note of the risers displayed in their catalogue. They were to become a fast and simple way to comply with the new regulations. Their lid twists onto the top of the riser and is then secured with tamper-resistant screws.

After purchasing several of the 20" diameter by 6" risers, production began. A riser was cast over the inlet and outlet of our septic tank using two extra pieces of rerod tied to the normal lid to assure that the riser doesn't move during the pouring and vibration. The process was simple and neat. We can also see that risers are brought up to ground level- another part of the new regulation- since Zabel risers come in 6" and 12" heights.

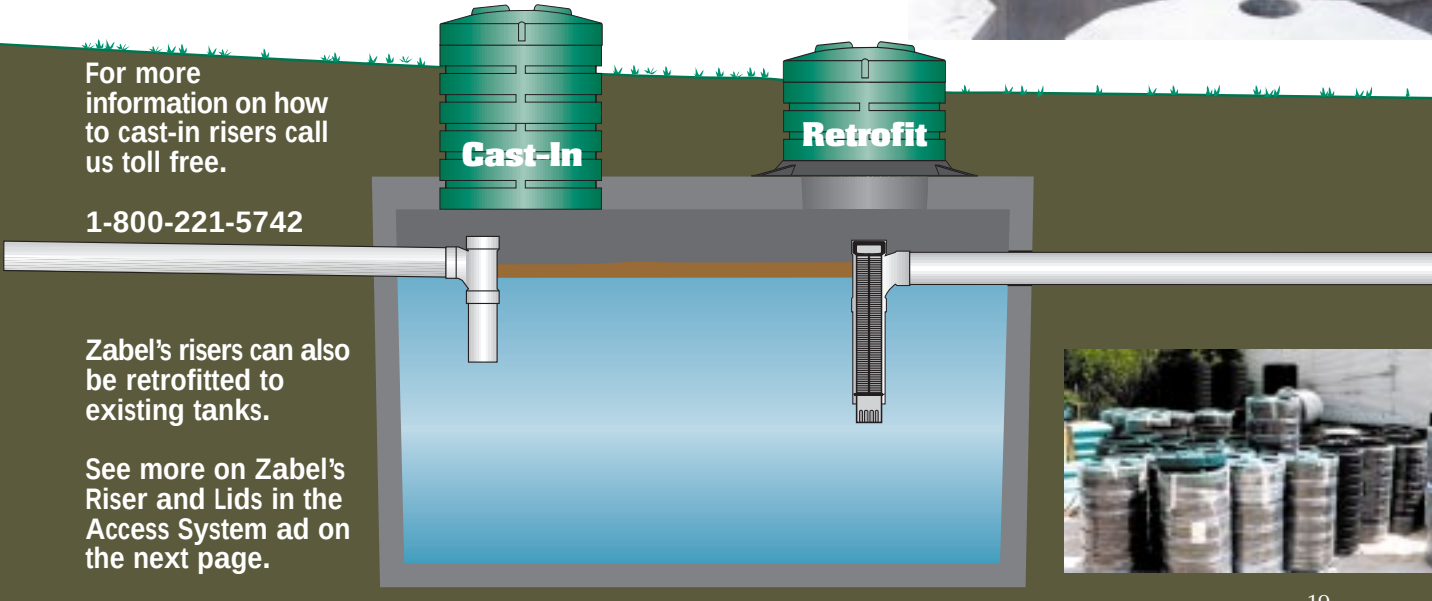
The product has been well received by sanitarians and the contractors who install the tanks. The new regulation has resulted in added profits for our company and our customers.

In February of this year the Iowa Onsite Waste Water Association held their annual convention in Des Moines. Our septic tank with the Zabel risers in the lid was displayed there and as a result, two more counties require watertight septic tanks. We also receive orders for these tanks in areas where there is not yet a requirement.

We appreciate the excellent products and service provided by Zabel Environmental Technology. We enjoy our relationship with them and are very proud of our watertight septic tanks with the Zabel risers and lids!

For more information on how to cast-in risers call us toll free.

1-800-221-5742



Zabel's risers can also be retrofitted to existing tanks.

See more on Zabel's Riser and Lids in the Access System ad on the next page.

Where did all these DUCKS come from?

By Theo Terry, III, B.S., R.S.

Time after time I hear people comment that the onsite industry is "fractured." There are numerous theories for why this is. Some think it is because we do not have a national onsite code. Some claim it's because we do not have "one voice" that represents the entire industry.

I have my own theory. Our industry is fractured, because we, its members, do not speak a common language. Let me explain.

There is an old saying: "If it looks like a duck, walks like a duck, and sounds like a duck, then it must be a duck"! In the onsite industry, we're too ready to call it a duck- just wait and see.

Take sizing an onsite wastewater treatment system, for example. Across the country, the most common factor used in this formula is the number of bedrooms the residence contains. Sounds simple enough, doesn't it? From Maine to Washington State, everyone knows what a bedroom is, don't they?

Well, maybe not. Several state codes contain definitions for a bedroom, but wait! When is a basement not a basement? When it's a bedroom, of course! In more than one state code, an unfinished basement is defined as a bedroom. **(Quack!)**

Now that we know what a bedroom is, it's just a simple matter of adding up the number of bedrooms and multiplying by the waste load factor for each bedroom. Let's see, that would be 120 gallons per bedroom. No, I'm sorry, that would be 150 gallons per bedroom. Or maybe it's 200 gallons per bedroom! You see, it depends on which state code you've sorted through; different, and sometimes even adjoining states have different loading rates assigned to each bedroom. **(Quack! Quack!)**

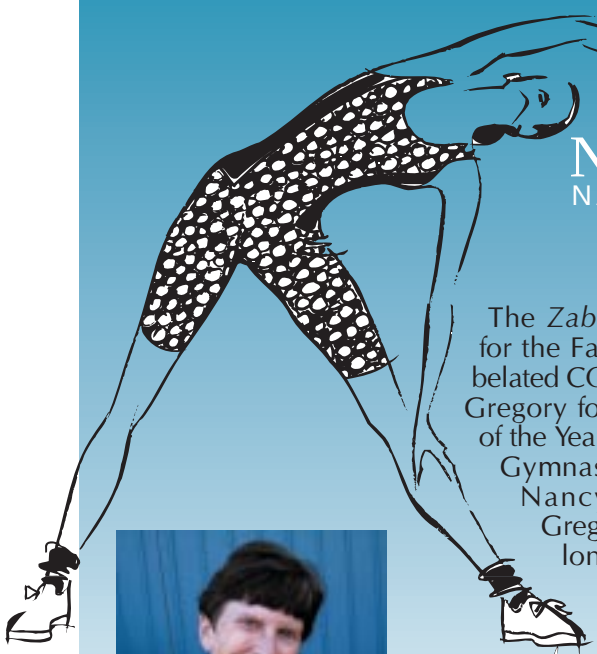
Is this a conspiracy, or what? Maybe it just too closely resembled a duck.

There surely is no need for every state, county, or township to write a code using their own definitions for items that should be standard. Am I calling for a national onsite code? Absolutely not! There are too many true variables in soils, climatic conditions, etc., across this great country of ours for that to ever be possible. But we, as intelligent members of the onsite industry, should be able to sit down and "agree to agree" on some national standards and definitions.

What is needed is a catalyst for all these states to start clearly communicating with one another. Should that catalyst be the National Smallflows Clearinghouse (NSC), National Environmental Health Association (NEHA), National Onsite Wastewater Recycling Association (NOWRA), the Association for Installers & Manufacturers (AIM), or some other group out there on the wastewater horizon? I don't have the answer to that question, but I do know this: until we learn how to speak the same language, we can't possibly become a united industry.

The ADVENTURES Of Zabel® Man

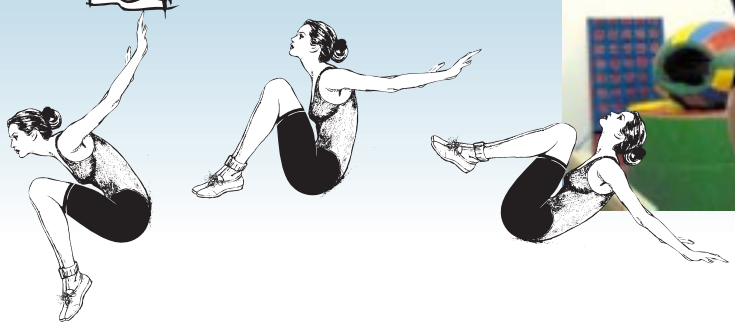
Illustration by Lonnie Walker



NANCY GREGORY

NATIONAL COACH OF THE YEAR

The *Zabel Zone*™ received information too late for the Fall '99 issue, but would still like to say a belated CONGRATULATIONS to Nancy Gregory for being named 1999 Coach of the Year by the National High School Gymnastics Coaching Association! Nancy is the wife of William Gregory, owner of WG Sales and longtime Zabel® ally.



Aerobic Tinkering

By John Christensen, B.S., M.Eng.

While growing up, my brother and I enjoyed "tinkering". We would take things apart, try to improve them, then figure out a way to put them back together - I guess it's no surprise we're both engineers. I remember to this day, one rainy afternoon when I was 12. My brother and I took it upon ourselves to make an improvement to our father's new Black & Decker drill. As it turned out, the idea to add "more power" did not work and all we were left with was a brand new drill that didn't work. I think our dad is still upset.

Over the years, I had many successes and some failures, but I always learned something that helped me out in my next project. However, nothing prepared me for the day early this year when Harry walked in my office and proclaimed, "John, we're going to make an Aerobic Treatment Unit, and we're going to make it better than anything else on the market." Well, if you know Harry, he thinks everything can be done "with a few clicks of the mouse" or "by making a phone call". This project turned out to be much more extensive, but I did get plenty of help from others here at Zabel®.

Late last year, Zabel signed a licensing agreement with a company that allowed us to manufacture their Aerobic Treatment Units and list them with NSF. As you would expect, before beginning production, the existing design had to be "Zabelized" - something at which I have had a little practice.

First, we removed the existing riser and lid and replaced them with Zabel's patented twist and lock riser and lid. Zabel risers offer many advantages, such as watertightness, strength, and tamper resistance. We also replaced the current Control Center, which houses the air pump, alarms, and controls with a Zabel 26" x 12" basin and 26" lid. Now the treatment unit has two identical lids on top that make it more aesthetically pleasing once installed.

The final modification was adding a filter to the outlet line of the treatment unit. A new Zabel A300-8x12 has been added to the outlet baffle to prevent solids carryover. A problem with Aerobic Units is the potential, during peak flows, to allow solids to carryover into the drain field or final disposal system. By adding the filter, we have put in place a physical barrier that will not let solids larger than 1/32" escape.

Once the design was completed, certification of the changes was requested from NSF.

At the same time we began setting up the production facilities. We decided to outsource fabrication of the fiberglass tanks. So, our molds were constructed and delivered to a local fiberglass shop selected to manufacture the tanks. The tanks are then delivered to our assembly facility. The clarifier, risers, basins, and lids, are made in our rotational molding plant. All other components of the treatment system are bought directly from suppliers and delivered to our warehouse.

While I was procuring tools for the manufacturing plant, Zabel Plant Manager, Gary Ellsworth, was transforming the warehouse in the new building into a highly efficient assembly line. Racks and bins were added to store the many supplies used to assemble the treatment units and assembly fixtures were made to increase productivity and decrease errors.

Fiberglass tanks and lids enter through one door and exit the other as a completed unit.

By the time you read this, we expect the entire process will be complete and we will have started shipping our new "Zabelized" AeroDiffuser™, the best aerobic treatment unit on the market. I think my dad would be proud, he may even forget about that broken drill - probably not!

What do contractors say about the Infiltrator® Chamber System for septic leachfields?

"I tell you, I love these things. They're the way of the future."

Dean Soucy, Tolland, Connecticut

Dean Soucy is a busy contractor who knows he can always rely on Infiltrator chambers for his septic installations.

"Infiltrator chambers make the job a lot easier and faster. I've done Infiltrator jobs all by myself, but stone and pipe jobs need two or three people.

"With stone and pipe, you've got to level the stone by hand, then spread cloth on it. It's too easy to knock the cloth off or crush the pipe with your equipment. And the stone will eventually plug up with soap and silt. Sooner or later, you'll get called back to do it over.

"This doesn't happen with Infiltrators because they're hollow and completely open inside so they don't plug up. They hold the water until it leaches into the ground.

"And, the Infiltrator system is ideal for cramped or small sites. If you're trying to maneuver behind a house with a big truck to get stone in there, you could really damage the lawn. But, you don't have to worry about that with Infiltrators.

"In ten years, I have never had problems. I tell you, I love these things. They're the way of the future."

Infiltrator Chamber Systems are the *confident choice* for septic and stormwater management. Call toll-free

1-888-892-2917

for your *free* Infiltrator Chamber Design Kit.

INFILTRATOR® SYSTEMS INC

Environmental Onsite Wastewater Solutions®

4 Business Park Road, P.O. Box 768
Old Saybrook, CT 06475 888-892-2917 FAX 860-388-6810
www.infiltratorsystems.com

Maintenance BY DESIGN

by Lorene Lindsay

Lorene Lindsay holds a Master's Degree in Environmental Engineering from the University of Florida. She has over 20 years of experience in the environmental field, currently operating her own state certified lab for water and wastewater testing and provides operation and maintenance for small wastewater treatment systems.

The On-site wastewater treatment industry has experienced an explosion of growth and improved technology over the past five years. The variety of products and the many different technologies available for on-site wastewater systems provide much better treatment than in the past and can provide solutions for extremely environmentally- challenged lots. I live in a resort/lake community "blessed" by rocky soil and steep slopes. I am often asked if it is possible to put an on-site system on a particular lot. Of course. The question is if the owner is willing to pay the cost. These more advanced treatment systems have not only a higher installation cost, but also a higher maintenance cost.

If we examine just one area of technology such as septic tank and pump vault filters, we can get a better feel for the tremendous growth in the industry. Several years ago only a few suppliers provided a very basic, simple filter system to be installed in the sanitary tee of an existing septic tank. The most recent product catalog from Zabel® offers 13 pages of filters-all sizes, shapes, and designs including the new "smart" filter to let the homeowner know when the filter needs service. Filters provide good service and play a vital role in making other aspects of the technology work. Without a good filtration system, more advanced treatment may not be possible. However, filters require maintenance. Some filter designs provide features that obviously make maintenance easier, for example, extension handles, easy removal screens, and larger filtration area. Unfortunately, designing a system for easy maintenance doesn't stop with product design. The well-designed product must be properly installed and provide proper access if the wonderful design features are to be realized.

Take a closer look at the application of a filter or screen vault. Does the design and installation of the system take into account future maintenance? To provide maintenance, the filter must be accessible through a large enough opening in the tank to allow a field technician the room to get to it and to use any tools needed to service the unit. What about clearance above the tank to pull out the filter and clean the screen? On more than one occasion, I have found filters installed that literally could not be removed for cleaning.

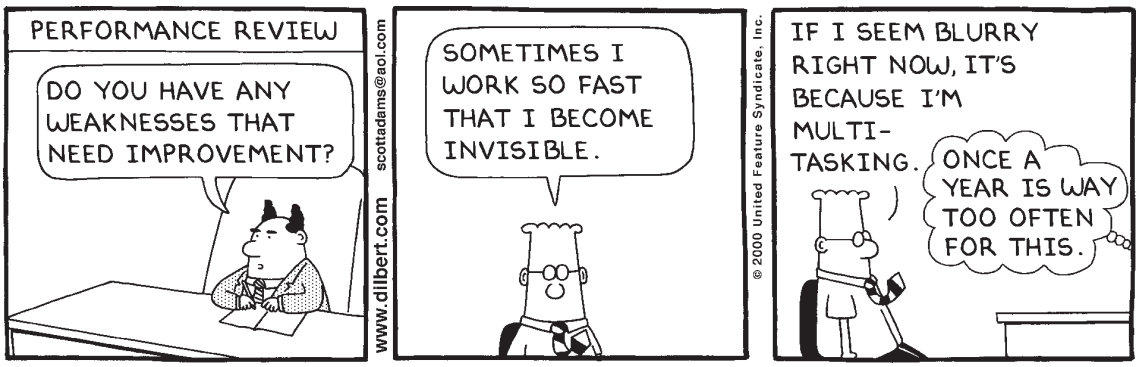
Another common problem is a near-by water source to clean the filter. This source should be part of the specifications for the system. If the water source is potable water, then protection against backflow should be provided or taken into account in the cleaning process. Maintenance must be done in such a way that the system does not pose a health or environmental threat while maintenance is being completed. If every designer/installer were required to provide maintenance on the system, the design and installation would be much more carefully planned for these on-site systems.

The more complex the design and technology become, the more maintenance is required for the system to keep it operating as designed and providing a high level of treatment.

As an industry, we have begun to realize the importance of maintenance and many new treatment systems require a long-term maintenance contract. We still have some work to do to set national standards for operational personnel and to provide the training needed to prepare field technicians. We have begun to look at standards for certified installers and Zabel has become an early leader by establishing their Installer Certification Training Program. We also need to have certified operations and maintenance specialists who will be available to keep these systems operating properly.

The On-site Wastewater Treatment Industry is a challenging place to be these days. Keeping up with new technology is difficult and keeping up the maintenance is even harder. Better designs start with the product itself but the technology must be applied properly, the equipment correctly installed, and the system properly maintained to make on-site treatment a success.

For Brian and Becky



DILBERT reprinted by permission of United Feature Syndicate, Inc.

"Top Ten reasons to choose Zabel®"

10. Our positive influence on the onsite industry.
9. We help solve your problems.
8. We understand you and your business.
7. We sell only quality products with research and testing to back them up.
6. We provide support to add value to all our products.
5. Zabel staff is accessible and knowledgeable.
4. We keep in contact with you.
3. We keep our promises.
2. 100% satisfaction guaranteed on all our products and services.

And the number 1 reason to choose Zabel:

1. OUR PEOPLE AND THEIR CUSTOMER SERVICE ATTITUDE!

Elementary, My Dear Watson!

Sherlock Holmes and Dr. Watson went on a camping trip. After a good meal, they went to sleep for the night. Some hours later, Holmes awoke, nudged his faithful friend, and said: "Watson, look up at the sky and tell me what you see." Watson replied, " I see millions and millions of stars." "And what does that tell you?" asked Holmes.

Watson pondered for a minute. Then he answered: "Astronomically, it tells me that there are millions of galaxies and potentially billions of planets. Astrologically, I observe that Saturn is in Leo. Horologically, I deduce that the time is approximately a quarter past three. Theologically, I can see that God is all-powerful and that we are small and insignificant. Meteorologically, I suspect that we will have a beautiful day tomorrow. What does it tell you, Holmes?"

Holmes was silent for a minute, then replied: "Watson, you idiot. Someone has stolen our tent!"
Author Unknown

Watson was so distracted by the beauty and vastness of what he saw he couldn't see the simple problem directly in front of him. Many companies fail to see directly in front of them and realize that their greatest asset and primary function is to achieve the highest level of customer service and satisfaction possible.

Zabel® recognizes that keeping our customers satisfied is the secret to our past success and is the most important key to lead us to greater successes in the future. This recognition has led us to develop the highest quality customer service program in the onsite industry. Every day, the Zabel team strives to serve you in the most efficient and friendly way possible.

We have organized our team into two distinct groups of people, each with their own unique characteristics and functions.

By Brian Borders, R.S.

Zabel's Account Managers process orders and develop personal relationships with you and your business. It is their direct responsibility to see that you are happy with the products you received, that they were ship ped on time, and that they worked as promised. If any of these promises are not kept, your Account Manager will do whatever it takes to keep you satisfied.

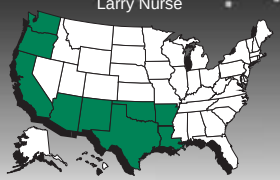
Our Environmental Specialists spend their days and nights traveling across the country, providing educational assistance and technical expertise to all stakeholders in the industry. They are constantly working to help you increase your business potential and share ideas about others' success. The Environmental Specialists have a vast array of onsite knowledge, regulatory expertise, and practical field experience. They know the onsite industry and understand your daily struggles.

Just as our employees are customer driven, so is our technology. Your first direct contact with Zabel is typically the phone. A sophisticated phone routing system recognizes area codes and directs your call to the Account Manager handling your personal account each and every time that you call. This Account Manager has access to all applicable data and information to assist you in placing your order. Typically, by the time you hang up the phone your order has been processed and is well on its way. Each and every customer will receive a personalized confirmation of their order as well as a follow-up call to check that all products were received and in a timely manner.

Customers who purchase our products are important to us and so are those who call to inquire about our products and services. Each and every inquiry is important and we spend the time to adequately answer questions and provide the resources needed to assist you. There are no secretaries or receptionists at Zabel to screen calls or take messages. You may contact each and every Zabel employee through direct phone lines, fax lines, and email addresses or you may call our toll-free number. All of this technology has been assembled so that you, the customer, will be satisfied with every aspect of doing business with our company.

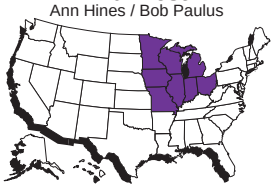
We have spent a great deal of time developing our customer service programs and will continue to improve and refine those services based upon feedback we receive from you. Zabel realizes that a company must look toward the future and reach for those elusive stars but all of those efforts are pointless if you can't see the customers directly in front of you.

West
Larry Nurse

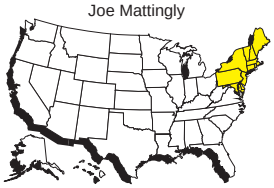


Central (including Alaska & Hawaii)
Any of our Account Managers can assist you.
1-800-221-5742

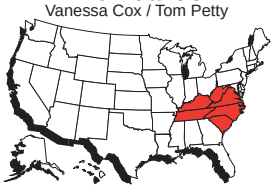
Mid West
Ann Hines / Bob Paulus



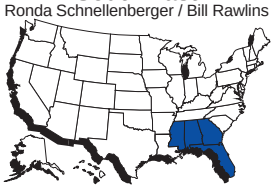
North East
Joe Mattingly



Mid Atlantic
Vanessa Cox / Tom Petty



South East
Ronda Schnellenberger / Bill Rawlins



Zabel® Comes to You!

The development of new on-site technologies has resulted in many organizations scrambling to educate and train their members and employees. Zabel's Environmental Specialists spend the majority of their time working with groups of professionals in their educational efforts. At Zabel, we pledge our support to the education of the on-site professional. Whether your organization is that of installers, manufacturers, regulators or design engineers, Zabel wants to assist you in your training efforts.

Simply complete the blanks/boxes below, and return the form. Your Environmental Specialists will contact you to arrange a time, place and date. Zabel can participate in your agenda of on-site training, or we can conduct a complete training session over the various technologies new to the industry. We look forward to sharing in the success of your organization.

Organization Name _____

Address _____

City _____ State _____ Zip Code _____

Phone _____ Fax _____ Email _____

Complete Training Class _____ One of Participants at Training Class _____

Expected Number of Attendees _____

Topic(s): Check all areas of interest

☐ Effluent Filters ☐ Effluent/Sewage Pumps and Sizing ☐ Discharge Systems ☐ Alarms & Controls

☐ Access Systems ☐ Grease Traps ☐ Peat Systems ☐ Basin Systems & Aerocell ☐ Codes/Standards

☐ Aerobic Systems ☐ STEP Systems ☐ Other _____

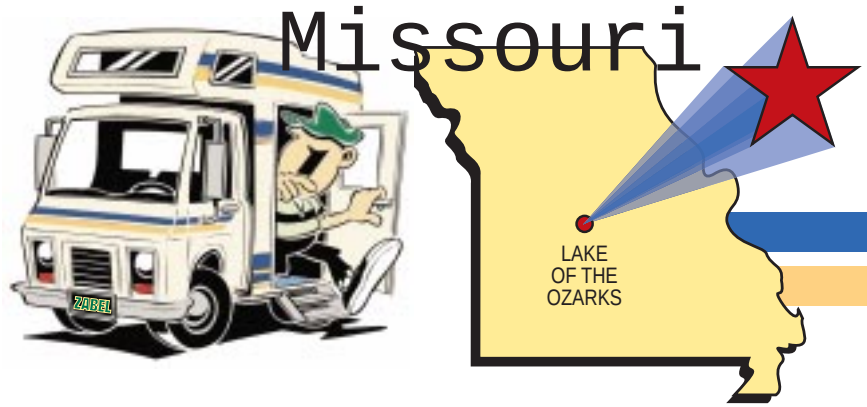
Bill Rawlins
Environmental Specialist
Email: bjr1171@aol.com
Ph: 904-543-1607

Bob Paulus, R.E.H.S.
Environmental Specialist
Email: Bpaulus@zabel.com
Ph: 1-800-221-5742

Tom Petty, R.E.H.S., P.G.
Environmental Specialist
Email: Tpetty@zabel.com
Ph: 1-800-221-5742

MAIL TO:Zabel Environmental Technology/Training
P.O. Box 1520 Crestwood, KY 40014

Zabel® Comes to You!



By Bob Paulus, R.E.H.S.

May 16th through May 19th, Zabel™ hosted our first series of Zabel Certified Installer classes (ZCI) in the heart of Missouri. Classes were held in St. Louis and at the Country Club Resort in Lake of the Ozarks. The series of courses were designed to instruct professional engineers, suppliers, installers and regulators about the proper methods of installation, maintenance, and use of all Zabel products.

Not only were we able to teach these professionals about Zabel products, we were also able to demonstrate the user friendly services and technical support for which Zabel is widely known. Many of our participants were there to learn about Zabel's STEP systems and our newest form of fixed media treatment, the Aerocell™. The participants were also taught tricks and techniques for installing filters and access risers.

In the classroom, a functional Aerocell module was displayed to enable participants to see exactly how the system works. Wes Combs, *Advanced Systems Manager*, gave instructions on sizing, load rates, dosing volumes and foam setup, as well as, water quality and other aspects of the Aerocell. Sean Bauer of Versailles Wilbert Vault provided a 1,000-gallon tank fitted with cast-in-place risers for display.

Zabel Marketing Associate, Justin Volrath of Volrath Sales, led another popular session. He provided instruction to installers on pump sizing calculations for Zabel's complete line of sewage, effluent, and high head pumps.

My portion of the program was to give instruction on filter design, installation, and sizing. I also included some insights on how to start maintenance and service contracts using Zabel products to increase business and income opportunities.

Zabel's Missouri Gang

Zabel's AeroCell System protecting beautiful Lake Ozark.

Bob Paulus and Duane McIntyre of AFEC Construction installing the AeroCell System

The level of participation on the behalf of the attendees was outstanding. Aside from the seriousness of our sessions, we also were able to joke with class members about our previous work in the regulatory community while building a sense of camaraderie among all the professions we instructed. Just as important, Zabel was able to learn that customers in Missouri appreciate the way they are treated when they call Zabel's team of Account Managers.

After completing the course, we have confidence in our certified installers, suppliers, designers, and yes, even the regulators! They all learned together, which will ensure a consistent means of implementing Zabel products from all perspectives. Now, the people in the 'Show Me State' are up to speed and Zabel will move on to provide these opportunities across the country for those interested in increasing their knowledge and business opportunities with respect to Zabel technologies. We would like to thank everyone who attended the Missouri courses; you now have a share of Zabel's success!

Justin Volrath (Volrath Sales) giving a hand.

Another Zabel™ FIRST -

The Self-Cleaning Filtered Pump Vault

By John Christensen, B.S., M. Eng.

Back in the "old days", when you installed a pump in a septic tank, it was set on concrete blocks on the bottom. Failures would occur when large solids and other foreign matter such as tennis and golf balls, feminine hygiene products, cigarette butts, disposable diapers, etc., tried to pass through the pump. Now, installers have stopped putting pumps on concrete blocks and started using filtered pump vaults to house them inside the septic tank. Filtered Pump Vaults have two advantages. First, they protect the pump by filtering large debris and foreign matter. Second, they protect the drainfield by filtering smaller particles and keeping them in the tank.

Zabel's newest filtered pump vault, which offers 1/16" filtration, will remove both large and small solids, protecting the pump and drainfield, just as our other pump vaults do. However, we've added another unique feature. All current models require routine cleaning of the filtering mechanisms. The filter cartridge in the FPV-H34-A101 has to be removed and hosed off. The filter panels in all the other models must be removed and cleaned, too. The filtering mechanisms on the new pump vault do not require routine cleaning. **They are self-cleaning!**

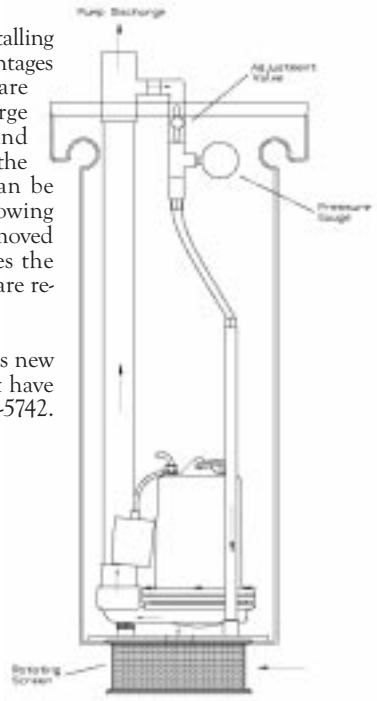
Here's how it works. Effluent is drawn in through the bottom of the pump vault. It passes through a rotating filter and is then pulled into the pump and sent through the discharge piping. A tee located in the discharge pipe sends a portion of the filtered effluent back to the spray nozzles located near the cylindrical filter. The filtered effluent is sprayed on the filter, causing it to rotate. As the filter rotates, the spray nozzle washes off any debris that may have begun to collect. Each time the pump doses, the nozzles will spray filtered effluent through the entire filter screen. (See drawing)

A concern that some people have with pump vaults is that filter mechanisms can become clogged with material, the pump can run dry and the motor will be destroyed. The main advantage of the self-cleaning FPV is that it will keep the filtering mechanisms clean and allow effluent to reach the pump so this doesn't occur. This won't normally occur with Zabel FPV's because our filtering mechanisms slough solids back into the tank. However, this would be a worthwhile investment if your pump vault traps solids. For a small increase in price, you can have a self-cleaning FPV and be assured the pump won't run dry.

The new pump vault is available in 36" and 44" lengths with the inlet being through the bottom of the pump vault. Also included in the package will be all the necessary fittings from the tee off the pump discharge to the spray nozzles; as well as a ball valve and pressure gauge used to regulate and monitor pressure to the spray nozzles.

When installing the new self-cleaning pump vault or one of Zabel's other pump vault models, you can take an additional step for assuring your pump doesn't run dry by installing a Zabel Float Tree. This has several advantages over typical installations where floats are attached directly to the pump discharge piping. First, it organizes the floats and keeps them from getting tangled around the pump or discharge piping. Also, it can be installed directly on the pump vault allowing the pump and discharge system to be removed without removing the floats. This saves the time of readjusting the floats once they are re-installed.

If you are interested in purchasing Zabel's new Self-Cleaning FPV or Float Tree or just have some questions, please call us at 1-800-221-5742.



U.S. Patent 4,822,486; 5,108,592; 5,215,656; 5,356,582; 5,502,808 Other Pantent Pending

2000

October

4th - 6th, MSPS Educational Conference, Lake Ozarks, MO., Grace Stenke 314-843-5053
4th - 6th, OEHA Fall Educational Conference, Dayton, OH., Ken Sharkey 513-564-1761
14th - 18th, WEFTEC 2000, Nannette Tucker 703-684-2434
16th - 18th, MC St. Onsite W.W. Conf., Raleigh, NC. Joni Tanner 919-513-1678
18th - 19th, NW OEHA, Findley, OH. Jason Menchhofer 419-238-0808
20th, VA Env. Health Assoc., Blacksburg, VA. Eric Valentine 800-345-3132 ext. 102

November

1st - 2nd, MHOA Conference, Lake Ozarks, MO., Donna Moultrop 617-489-8249
1st - 4th, Nowra Conference, Grand Rapids, MI., Nowra 800-966-2942
1st - 3rd, TN. Environmental Health Assoc., Lewisburg, TN. Bill Neal 423-334-5185
29th - Dec. 1st, DOWRA 4th Annual Conference, Jack Hayes 302-739-4761

December

11th - 12th, AIM Conference, Houston, TX., Robin Terry 877-323-5246

2001

January

1st - 3rd, NASTT No-Dig 2001, Nashville, TN., Faye Boyle 301-468-3210
18th - 20th, Auburn Conference, Auburn, AL., Leslie Garner 205-652-3803
26th - 27th, FOWA WinterFest, Kevin Sherman 850-402-9230

February

8th - 12th, NPCA & MCX Convention, Charlotte, NC., Pete Tensley 800-366-7731
14th - 17th, Pumper Show, Nashville, TN., Cole Publishing 800-257-7222

March

11th - 14th, ASAE Conference, Fort Worth, TX. David Gustafson, 800-955-8636
26th - 27th, Ontario Onsite W.W. Conf., Mississauga, ONT. Canada, Shelly Bonte-Gelok 519-824-4120 ext. 4687

June

30th - July 3rd, NEHA 2001, Atlanta, GA., NEHA 303-756-9090

September

17th - 18th, NW Onsite W.W. Treatment Exhibit, Robert Seabloom 206-543-5539

At the time of printing those shows highlighted in red will have someone from Zabel speaking or exhibiting at the conference.

For the most up to date listing, or to submit a Conference or Trade Show see the Trade Shows page under the Coffee Shop section on our website.

- ✔Reservations
- ✔Scheduling
- ✔Planning
- ✔Organizing
- ✔Travel
- ✔Registration

If you are having a Conference or Expo, and would like the information printed in the next Zabel Zone™ or to appear on the Internet, please send your info to us. Or go online to www.***zabel***.com, click the Coffee Shop, then click Trade Shows, then click the Post button and start typing.

Name of Conference _____

Date(s) of Conference _____

Contact Person _____

Telephone number _____

Send this form to: Zabel™ Environmental Technology, c/o Tom Jenkins/Conferences, P.O. Box 1520, Crestwood KY 40014

ZABEL® ASSISTS
HOMEOWNER IN NEBRASKA

At the Bart Pyper residence in Nebraska, the septic system had failed several times. It became necessary for them to have an above-ground system, but because of the unusual circumstances, no local plumber wanted to handle the installation.

That's when Zabel® and roughly 20 donors got together to help put the new system at the Pyper home as a demonstration. Tom Petty, one of Zabel's Environmentalists, was there to lend hands-on assistance, including installation of the pump. The only cost to the homeowners was having the electric hook-up done.

Bart and Cyndi Pyper wrote Tom a note to say thank you, as well as taking out an ad in *The Grand Island Independent*, the local newspaper, thanking all the participants. They said:

"Dear Tom, We appreciate all you did to support the demonstration last week in Grand Island. Things are working well! Please pass on our thanks to Zabel for donating their products. We're very grateful! . . . ."

You're welcome. Zabel has been blessed and we like to help out whenever possible.

Zabel'sTom Petty installing the pump

Hydro-*Action* Proudly Presents . . .

Set-N-Go™ Installation Package

A new full-featured installation package including pretreatment tank, Class I wastewater treatment plant, and pump tank-- all joined together into one sturdy package. The complete package installs in about 3 hours, saving time and money!

Hydro-*Action*, Inc. offers Class I onsite wastewater treatment plants, which treat domestic wastewater to secondary treatment standards (clear odorless liquid). Available auxiliary equipment includes the Aqua Drip Wastewater Effluent Management System and dripline, for use with drip irrigation and other disposal methods.

Financing Available

for wastewater systems and other home improvements.

HYDRO-ACTION INC.

* Hydro-*Action*, Inc., is not soliciting, nor will it accept, money or other consideration at this time. An offering circular with complete information on Hydro-*Action*, Inc., manufacturer of onsite wastewater treatment products (Gig Drewery, president), will first be distributed. Indication of interest in this investment opportunity involves no obligation or commitment of any kind.

Call (800) 370-3749 to learn how to become a Hydro-*Action* dealer or distributor!

8645 Broussard Road * Beaumont, Texas 77713 * 800-370-3749 * fax: 409-898-1332
www.hydro-action.com
Contact us to be added to our newsletter mailing list!

Helping Hand

By Harry Nurse

Zabel's® Helping Hands program, the brainchild of Bill Rawlins, Jr., Southeastern Environmental Specialist, continues to provide assistance for homeowners who cannot afford to repair their failing septic system. Bill says, "The Helping Hands program is designed to provide Zabel products and services to those who can least afford and most often need them."

Zabel recently became involved in helping homeowner Hilda Overstreet of Lake Monroe, Florida, in the repair of her failed onsite system. Marci Carter, a caseworker for Better Living for Seniors in Lake Mary, was the person who knew of the problem and got the ball rolling.

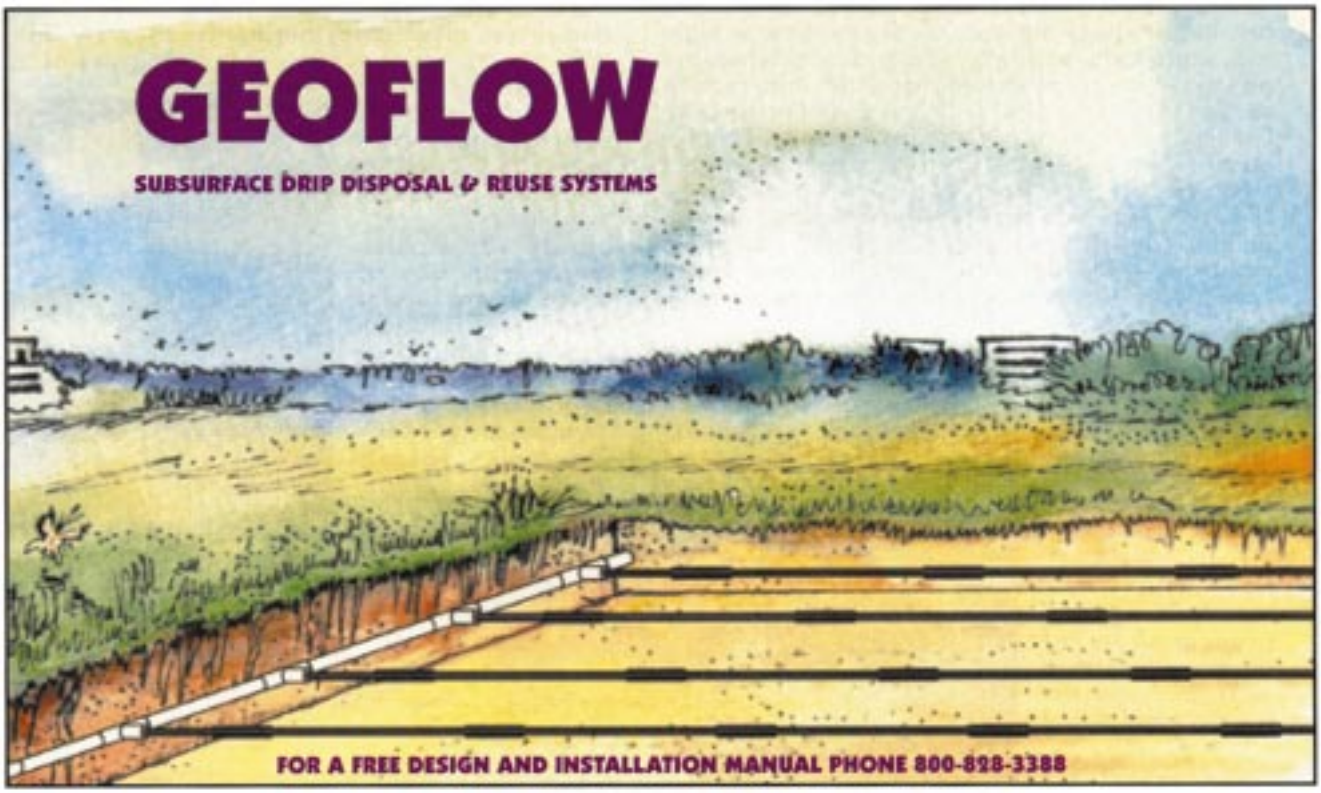
As is always the case, several people were needed to put this project together and we would like to mention a few of them. Carl Anderson, Owner-Operator of Dial Septic in Oviedo, Florida, donated labor, materials and the cost of two extra laborers. Mike Nowak, Area Sales Manager for Infiltrator Systems donated his labor, pump-out, field lines and helped in coordination. Paul Sandoval waived the permit fee and Zabel helped with donation of risers, lids, filter, fill material and pump-out.

Thanks to all who were involved in helping out a homeowner in need!

Existing Failed System

Mike Nowak and Carl Anderson, Owner of Dial Septic

Mike's wondering where the backhoe operator went



By John Christensen
B.S., M. Eng.

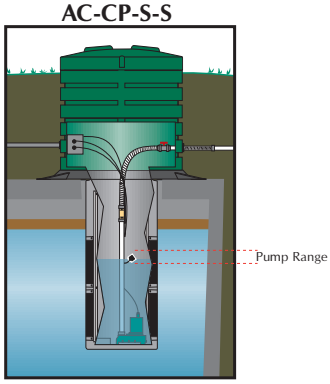
TechTalk

1. What are the maximum allowable flow rates for the A100-12x30 and A300-12x30 filters?
The A100-12x30 and A300-12x30 are designed to handle 4500 gallons per day, which translates into a per minute flow volume of 3.125 gallons.

Proprietary research done by Zabel has allowed us to obtain data of head rise versus flow rate for clean filters and filters that are partially matured. Based on this research, both filters, when completely clean, would allow a flow of approximately 25 gallons per minute with a 2-inch head rise in the tank. If the percent maturation is 50%, the allowable flow rate decreases to about 20 gallons per minute with the same 2-inch head rise. Keep in mind that the filters are still only rated for 4500 gallons per day and high flow rates for extended periods of time will result in an accelerated maturation of the filters, leading to decreased time between servicing.

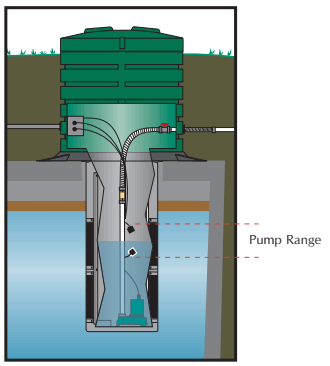
If you have questions about your particular high flow application, please call us at 1-800-221-5742 for assistance.

AC-CP-S-S



2. What are the differences between an AC-CP-S-S and an AC-CP-S-C?
The AC-CP-S-S uses one pump switch to turn the pump on and off. This limits your draw down range to maximum length of tether of the pump switch. Also, pump switches carry the full current needed to run the pump and are generally rated to 15 Amps. If your pump is rated higher than 15 Amps, the pump switches will not function properly.

AC-CP-S-C



The AC-CP-S-C uses two separate control switches to turn the pump on and off. This allows for an increased pumping range. Also, the control switches carry just enough current to activate the motor contactor, which turns the pump on and off. The standard model panel has a contactor rated up to 15 Amps, but this can be increased to 30 Amps if needed for your particular pump.

3. Does a turbine pump require a control panel?
No. A control panel can be used or one could use a combination of a junction box and high water alarm.

If a junction box and high water alarm are being utilized, a pump switch will be connected to the pump power cord inside the junction box. A separate alarm would then be used to indicate a high water condition.

However, an installation using a control panel is preferred because it combines the junction box and alarm box into one unit, which makes the installation easier. In addition, the control panel has a pump run light as well as an H-O-A (Hand - Off - Automatic) switch for manual operation.

For John

DILBERT reprinted by permission of United Feature Syndicate, Inc.

the Ecoflo® Biofilter

Residential

Communal

Commercial

Municipal

The innovative decentralized wastewater treatment system

Ideal for:

- new construction
- replacement of failing systems
- small lots
- areas of poor soil percolation
- high water tables

Premier Tech Environment

1-877-295-5763

6021, Terrace Hills Dr. Birmingham, AL 35242, USA E-mail: ecoflo@premiertech.com

Zabel Outdoors

Be sure to read Rebel's Corner to hear all about Harry's balloon ride.





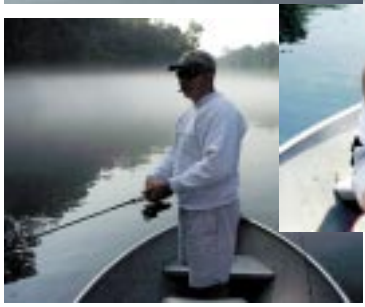


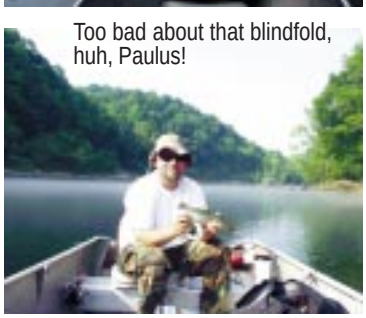




Zabel's Vanessa Cox (blue shirt) hitched a ride, too.

Tom Jenkins took Bob Paulus to one of his favorite fishing spots. They caught about 20 rainbow and brown trout.





Too bad about that blindfold, huh, Paulus!


Jeff Iverson of Infiltrator Systems arrowed this nice 6 x 6 bull elk in Colorado coming to his calls. The shot was within 15 yards. That may sound easy, but when there's a rutting 1200 pound animal at less than 15 yards away from you, it's a tense situation to say the least. GREAT BULL JEFF.

Dodgers

Peanut League

Chemistry

The Youth Baseball season is over. The 2000 Peanut League Dodgers didn't win the Championship this year, but to me, all my players this year were Champions.

The Dodgers of 2000 were not the best offensive team I've ever coached (that distinction goes to the '96 Dodgers). They weren't the best defensive team either (the '98 Dodgers own that). But the 2000 Dodgers were the best overall team I've ever had the pleasure to coach.

The five Senior Players~Kevin Cruz, Jacob French, Savannah Hines, Jonathon Marshall and Theo Terry won 59 career games, and lost only 20 during their 3 Peanut League years. Kevin set new career (166) and single-season (76) marks for hits. Jonathon and Jacob joined Kevin as the fourth and fifth members in the exclusive Dodgers 100 Career Hits Club.

Even beyond these impressive stats, however, this group of kids had real team chemistry. They looked out for one another. Joey isn't the greatest hitter on our team, but always played with a lot of heart and came up with a couple of hits that kept us going. His teammates recognized that, and unanimously awarded him the game ball. I don't think I've ever been prouder of a bunch of kids than I was at that moment.

Great season, Dodgers! Let's go for the championship in 2001.

Tee Ball League

Zabel® sponsored two ball teams this year- both named Dodgers. One team was the powerhouse of The Peanut League, the other was more like The Keystone Cops, but we had a great season, too.

Harry and I were the coaches (or possibly the keepers) of the Tee Ball Dodgers. With ten four-year-old players (eight boys, two girls), our greatest challenge was trying to get only one or two players to chase the ball. Initially, it was enthusiastic pandemonium as all ten raced for the ball and the one who actually came up with it would stand and bask in the glory rather than throwing it to first base to get the out or end the play. Anyway, they somewhat got the concept by the last game.

The kids had a good time and Harry and I had a great, if somewhat humbling, time. In another year, we may even be ready for it again.

JOIN
The Leaders

The Zabel Zone is the most effective advertising medium in the Onsite Industry.
Call to **JOIN** the industry leaders in the Zabel Zone.

800-221-5742

Faces Behind the Phones

Harry Nurse
President

Jan Nurse
Zabel Zone Editor

Theo Terry, R.S.
VP Government Relations

Becky Page
VP Business Services

Amy Sparks
Accounts Receivable

Lesley Jenkins
Credit & Collections

Tom Petty
P.G., R.E.H.S.
Environmental Specialist

Bob Paulus, R.E.H.S.
Environmental Specialist

Bill Rawlins
Environmental Specialist

Wes Combs, R.S.
Advanced Treatment Systems Manager

Brian Borders, R.S.
VP Marketing

Vanessa Cox
Account Manager

Ronda Schnellenberger
Account Manager

Ann Hines
Account Manager

Joe Mattingly
Account Manager

Larry Nurse
Account Manager

Linda Ellsworth
Production Assistant

Gary Ellsworth
Roto-Mold Production Manager

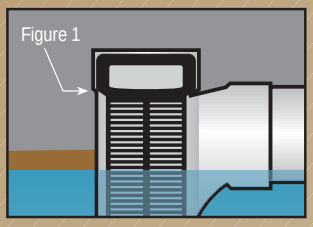
John Christensen, B.S., M.Eng.
Engineer

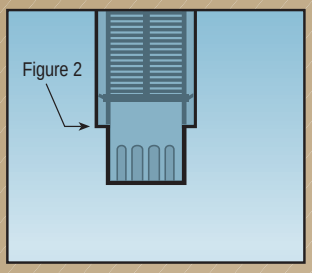
Rebekah Witherington
Travel & Resource Manager

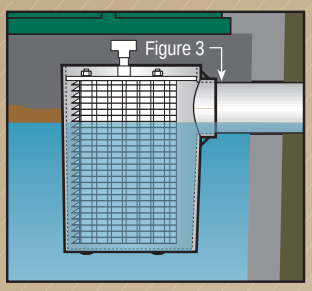
Tom Jenkins, A.A.S.
Media Services Manager

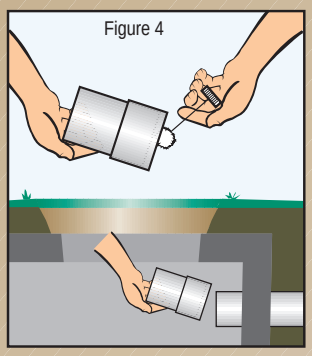
Difficult Installations Made Easy

Now, with our full line of accessories and proven techniques developed in the field with contractors, pumpers, installers and the Zabel™ Team, there are easy solutions to difficult installations. Use one of the following techniques to install any model of Zabel Filter.









Retrofitting filters to a existing system

1. Uncover the septic tank and remove the outlet access cover.

2. Pump the tank completely or to at least below the level of the outlet tee.

3. To install the A1801, slide the filter into the outlet tee until the top edge of the filter is flush with the inside lip of the tee- sch 40 or 35 PVC pipe must be used **(figure1)**.

4. When installing the A1801, inspect the tee to see that the pipe extends below the bottom of the filter. With the A1801HIP model, the bottom deflector must extend below the bottom of the pipe **(figure2)**.

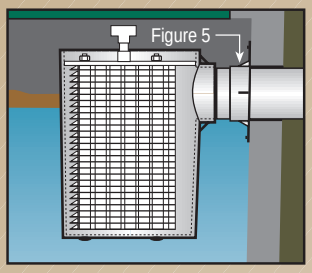
5. When installing either the A100 or A300, the outlet tee should be removed while leaving at least 3 to 4 inches of the pipe extending into the tank on which to glue the filter **(figure3)**. Use a 4" sch 40 or 4"sch 35 reducer if the pipe extending into the tank is sch 35 **(figure4)**.

6. If the method described above isn't possible, clean the area around the outlet and attach a standard closet flange onto the tank wall over the outlet. Install the filter with a section of sch 40 4" pipe **(figure5)**. The Supplementary Support Method should be used **(figure6)**.

7. Use the Supplementary Support Method when extending the filter inward18" or more from the end of the tank or in high strength waste applications. These high strength waste applications such as restaurants or dog kennels may require additional support to handle the extra weight.

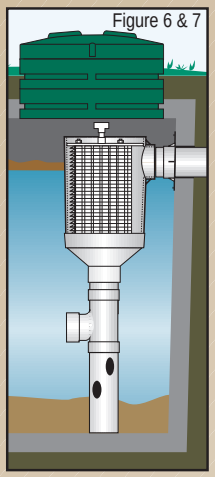
8. The Supplementary Support Method involves gluing a 4" extension adapter to the bottom of the filter case. Next, for support, glue a section of 4" Sch 40 PVC pipe with an inverted Sanitary Tee and then another section of pipe in the bottom of the adapter. Place the filter, adapter, and the support pipe on the outlet pipe. Adjust the support pipe so it rests level on the bottom of the tank. Remove and cut at least four 2" holes from top to bottom in the support pipe **(figure7)**.

9. Installation of all Zabel Filters outside of the septic tank is accomplished by using a ZEUS™ Basin Assembly, model RB-BAS-20x38, RB-BAS 22x38, or RB-BAS-26x38 **(figure 8)**. This is added between the septic tank and the disposal field by cutting the drain line. When installing an A100HIP or A300HIP, install a Zabel 4" extension adapter and a section of 4" Sch 40 pipe that extends to the bottom of the basin. Drill several 1" holes around the bottom of the extension adapter to allow solids to slough back into the basin **(figure 9)**.



10. When installing an A100HIP or A300HIP unit in a tank, use the Supplementary Support Method **(figure 10)** along with a section of 4" Sch 40 PVC pipe extending from the lower filter case outlet blank to the wall. This will provide additional support for the larger model filters **(figure 11)**.

11. Multiple filter installation may be required for systems having high daily flows. This is accomplished by using a "Y" fitting for two filters **(figure 12)** or by constructing a manifold using a combination of fittings for multiple filters **(figure 13)**. A larger access may be required for servicing this configuration.



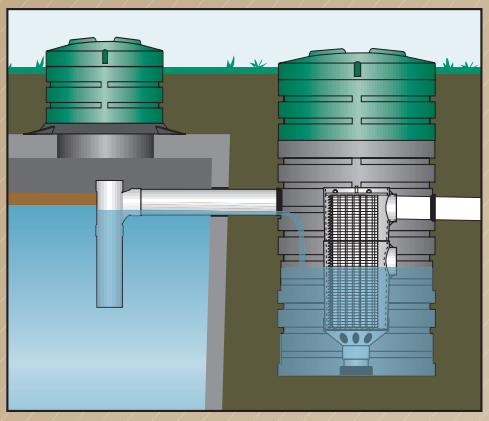
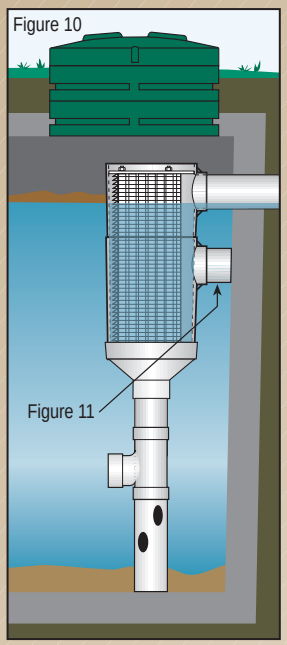
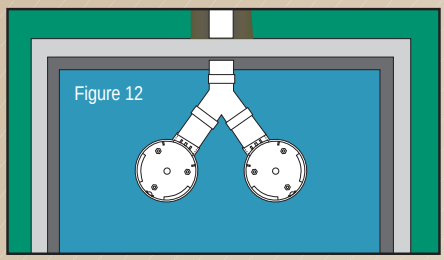
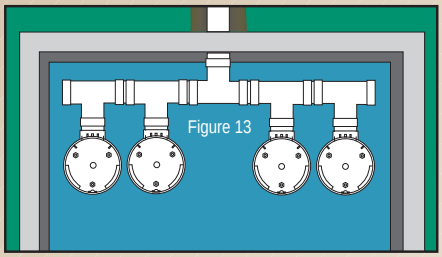


Figure 10





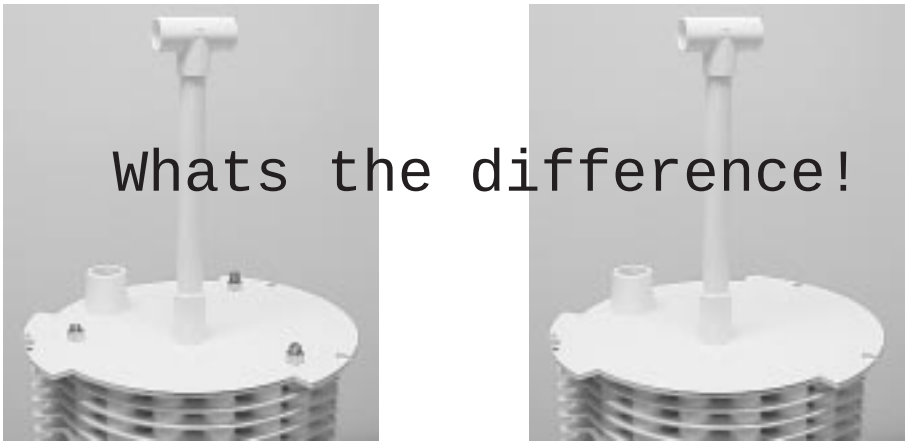


Do you have a question about an installation?

Call the Zabel Team at: 1-800-221-5742.

By John Christensen
B.S., M. Eng.

Engineering Note!



Zabel is currently in the process of improving the 12" version of the A100 and A300 series filters. The stainless steel rods and nuts are being eliminated and replaced with a PVC center rod for support. The design is similar to that of the 8" A100's and A300's. The filter plates will be modified so they fit together and a 1/2" piece of schedule 40 PVC pipe will be used to support the filter plates and hold the cartridge together.

The top of the filter will have a 1/2" socket that will accept 1/2" PVC pipe. These filters will continue to come with a 1 foot section of 1/2" PVC pipe and a 1/2" PVC tee to use as a handle. A shorter handle can be installed by cutting the pipe. If a longer handle is desired, it is necessary to purchase the desired length of 1/2" sch40 PVC pipe.

All of the support and handle extension parts are made of PVC. This material is strong, durable, and chemical resistant. In addition, since it is PVC, most installers have the necessary solvent and primer to solvent weld (glue) the pieces together.

"Rebel Humor"

You might be a redneck if you understand this...

Many many years ago when I was twenty three,
I got married to a widow who was pretty as could be.

This widow had a grown-up daughter
Who had hair of red.
My father fell in love with her,
And soon the two were wed.

This made my dad my son-in-law
And changed my very life.
My daughter was my mother,
For she was my father's wife.

To complicate the matters worse,
Although it brought me joy,
I soon became the father
Of a bouncing baby boy.

My little baby then became
A brother-in-law to dad.
And so became my uncle,
Though it made me very sad.

For if he was my uncle,
Then that also made him brother
To the widow's grown-up daughter
Who, of course, was my step-mother.

Father's wife then had a son,
Who kept them on the run.
And he became my grandson,
For he was my daughter's son.

My wife is now my mother's mother
And it makes me blue.
Because, although she is my wife,
She's my grandmother too.

If my wife is my grandmother,
Then I am her grandchild.
And every time I think of it,
It simply drives me wild.

For now I have become
The strangest case you ever saw.
As the husband of my grandmother,
I am my own grandpa!

Found on the internet, author unknown

HOW DO YOU SEAL A SEPTIC TANK *WATERTIGHT?*

CAST-A-SEAL™

U.S. Pat. No. 5,599,212

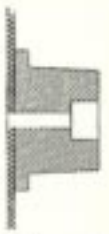
Now you are ready to provide your customers and specifiers with ***real watertight performance.*** **CAST-A-SEAL** is an all-rubber connector which is cast into the septic tank when the concrete is poured. The **CAST-A-SEAL** gasket is folded into the casting position and placed on the reusable, heavy-duty solid plastic mandrel that is bolted directly to the septic tank form. After casting, the gasket is simply unfolded at the job site and tightened around the pipe, using the supplied stainless steel take-up clamp.

CAST-A-SEAL meets ASTM C-923 requirements, more than the toughest septic tank ordinances require.

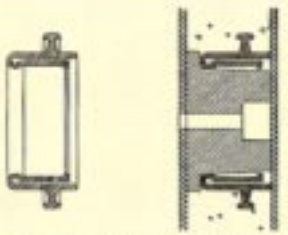
CAST-A-SEAL is designed for standard 4" PVC pipe and has an accommodation range of 4.90" to 4.70". The heavy duty mandrels come standard for 3" walls. Other sizes and styles are available by special order. Please specify when ordering. *Also available in Nitrile Rubber for oil and gas resistance.* For samples please call our customer service department at (800) 348-7325.

6" FOR GREASE TRAPS AND GREASE INTERCEPTORS

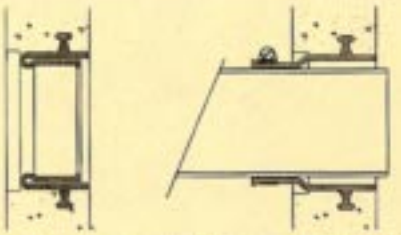
CAST-A-SEAL - ***YOUR SEPTIC TANK CONNECTION***



▶ Attach mandrel to outside form wall.



▶ Invert gasket into casting position and place gasket on mandrel. Pour concrete.



▶ Strip form, leaving gasket in place. Invert gasket to outside of tank. Insert pipe and tighten take-up clamp.

MCX 2000 Exhibitor
Booth #301

PRESS-SEAL

PRESS-SEAL GASKET CORPORATION

6935 Lincoln Parkway, Fort Wayne, IN 46804
(219) 436-0521 • Fax: (219) 436-1908 • (800) 348-7325
Web site: http://www.press-seal.com

While others imitate

We improve!

NEW

Introducing the Zabel 8” filter.

- Built in Reducer
- Case hub accepts 3”, 4”, or 6” pipe
- Flow rates from 800 gpd to 3000 gpd
- Available in 4 different lengths
- Redesigned filter plates

Patents Issued & Pending

1-800-221-5742

Visit our Website **www.zabel.com**

MADE IN USA

Zabel Environmental Technology™
P.O. Box 1520
Crestwood, KY 40014

Change Service Requested

PRESORTED
STANDARD
U.S. POSTAGE
PAID
LOUISVILLE KY
PERMIT #1925

With Zabel you can:

Order Direct