The Clarifier

Wisconsin Wastewater Operators' Association, Inc.

VOL. 191, JUNE 2011

45th Annual W.W.O.A. Conference
October 4-7, 2011 LaCrosse, WI
LaCrosse Convention Center
Holmen Wastewater Treatment Facility – Host

Evansville Wastewater Treatment Facility, Evansville, Wisconsin
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The Clarifier is the publication of the Wisconsin Wastewater Operators’ Association and is intended to inform and educate the membership on issues related to the treatment and control of wastewater. The Clarifier is produced five (5) times each year: February, April, June, September, and December. All members are encouraged to contribute to the mission of the Clarifier.

The Wisconsin Wastewater Operators’ Association is a non-profit organization dedicated to educating, informing, and advancing the wastewater profession. WWOA has approximately 2,000 members divided throughout six regions: Southeast, Southern, Lake Michigan, North Central, Northwest, and West Central.

2010 - 2011
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President’s Message June 2011: Upcoming conference details

By the time you receive the June issue of “The Clarifier”, summer will be here with hopefully warmer days. This certainly has been a wet and cool spring so far. There are many summer activities we plan for in Fond du Lac such as taking tanks out of service for inspection and routine maintenance. Lots of rain means high flows for most of us making tank inspections difficult and sometimes impossible. I hope for a drier summer.

In June or early July you will be receiving your registration packets for the 45th Annual WWOA Conference to be held October 4th-7th in La Crosse at the La Crosse Convention Center. I would like to formerly invite all of you to attend this year. Wade Peterson, the technical program committee chair along with the technical program committee have put together another great conference.

The keynote address will be given by Scott Friedman, a humorous motivational speaker. You can go online at www.funnyscott.com and view his talents. The technical program will have 35 presentations with a focus on nutrient removal. Two pre-conference workshops will be held on Tuesday again focusing on phosphorus laboratory testing, and real time process monitoring set up at the La Crosse WWTP.

Tours will be given at the Holmen WWTP, a NOAA weather station, and Davy’s laboratory. Sporting clays will be at Woods and Meadows in Warren, WI and golf will be at the Forest Hills Golf Club in La Crosse. This year’s entertainment after the banquet, will be a La Crosse area band, “Highway 16” and a dance. On Friday our farewell breakfast speaker will be WDNR Secretary Stepp. The La Crosse Conference Center has informed us that a new parking ramp will be in place at the time of our conference to help alleviate parking issues.

Unfortunately, the operators competition event will not be held this year. The regions were not able to provide three teams which are required to make the event happen. The operators competition committee will be considering new and interesting ideas and hopefully bring the event back for our 2012 conference.

The banquet and annual awards ceremony is another big part of our conference. Randy Thater is our awards committee chair and is accepting nominations for the various awards WWOA offers. Please consider nominating a deserving wastewater professional this year. Explanation of the awards and nomination forms will be in this issue of the Clarifier and on our website, www.wwoa.org.

Scholarships are also available and application can be made by contacting Dennis Egge, scholarship committee chair. Information on scholarships will also be in this issue of the Clarifier.

That’s about it for now. Have a great summer…

Until next time, all the best to you…

Dave Carlson
WWOA President

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2011 Clarifier Due Dates

<table>
<thead>
<tr>
<th>Issue</th>
<th>Submittal Due Date</th>
</tr>
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<tbody>
<tr>
<td>September 2011</td>
<td>July 29, 2011</td>
</tr>
<tr>
<td>December 2011</td>
<td>November 4, 2011</td>
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Evansville Wastewater Treatment Facility – Sustainable Design

By: Dave Sauer, P. E. – Cedar Corporation/Foth Infrastructure & Environment
    Dave Wartenweiler, DPW – City of Evansville

The City of Evansville, which has a current population of approximately 5,000, set a goal to achieve a city-wide 25% energy reduction by 2025. At the time, the City operated two aerated wastewater treatment lagoons which historically used 25% of the city’s energy usage. The upgrades to the treatment facility were to incorporate sustainable and energy saving concepts throughout the design. The goal was to achieve a “net zero” energy usage at the treatment facility. This included controlling motor operations with on-line monitoring equipment and following LEED (Leadership in Energy and Environment Design) criteria for the building designs.

The overall goal of the project was to increase the design capacity of the facility and to improve treatment to meet a total nitrogen limitation of 10 mg/l to meet state groundwater standards. The project also included construction of a new Wind Turbine Generator (WTG) and construction of rain gardens throughout the facility to capture and use stormwater.

The facility design replaced the two aerated lagoon treatment systems with a new high-rate mechanical treatment system called a vertical loop reactor (VLR). A key component of the facility design was to continue the discharge of treated wastewater to four infiltration basins having an area of approximately 6.4 acres. Returning treated wastewater to groundwater is a truly sustainable issue since the City’s water supply is obtained from groundwater wells. Another important reason to continue infiltration of wastewater to the ground is to avoid phosphorus limitations which will become extremely difficult and costly to meet when discharging to surface water bodies.

The design also re-used the existing primary aerated lagoon basin as a sludge drying bed. The remaining aerated lagoon basin will be used as an excess flow storage lagoon. Aerobic sludge digesters, screening, and grit removal are new treatment processes housed in a new headworks building.

<table>
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<tr>
<th>Design Flow Parameter</th>
<th>Present 2028</th>
<th>Present 2028</th>
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<tr>
<td>Average Annual Flow, MGD</td>
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<td>0.742</td>
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<td>Peak Month Flow, MGD</td>
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<table>
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<th>Design Loads Parameter</th>
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<tbody>
<tr>
<td>Average BOD5, lb/day</td>
<td>783</td>
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<tr>
<td>Peak Month BOD5, lb/day</td>
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<tr>
<td>Average TSS, lb/day</td>
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<tr>
<td>Average TKN, lb/day</td>
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<tr>
<td>Peak Month TKN, lb/day</td>
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</tbody>
</table>

Note: MGD=Million Gallons per Day
BOD5=Biochemical Oxygen Demand (5 Day)
TSS=Total Suspended Solids
TKN=Total Kjeldahl Nitrogen

Rain gardens were placed throughout the treatment facility to capture and use stormwater.

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The Vertical Loop Reactor (VLR) is a suspended growth activated sludge process designed for energy efficiency and Biological Nutrient Removal (BNR). The VLR system consists of three basins, each 22 feet in depth, where the wastewater travels in a vertical plane instead of a horizontal plane of an oxidation ditch.

The first VLR basin is operated as an anoxic basin where wastewater from the third VLR basin is recycled using a wall pump. Return activated sludge is also returned to the first VLR basin. The Oxidation Reduction Potential (ORP) in this basin controls the aeration equipment for this basin. An on-line ORP probe is mounted in the first and second VLR basins. Set points for ORP are operator adjustable providing the operator flexibility to respond to changing conditions.

The second VLR basin is operated as a transition basin maintaining a near zero ORP and a D. O. concentration of 0.5 mg/l. The third VLR basin is operated to maintain a 1.5 - 2.0 mg/l D. O. or full aerobic condition. Up to four times the forward flow rate may be recycled from the third VLR basin to the first VLR basin to promote de-nitrification and provide oxygen from de-nitrified MLSS. Dissolved oxygen probes are mounted in the second and third basins and are used to control the aeration equipment in these two basins. Projected power costs at start-up for the VLR have been estimated to be $22,000/year which is 33% less than the aerated lagoon power costs.

A geo-thermal heat pump HVAC system was installed for the existing 2600 SF lab/service building. This replaced an existing gas boiler heating system. The new 6400 SF multi-level headworks building was designed using LEED certification criteria, which included a gas heating unit with a heat recovery system. Both buildings will be operated using minimum energy requirements.

The City completed a wind energy assessment at the treatment facility site in March 2009, which confirmed that the site provides a very good opportunity for installation of a wind energy system. The prevailing winds at the site are from the WNW and SSW. The measured average wind speed at hub heights between 120 feet and 140 feet above grade ranged from 12.1 mph to 12.5 mph.

The selected WTG has a nameplate capacity of 100 kw, a monopole tower height of 120 feet, and a rotar diameter of 68.9 feet. Overall structure height is 154 feet. The unit is projected to produce between 132,000 kwh to 140,000 kwh per year of energy, which represents 28% to 30% of the estimated annual energy consumption at the wastewater treatment facility.

The energy generated by the WTG will be sold to WPPI Energy, since the demand for energy at the wastewater treatment facility is constant where energy generation from the WTG is variable dependent upon the wind. Based on the projected energy production, a $0.015 kwh rate, and the receipt of grants from both Focus on Energy and WPPI, it is expected that the project will be 100%
recovered in less than 21 years. This payback time will be reduced when power costs become greater than $0.015/kwh. The WTG will be a revenue generator following the initial payback period.

The selection of aerobic sludge digestion allowed the re-use of three positive displacement blowers which were used for the aerated lagoon treatment system. Each of the three blowers has the capacity to meet the required aeration demand of the digester. They also have V-belt drives which can be adjusted to meet the lower SCFM requirements at start-up conditions.

The selection of using sludge drying beds for thickening was dependent upon re-using the existing aerated lagoon No. 1. The area of the base of the lagoon is 38,400 sq ft which was large enough to meet sludge drying needs.

The existing land infiltration basins have been enhanced over the years by mixing top soil into the top 6 inches and planting a mixture of bromegrass, fescue and rye. This has allowed routine crop removal, which removes a small percentage of applied nitrogen loading.

The return of treated wastewater flows to the groundwater (the City’s water supply is from groundwater wells) is truly sustainable rather than discharging to a flowing surface water body. The volume of water infiltrated through the existing infiltration basins averages approximately 80 feet per year. Groundwater monitoring wells will continue to be sampled and tested for a number of parameters as required by the WI Department of Natural Resources.

The City of Evansville embraced the various sustainable design elements for the treatment facility upgrade. They believe in the long term benefits. The project was completed under the projected budget of $6.9 million. The City was awarded ARRA funding for $3.45 million with the remaining $3.45 million funded through the Wisconsin Clean Water fund loan program.
Bureau of Watershed Management’s Gail Mills passes away

Gail Mills, database file manager in the Permits Section of the WDNR Bureau of Watershed Management, lost her long battle with metastatic lung cancer on Sunday, May 15. Although diagnosed with cancer in 2008, Mills scheduled her medical treatments around her work schedule so SWAMP could continue while she was on medical leave. She performed all the duties necessary for programmers to remain on schedule for updates or maintenance of the system.

Mills received the prestigious Virginia Hart Award in 2010. In nominating Mills for the award, her supervisor Susan Sylvester, chief of the Permits Section, referred to her special commitment to her job. “The department’s wastewater program is supported by the large, complex SWAMP (System for Wastewater Applications Monitoring and Permits) database, which maintains all the permits and monthly compliance monitoring data, as well as inspection reports and other documents. The work associated with SWAMP wouldn’t have been possible and as successful were it not for Gail’s hard work, coordinating talents, conflict resolution skills, and keen insight in resolving issues associated with the database.”

Members of the wastewater treatment community also provided letters of support for Gail’s Virginia Hart nomination. Ronald Dickrell, wastewater utility superintendent for the City of Marshfield wrote of Mills: “My first work experience with Ms. Mills was in early 2006 as she was assisting and preparing us for our first electronic submittal of our 2005 Compliance Maintenance Annual Report. She made what could have been a stressful situation quite manageable. In subsequent years, she was also extremely responsive when any assistance was needed.” We will all miss Gail. Condolences can be sent to Gail’s sister Carol Mills at 936 N. Lakeview, Endeavor, WI 53930.
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President Bartel called the meeting to order at 12:05 p.m. Roll call was taken. All Officers and Directors were present. Approximately 275 members were present. President Bartel asked Jim Miller Secretary and Howard Jacobson President of Minnesota Wastewater Operators Association to stand up and be recognized. President Bartel asked for a moment of silence for all the members who have passed away in the past year. Minutes of the October 8, 2009 meeting were presented for approval. A motion was made by Randy Herwig, seconded by John Leonhard to dispense with the reading of the minutes and to approve the minutes as written and published. Motion carried.

Executive Secretary R. McKee distributed copies of the Financial Report. McKee reminded the membership that this is an unaudited statement and is as of December 31, 2009. McKee reported the revenues for this fiscal year ending December 31, 2009 is $152,269.02. Expenditures totaled $191,190.88, with excess expenditure over revenue of $38,921.86. McKee explained that the deficit is largely due to the web site upgrade and is a one time expense. A motion was made by Paul Borgo to approve the Financial Statement as presented. Dean Falkner seconded the motion. Motion carried.

**NOMINATIONS- ELECTION OF VICE PRESIDENT AND DIRECTORS.**
Nomination Chairperson, John Bond placed into nomination the name of Wade Peterson for Vice President. President Bartel called three times for nominations from the floor. There being none John Leonhard made a motion the nomination be closed and a unanimous ballot be cast electing Wade Peterson to the office of Vice President. Dean Falkner seconded the motion. Motion carried. Wade Peterson was elected Vice President. President Bartel informed the membership that there are 2 two year directorship open. Nomination Chairperson, John Bond placed into nomination the names of Kevin Freber and Lyle Lutz for directors. President Bartel called three times for nominations from the floor. There being none John Leonhard made a motion the nomination be closed and a unanimous ballot be cast electing Kevin Freber and Lyle Lutz to the directorship. Lamont Albers seconded the motion. Motion carried.

**COMMITTEE REPORTS**
Technical Committee- Randy Thater Technical Committee chair thanked all the members of the Technical Committee with a special thanks to Kelly Zimmer for handling the Local Arrangements, Golf Outing, and Spouses program. Operators Competition- Chair Person Kevin Freber reported that there were three teams this year. Events are the same as last year. The events are Maintenance, Collection System, Safety, Laboratory, and Process Control Events. He thanked all the participants. Kevin Freber introduced the teams. “The Deuce is Loose” (Southern) Brian Skaife, Marc Zimmerman, Jeff Wellnitz: “Certifiable Operators” (North Central), Chris Helgstad, Jason Schill, Vern Williams: “Water Warriors” (Lake Michigan), John Guadagni, Holly Blazer, Kim Williams. “The Deuce is Loose” is first place and the “Certifiable Operators” and “Water Warriors” were tied for second place. Kevin Freber thanked all the team for a great event. Clarifier- Jon Butt requested that the membership submit articles for the **Continued on page 12**
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Brain Teasers  June 2011

Subject: Aerobic Digestion

Introductory: An aerobic digester has begun to develop a substantial foaming problem. It has been determined that organic overloading is the source of the foaming. Besides reducing the feed rate to the digester, what may an operator do to reduce the problem?

a. Stop aeration for at least three days
b. Decant supernatant and recycle solids
c. Stop decanting supernatant
d. Add ferric chloride to lower pH

Advanced: What is the solids loading design criteria in pounds of volatile solids per cubic foot of aerobic digester operating at 20° C.?

a. 2 - 8 pounds per cu. ft.
b. 0.5 – 1.0 pounds per cu. ft
c. 0.1 – 0.3 pounds per cu. ft.
d. 0.01 – 0.05 pounds per cu. ft.

Answers on page 26
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**WWOA Award Nomination Form**

*Editor’s note: The WWOA award nomination form has been repeated from the April issue to encourage everyone to nominate someone. Information on the requirements for the various awards can be found on page 15 of the April 2011 issue.***

Deadline: August 1, 2011, except Regional Operator July 1, 2011
Check Award Nomination: Bernauer ____ Crabtree ____ Newcomer of the Year ____ Service ____

Regional Operator ____ Regional affiliation) ______

Nominee’s Name __________________________ Address: ________________________________________________

City: __________________________ State: _____ Zip: ___________________

Home Phone: __________________________ Work Phone: ___________________________________________

Employer: __________________________ Occupation/Job Title: __________________________________________

Date Joined WWOA: ____________ WWOA Membership Number: ____________

Regional Affiliation: _________________ Regional Officer Positions ? ______________

Brief Description of Nominee Activities and Achievements: (attach sheets if needed)

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

Why Do You Feel Nominee is Deserving of Award Being Nominated For?

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

_______________________________________________________________________________________________

Submitter Name: _________________________________

______________________________________________

Address: _______________________________________

City: ___________________________________________

State: ________ Zip: ______________________

*continued on page 15*
continued from page 14

Please mail or email nomination forms for Bernauer, Service, Crabtree, and Newcomer of the Year to:

Randy Thater – President Elect Waukesha WWTP
600 Sentry Dr., Waukesha WI 53186
Work 262-524-3631, Fax 262-524-3632
rthater@ci.waukesha.wi.us

Please mail or email nomination forms for Regional Operator to the appropriate regional committee members. Regional Operator awards contacts are the regional chairs unless otherwise noted:

Lake Michigan Vice-Chair,
Jeff Smudde, Vice Chairperson
Green Bay Met SD
2231 N. Quincy St., Green Bay, WI 54302
920-438-1003  jsmudde@gbmsd.org

North Central Chair, Terry Vanden Heuvel, Chairperson
Merrill WWTP
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715-536-5263  Terry.vandenheuvel@ci.merrill.wi.us

Northwest Chair, Sari Marks, Chairperson
Hayward WWTP,
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715-634-4612  Pw1@centurytel.net

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WDNR – South Central Region
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608-275-3312  Bernie.robertson@wisconsin.gov

Southeast Chair, David Bogie, Chairperson
Envirotech Equipment Co.
923 Sanctuary Court, Pewaukee, WI 53072
262-264-0231  dave.bogie@envirotechequipment.net

West Central Chair, Tom Grunewald, Chairperson
PO Box 8, Boyd, WI 54726
715-667-3282  village023@centurytel.net

The regional awards committees are to forward the selected nominee to Randy Thater by August 1, 2011 for approval by the board.
The 4th Annual “Northwoods” Collection System Seminar

Thursday July 28, 2011 at the Eagles Club, 1104 South Oak Ave. Marshfield

MORNING SESSION: Speakers on Collection System Issues

AFTERNOON SESSION: Vendor and Equipment Displays, Door Prizes, Product Demonstrations

TENTATIVE TOPICS: Storm Sewer Dye Flooding Case Study • Private Property: Foundation Drains, Sump Pumps, etc
Spill Response: Septic Disposal in Collection Systems • Safety: Work Zone Safety
Mainline, Lateral, and Manhole Rehabilitation Costs • Low Pressure Sewer Systems-Pros & Cons
Quick Hits: Air Release Valve O&M, Sewer Jet Nozzle Technology,
Sewer Rehabilitation Cost Survey

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IN CONTROL  Successful Operations through Process Control

June 2011  By Jack Saltes, Wastewater Operations Engineer, Department of Natural Resources

Does your plant have too many “yuckies” or “goodies” as I heard one recent speaker describe them? You know what they are….foam, scum, grease, stringy algae, floating solids, screenings, sludge, floc………all in places you don’t want them. You know……the “yucky stuff” that can give a treatment plant a bad reputation. The stuff that seems to need endless cleaning. While operators are fortunate to have many firms offering cleaning services and available cleaning equipment /products, the best cleaning advice of all is “a pound of prevention is worth a pound of cleaning, err, cure. So how does one prevent or minimize all that yucky stuff and all that cleaning you do or don’t do. The ultimate solutions to reduce cleaning are to (1) control what’s coming into your plant through your Sewer Use Ordinance, (2) install technologically current headworks equipment and (3) practice good process control, creating the right environmental conditions in your plant for the right bugs to grow and (4) inform and educate the public about wastewater.

(1) Your Sewer Use Ordinance is the most important tool for controlling what is discharged into your sewers and comes down to your plant. Industries should follow it. Talk to them. Enforce it if necessary. If you are tired of all that grease coming into your plant and clogging pipes, equipment, channels, tanks, and all that cleaning, you need a Grease Control and Inspection Program.

(2) If rags and screenings are showing up in downstream processes where you have to remove them from pipes, diffusers, it might be time for more effective headworks screening and grit removal equipment to remove them before they enter the plant. Headworks may be in need of upgrading with finer screening and grit removal equipment. Many older plants are removing grinders in favor of rotary fine screens or other fine screening equipment. Talk to your consultant about this if you are still grinding influent materials and sending them downstream through the plant.

(3) One of the most important things you can do to keep your plant “clean” is to provide the right environmental conditions for healthy biological growth. If you have good process control at your treatment plant, foam, scum, pin floc, etc. will be minimal, if not eliminated. All that foam is almost always the result of the improper environmental conditions (old sludge, low F:M, too much surface grease) in your plant that favor foam producing filamentous organisms, such as Nocardia and Microthrix. Old activated sludge creates a lot of pin floc floating solids and surface scum.

(4) Exemplary wastewater management in a community has a good information and education (I&E) program for their sewer users, especially residential, commercial and institutional users. Let residents know what they shouldn’t be putting down the toilet or sink drain, such as personal hygiene products, the so-called disposable wipes, fat, oil and grease, plastics, etc. Send out periodic mailers or bill stuffers. Have a WWTP website for posting information. Meet with health care facilities and public schools in your communities about their kitchens and disposal practices and talk about what they discharge.

Lastly, good general plant housekeeping and cleaning of all the buildings at your plant (floors, carpet runners, countertops, bathrooms, sinks, etc) are an important first impression of your plant. Often when I visit a plant, if the laboratory and offices are organized and clean, I know that the rest of the plant will be too.

Following these steps will result in a treatment plant that is a clean, mean, lean, bug machine. Enjoy your summer. Play more; clean less.
Smart Phone for Wastewater Applications? You bet!

By Jim Bergles, Eagle Lake Sewer Utility

After a lightning strike late in 2010 forced us into an early upgrade to our PCs, alarm dialer, and other devices, I thought what would be the best addition to shoot for during the upgrade? An idea I have had for a while is a smart phone that can connect to the SCADA PC to control the plant with.

After talking with several different companies to submit bids for the lightning repairs, none had ever seen or heard of this application being done. Well I wanted to see it done so the planning began. Our repair contract went to Starnet located in Franksville, WI. I explained what I wanted to do. Jim Redford (Installing Tech) and I would complete the rest. Once our system had been made internet accessible through several layers of security, I ordered my phone.

Our town contract is through Verizon. After explaining what I needed the phone to do, the sales rep suggested the Droid Global 2 with an Android operating system. Almost every phone maker now has smart phones or soon will. Some use the Android system, some don’t. This is the future and it has two handles on it, so grab on. I am not endorsing any of the phone companies in this article. This is just an informative article to let you know the technology is here to make life so much easier when on call.

The very cool thing about smart phones is the applications that you are able to download. Any company who is anybody will soon have their own app which gives the consumer a direct link to their product. Apps can be free and they can cost money. Every App I needed to make my connection from Smart Phone to SCADA was free. Otherwise they run from a dollar up to 10 dollars.

Now seeing I had a physical firewall device installed in the upgrade, I needed the software installed in my phone to talk to it. After the free download from Sonicwall, I called their tech support. This is when I learned my first new term in smart phones “Rooting”. Rooting a smart phone changes the main operating program so you can use programs for rooted phones. Rooting is like taking the governor off your go-kart motor so you can go faster. But if you blow the motor up it’s your fault.

Once you root a phone, the warranty is off. It can still be repaired for a price through Verizon. My droid phone needed to be rooted before I could run the software from Sonicwall. The best one button root app I found for free is called 24root. It comes from a third part web site that you download to your droid phone that has the 2.2 operating system. If you try and input the new basic root lines in the phones program and do it wrong, the phone is now called a “brick” because it won’t do anything and dies. Just glue it to the wall and pretend it’s a brick. Or send it back to its maker and pay to have it reprogrammed. A free app to download is called “Rooting and Me” This will explain what rooting is, what it does, and what programs are out there to use.

Sonicwall just developed their app in February for the droid so it’s in the beta stages and only runs on rooted phones. As more people use their product I am sure they will rewrite their app so you won’t have to root your phone. If you use the program Team Viewer, it can run on the droid 2 phone and no rooting is required.

Ok, the phone is now rooted, and the app downloaded to talk to Sonicwall is installed. It is called Net extender. Sonicwall set up my protocols in the firewall and helped me with the phone and port settings.

Next step to access the firewall over the net, connect button now pushed. About 30 seconds later my phone was connect to the PC through tunneling in. Another neat term I learned. I minimized the Netextender program and now opened my VPN program(virtual private network). There are multiple vpn programs that a good IT tech could help you with. In the initial connection you set up your user name and password. When that was done it was about another 30 seconds and my desk top showed up on my smart phone from my SCADA PC!

Now the screen was small. But with the spread of my fingers on the screen it zoomed in to normal size but only a 2.5” by 4” section of the desktop. As you slide the mouse continued on page 20
continued from page 19

arrow around you can view the whole screen. But I now
have full function of my SCADA without having to lug a
lap top everywhere. Oh yea, you can now dump the air
card you need for the lap top. With wireless in the laptop,
your smart phone can double as a hotspot for internet also.
Now the bad news first. It is a small screen and I have
a lag time of about 5 to sometimes 10 seconds between
operations. Operate it in steps so you don’t go to far ahead
of the lag time. This is working on the 3G network. Once
4G is available I feel the lag will be very minimal. It did
disconnect on me a few times but I was able to press the
connect button and it linked right back up.

The other plant that uses the team viewer program sees
very little lag time at all. Could be my program or set
up? If you have big fingers the keyboard will be a little
challenging. But I am getting use to it. And with the
majority of smart phones they are power hogs. Keep a
charger handy in the car, home, and a USB charging cord
where applicable.

The Good News. No more laptops, Ipads, or tablets will be
needed for the on call person. We all have to carry a phone
so that’s not changed. You can access SCADA anywhere you
have a 3G or WIFI connection. In a movie theater, school
function, riding on a bus to Summerfest, stuck in a traffic
jam in Chicago, or sitting in a tree stand opening morning.
If you’re on call, you shouldn’t be that far away anyway.

continued on page 21
continued from page 20

But when the backup operator calls for help, you can access the PC and look at the alarms and adjust what needs to be done to help out until you or secondary help arrives. Or you can disable the alarm because it’s a nuisance alarm that can wait until the next morning. You’re saving gas money already.

The APPs you can download to these phones are still keeping me up late. I found a free vibration meter that I can now do vibration analysis on my motors.

This is a free and very useful tool for predictive maintenance. The paid version you can set high points where an alarm will sound when it is reached. It can also be used as an earthquake alarm in the paid version.

The next best app I have found is a tricorder just like Spock had on Star trek. It can scan and tell you the strength of any wireless network in the area and if it’s encrypted. It also has a decibel meter for doing sound analysis, and an EMF meter.

And last if you drop a small screw in the grass the phone doubles as a metal detector. Yes, really. If your bosses are questioning your hours there is a timecard app that you fill out and can email it to them every day if need be.

The last app I found useful is the hiking app. For manholes located in woods or in the middle of a field or buried, you
I feel these newer smart phones are the tech tool of the future. It’s not just email and texting anymore. If you have not converted over yet, expect about a two week learning curve. In your spare time open the help section and spend a couple minutes a day learning your phone.

I could drone on about the different apps and advantages these phones have but space is limited here. The advantage of being able to monitor the plant from about anywhere, justify its cost.

If you have a question, drop me an email. I will do my best to help out or let you know how the Droids are performing with the two different communication programs mentioned earlier.

Thank you
Jim Bergles
eaglelake@tds.net

Decibel meter app

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can tag a picture of the spot, plot it on the map, or even save the geo coordinates. The next person to take over will always have that information to access.
WWOA Financials

Cash Basis Ending April 10, 2011

Editor’s note: The Board of Directors for WWOA has provided the readers of the Clarifier a copy of the following financial statement as of April 10, 2011. Any WWOA member that has a question about this statement should contact any board member listed on the inside front cover or the Executive Director Richard McKee.

Statement of Expenditure

<table>
<thead>
<tr>
<th>Account Number</th>
<th>Description</th>
<th>EXPENDITURES</th>
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Excess Revenue (Excess Expenditures) $12,044.86

continued on page 24
Wisconsin Wastewater Operators Association Financials

Cash Basis Ending April 10, 2011

Statement of Revenue

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Balance Sheet

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<td>(Excess Escrow Revenue (Excess Escrow Expenditures))</td>
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<td>Cash on Hand, January 1, 2011</td>
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<td>(Excess Revenue (Excess Expenditures))</td>
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<td>$1,634.96</td>
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<td>Escrow Revenue (Excess Escrow Expenditures))</td>
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<td>LIABILITIES AND FUND BALANCE</td>
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<td>FUND BALANCE:</td>
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<td>Reserved (Escrow Accounts)</td>
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<table>
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<td>Total Reserved Funds</td>
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<td>$20,511.47</td>
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</tbody>
</table>

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info@mulcahyshaw.com

Brain Teaser Answers

An aerobic digester has begun to develop a substantial foaming problem. It has been determined that organic overloading is the source of the foaming. Besides reducing the feed rate to the digester, what may an operator do to reduce the problem?

Answer: b, Decant supernatant and recycle solids

What is the solids loading design criteria in pounds of volatile solids per cubic foot of aerobic digester operating at 20° C.?

Answer: c, c. 0.1 – 0.3 pounds per cu. ft.

Source: Operation of Wastewater Treatment Plants; MOP 11, Volume 3

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WWOA Scholarship and Tuition Reimbursement Available

The WWOA has three $1,000.00 scholarships available this year. Two $1,000.00 scholarships will be funded by the WWOA and the remaining $1,000.00 will be funded by Crane Engineering.

The information for applying for and submittal of these scholarships are available on the WWOA web-site. All you need to do is go to WWOA.org and open the membership tab located at the WWOA home page. Then open the scholarship tab and all the information you need to make your submittal should be there for your convenience.

Tuition Reimbursement should be completed the same as stated above, except there are 6 available and are funded at $150.00 each.

Please see the testimonial at right from a previous WWOA scholarship winner.

Respectfully Submitted by Dennis Egge

The summer after I received the W.W.O.A scholarship, I had the opportunity to interview for an outstanding internship. During the interview, the manager asked me if I had heard of W.W.O.A. I said, “Not only have I heard of it, but I recently won their scholarship”. Judging by the look on his face, I could tell he was impressed because not only had I already involved myself with a well respected professional organization; but I had been recognized by it! I knew right then he was going to offer me the position. For me and most of my friends in school, our resumes were only a page long and the highlight included a part-time job during high school. But to come into that interview, and to have that scholarship on my resume, went a long way. That internship, and the immense amount of knowledge I gained from it, was discussed at every interview I have had since. Currently, I am employed full-time in the exact position I went to college for …and couldn’t be happier.
1. President D. Carlson called the meeting to order at 9:55 a.m. Thursday December 2, 2010. Roll Call was taken. All Board members were present.
2. D. Doerr made a motion to approve the agenda as amended. D. Egge seconded the motion. Motion carried.
3. Minutes of October 19th and 20th 2010 were reviewed. After review and minor changes K. Zimmer made a motion to approve the minutes of October 19th and 20th, 2010 as corrected. K. Freber seconded the motion. Motion carried.
4. McKee presented the Financial Statement and vouchers for Board review and approval. McKee reported that as of November 15, 2010, WWOA had $152,857.15 in revenue with $157,640.46 in expenditures with excess expenditures over revenues of $4,783.31. McKee reviewed the vouchers. After review and explanation D. Egge made a motion to approve the Financial Statement and vouchers as presented. R. Thater seconded the motion. Motion carried.
5. COMMITTEE REPORTS
   a. Nominations- B. Bartel reported there will be three (3) two (2) year Directorship positions open in 2011. The committee is also soliciting nominations for the position of Vice-President for 2011.
b. Promotional Items- K. Zimmer reported that all inventory has been turned over to L. Lutz who is the new chair of the committee. K. Zimmer provided the Board with an updated Promotional Committee Job Description for the Policy Book.
c. Membership- McKee reported that we have 1986 Active, Lifetime, and Honorary members after the members in the arrears are removed. WWOA has 330 Lifetime members as of the end or 2010. WWOA will have 25 new lifetime members in 2011.
d. Scholarship- McKee reported that all three scholarships for this year have been paid out.
e. Executive Committee- No report.
f. Clarifier- No report.
g. Career Development- No report.
h. Awards- D. Carlson provided the Board with a list of this year’s award winners. R. Thater chair provided the

continued on page 29
Board with updated list of award winners so far this year.
i. Operator Training- No Report
j. Directory- McKee stated that he is in the process of updating the Directory. The directory will print in April.
k. Publicity- K. Zimmer provided the Board with an updated Publicity Committee Job Description for the Policy Book. K. Zimmer reported the Committee has been very busy submitting press release information to local community newspapers for the Board of Director members and WWOA award winners.
l. Regional Coordinator- K. Zimmer provides the Board with a regional meeting schedule for 2011.
m. Government Affairs- No report. The 2011 Government Affairs seminar will be held on February 24, 2011.
n. Biosolid Symposium- D. Egge reported the 2011 Biosolids Symposium will be held at the Stevens Point Holiday Inn on March 22, 2011.
o. Liaison- The annual business meeting for the Wisconsin Section of Central States was held on November 10, 2010 at Cabela's Richfield WI. The 2012 Annual CSWEA Meeting will be held on May 13-17, 2012, at Pheasant Run.
p. Web-Site- B. Bartel reported that this year all registration was done on line. B. Bartel reported unfortunately the technology did let us down at the conference with some connection problems. A discussion ensued regarding the registration procedure. It is too lengthy and needs to be streamlined. McKee is going to get his suggestions to Webfiters on ways to speed up registration.
q. Technical Program- R. Thater provided the Board with an updated Technical Program Committee Job Description for the policy book.
r. Exhibit Committee & M &C- C. Strackbein provide the Board with a report. C. Strackbein reported that the Sponsor fee will be $75.00 for exhibitors and $100.00 for non-exhibitors. The Sponsor will pay for 1/2 of the Breaks, 1/2 of the busing cost, 1/2 of the Walk around lunch in the exhibit hall, 1 hour extension of the Meet & Greet to include beer, wine and soda and the social hour prior to the banquet. There is room for 121 booths next year.
s. Operators Competition- No report.
t. Local Arrangements- Holman is the host plant for 2011.
u. Spouse Program- No Report
w. Golf Outing- No Report
x. Sporting Clays- No Report
y. Permanent Arrangement- J. Leonhard provided a report for the Board’s review. Leonhard reported that

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the committee visited La Crosse Radisson and La Crosse Conference Center on November 5th to review the catering cost and talk with the staff at the Radisson and La Crosse Center in preparation for the Oct. 2011 Conference. Leonhard provided the Board with a list of the past and future contracts. We are booked out to 2015.

y. Resolution and Bylaws- No Report.
z. Historical- No Report
A motion was made by D. Egge, and seconded by W. Peterson to accept the Committee Report as presented. Motion Carried

6. OLD BUSINESS
a. 2011 Budget review and approval- The Board went over the 2011 budget. After review and changes a motion was made by D. Doerr, seconded by K. Zimmer to approve the 2011 budget as amended. Motion carried. Conference Fees- After discussion the Board set the conference fees as follows: Pre-Registration: Member-$70.00, Non-Member-$125.00, Non-Member with Membership Offer- $120.00,
Student/Retiree- $40.00, Substitution (Re-print charges)- $15.00
On-Site: Member- $120.00, Non-Member- $175.00,
Student/Retiree- $45.00, Substitution (Re-print charges)- $20.00. Booth fees- Before August 1, 2011- $350.00.
After August 1, 2011- $540.00. After discussion D. Doerr made a motion to accept the Registration fees. L. Lutz seconded the motion. Motion carried.
b. Clarifier Staffing- B. Bartel reported that Doralee from Energenecs will be taking over for Jean Van Sistine. Jean has agreed to stay on and help Doralee through the December issue and be available for consulting on the next few issues.
c. Policy Manual Update- The Board members provided some updates to their committee for the policy book.
d. Others

7. NEW BUSINESS
a. Secretary Compensation and 2 year contract- After discussion the Board offered McKee a two year contract. No further action.
b. Hotel Staff/Conference Center Tour- The Board took a tour of the Radisson and the La Crosse Center in preparation for the 2011 conference.

8. Adjournment- There being no further Business K. Freber made a motion to adjourn, L. Lutz seconded the motion. Motion carried. Meeting adjourned at 12:00 p.m. December 3rd 2010. 

Respectfully Submitted
Richard McKee
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