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.
WWOA Board makes tough decisions, looks for suggestions

Well, it’s Tuesday January 3, 2012 – first time I’ve gotten to type 2012 without looking ahead! I’m decompressing from the holidays and just trying to get back into the normal routine at work. Eating lunch (day-old left over buck burger from Mickey D’s - yum) and I realize I have a deadline for my second presidential message into the Clarifier staff by the end of the week.

So I’m doing this (starting off anyway) as a working lunch wondering what to talk about. This seems to be a tough stretch to find something to write about. There is a lot going on and the board members are working diligently, but most of their work is in progress and a lot still needs to be finalized.

We had our first board meeting with our 2011-2012 officer line-up in early December. The budget got passed. Even with the membership fee increase, tough decisions had to be made to get a balanced budget. (Does this give me a fresh perspective, and give me new respect for the task our common council goes through each year? Of course not – I’ll still carp about it!)

One thing we did was raise the advertising rates for the Clarifier. It’s not something we like doing. Our commercial partners do a lot for this organization. They provide a large share of the technical talks at the state conference and the regional meetings. They pay fees for the exhibits at both of these events. And there is a sponsor fee for any commercial firm with at least one attendee at state, even if they are not exhibiting. But the cost of producing the Clarifier was higher than what we are collecting in ad revenue. Rates had not been raised since 2006. So it was time.

Another item for action involves the operator’s competition. This event has been a fixture of the conference since before I got involved in WWOA. Those that have been participants in the past always speak positively of the experience. But it has been a challenge getting enough teams to participate the last few years. A minimum of three teams are required to hold the event. Unfortunately, this last year we had to cancel the competition due to lack of firm commitments from enough teams. Options to solve this problem were discussed at the regional officers meeting last October. Several good ideas were brought up, including the possibility of morphing the event from a competition to a hands-on training workshop. However, we have decided to give it one more college try to hold a competitive event. But we need those commitments before we finalize the conference program. So if you are interested in participating, be sure to contact your regional officers – the sooner the better.

Speaking of the regions, the winter round of regional meetings should be in full swing as you read this. I see listing for meetings in Wisconsin Dells, Brookfield, West Salem, Kewaunee, and Plover on the WWOA Events calendar. Northwest of course waits until the snow cover gets down to around 3 feet in April or May to hold their first meeting, so that is the complete list. I hope to make two of these meetings towards my goal of visiting all the regions this year. Given the chance of weather, I’ll likely hit the Southeastern meeting since it’s hosted by the next plant upriver from ours. I haven’t decided on my other one yet. When you see me this year, feel free to stop and say hi. Let me know what you think of WWOA and if there is anything we can do to better serve our members.

I’m looking at the flyers for the Government Affairs Seminar and Spring Biosolids Symposium. As usual Kevin Freber, et.al. (GAS) and Lyle Lutz, et.al. (SBS) have done a bang-up job putting together interesting and informative programs. Government Affairs has Phosphorus Removal, Adaptive Management, and Stormwater issues among the scheduled topics. Spring Biosolids lists Nutrient Management, Renewable Energy, and Septage topics as just part of the bill of fare. As you read this the GAS pre-registration deadline is likely passed, but you can still attend at the slightly higher on-site price. You should have plenty of time to process your SBS registration, no matter how circuitous your purchasing bureaucracy.

The annual conference is months away, but that doesn’t mean there is nothing going on with that. Kevin Freber has the keynote and entertainment wrapped up, and about the time you see this he will be chairing a group of about continued on page 4
Continuing education of wastewater professionals is the WWOA core mission and the subjects of the prior several paragraphs - regional meetings, state conference, and co-sponsored annual seminars are the meat of our offerings. We are always on the lookout for the occasional sweet treat, extra special training events that we can offer to our members. Last year, with North Central region’s steering committee spearheading the effort, we were able to offer two sessions on Microscopic Evaluation of wastewater, put on by the incomparable Toni Glymph. One session was hosted by NCL in Birnamwood, and the other was held in Watertown. This year NC region is looking to repeat the class at NCL as a regional event. We are considering offering a second site again as a WWOA event. Confirmation and details will follow. These are the kinds of ideas we are always on the watch for, but it’s easily said that we should offer more events, not always so easy to come up with ideas, and perhaps more importantly to find the right people to teach the classes. So if you have a good idea for a special events topic, and especially if you have a good lead on a trainer, please get the word to our operator training co-chairs Lyle Lutz and Jim Bergles, or any other officer for that matter.

I started off by talking about the budget process. One item that came up again, as it always seems to, is the WWOA Directory. That is that umpty-some page, spiral bound book we put out every other year that everyone either loves to hate, or hates to love. It is one of the treasured assets and valuable tools provided to our membership as part of their fee (or so I’m told). But it also is quickly out of date and it is not cheap. At about $10 a pop, that is one-fifth of the membership fee. We seem to be endlessly debating whether to keep providing it, or switch to an alternative such as electronic only – and if so how to do so in a manner that makes it easily accessible to our members, while protecting them from unwanted uses, such as it providing an easily pirated mass marketing list. No decisions yet, and we would love to hear input from our members.

Another hot topic with the board has been the WWOA website. As you may have heard by now, Scott Thompson has decided to give up his position as webmaster. Scott was a driving force behind the establishment of the web site, and has served as webmaster from the beginning. Scott isn’t going anywhere – he is still an operator at Green Bay MSD and he has promised to stay active with the organization and a volunteer with the web site committee. Many thanks to Scott for all the work he has put in over the years.

One initiative we continue to work on is expanding the ability to register on-line. We have offered pre-registration for the annual conference on the web site the last two years. As with any new initiative, there are always a few bumps along the way. But we have worked diligently with our web services provider and we believe we are over the hump with this. Now we want to charge ahead and expand our offerings for on-line service. Next up is to allow membership renewal on the web site. Not sure if it will be ready for use with this year’s renewal cycle. All current memberships expire on September 1 of the expiration year. It is a two-year membership, so roughly half come due each year. Down the road we would like to expand the service to offer registration for other state and regional events. You can already register on-line for some events such as the Government Affairs Seminar. That event has registration services provided by a third party but it comes at a price, and would not be feasible for use with regional meeting registration.

We also want to ‘freshen up’ the web site, perhaps provide some new content or reconfigure the existing content to make it more user-friendly. And with a new webmaster, new web committee chair, and reconfigured web committee we expect to get some fresh ideas. But as always, we would love to hear from you if you have anything to say on this issue. Feel free to contact Jeff Bratz.

Again, I’ve found nothing to say and spent over 1,500 words saying it. I don’t even want to admit to how much time I spent on this. Until April, may you not be standing knee-deep in over-flowing septage!

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Spring Valley, Wisconsin, Upgrades to Sequencing Batch Reactors

By: Tim Stockman, Foth Infrastructure & Environment

The Village of Spring Valley wastewater treatment facility was originally placed into service in 1949 and consisted of a trickling filter, anaerobic digester, and sludge drying beds. Treated effluent was discharged to the Eau Galle River. In 1984, a rotating biological contactor was constructed to replace the trickling filter. A final clarifier was also constructed at that time, as well as an addition to the existing control building to house pumps and a UV disinfection system.

The need for modifications to the existing facilities was based on the WWTF exceeding its design capacity. This is due in part to increasing residential, commercial, and industrial loads and in part to a re-rating of the WWTF design capacity performed in 2005. The results of the re-rating study state that the WWTF will reach its design capacity by the year 2015. In addition, more stringent effluent limits are anticipated in the near future and the WWTF is currently unable to meet the anticipated limits.

The existing control building was renovated and expanded as a part of this project. The above-grade portion of the entire structure was demolished and replaced. Existing foundations were used for the new building, and the building was expanded over the existing rectangular primary and final clarifiers. The below-grade UV room was retained. The existing Influent lift station structure was reused but all equipment and piping was removed.

The floor plan of the control building was modified. New laboratory, utility, and work rooms were constructed. A bathroom was added. Access to the UV room was changed to an exterior door. A garage was constructed over the rectangular clarifiers on the north side of the structure. The building was extended over the existing influent lift station to form a headworks room, which contain the grit handling equipment and vertical screen. An MCC room was added between the garage and the headworks room.

A sequencing batch reactor (SBR) was incorporated for biological treatment at the Spring Valley WWTF. The ITT/Sanitaire ICEAS SBR was pre-selected during design.

The ICEAS SBR system is a continuous flow SBR – ICEAS is an acronym for Intermittent Cycle Extended Aeration System. The Spring Valley WWTF ICEAS system consists of two aeration tanks and two “pre-react zone” tanks for wastewater treatment; an aerobic digester/sludge storage tank and two post-equalization (post-EQ) tanks are also included for sludge handling and flow control. Mixing and aeration in the aeration tanks is accomplished by fine bubble membrane diffusers, and mixing is supplemented.
by submersible mixers. The pre-react zone is used as a biological selector and receives aeration from the same train of diffusers as the aeration tanks. Wastewater enters the pre-react zones at the top of the tanks and flows through openings at the bottom of a common wall into the aeration tanks. Each aeration tank is equipped with a modulating decanter to remove supernatant from the system. To prevent a surge of flow during the decanting phase, a post-equalization tank is typically provided to allow a measured, constant discharge of treated effluent from the system. Submersible sludge pumps remove settled solids from the aeration tanks and pump them to the aerobic digester/sludge storage tank.

Each SBR train undergoes a cycle of three phases: “react”, “settle”, and “decant”. The “react” phase involves aeration and mixing of the pre-react and aeration tanks, the “settle” phase involves ceasing aeration and mixing and allowing solids to settle to the bottom of the tanks, and the “decant” phase involves removing the clarified supernatant layer with a decant mechanism. During each of these three phases, wastewater is continuously flowing into the pre-react zone, passing under a baffle wall, and entering the aeration tank of each process train. This is made possible by the tank design: the aeration tanks are of an elongated shape, and wastewater is admitted to the tanks at the bottom of one end whereas treated effluent is removed at the top of the other end. This lengthy flow path prevents short-circuiting of wastewater through the aeration tanks, as raw wastewater entering the tanks remains near the bottom at the influent end during the decant phase. Although both trains will receive flow continuously, the treatment cycles will alternate...
continued from page 7

between the two trains: as one is being aerated, the other is undergoing settling, decanting, and sludge withdrawal.

Raw wastewater from the influent wet well is pumped through the vortex grit removal system and into the SBR. Flow is split to the two process trains by a splitter box and weirs. Each process train includes a pre-react tank, an aeration tank, and a post-equalization tank. Clarified effluent is decanted from the aeration tanks into the respective post-equalization tank, whereas waste activated sludge is pumped to the aerobic digester/sludge storage tank. From the post-equalization tank, effluent flows by gravity to the UV disinfection system – the effluent flow rate is controlled by automatic valves in the bottom of each tank. Waste activated sludge is pumped to the aerobic digester/sludge storage tank, from which it is hauled away periodically to the West-Central Wisconsin Biosolids Facility (WCWBF) in Ellsworth, WI for dewatering. Air is provided to the aeration tanks, pre-react zone tanks, post-EQ tanks, and aerobic digester/sludge storage tank by positive displacement blowers.

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Helpful tips from Dean Falkner, Village of Mukwonago

The Clarifier staff welcomes any comments that any operator might have. Dean Falkner from the Village of Mukwonago submitted the following ideas. Maybe these tips might work for you.

**Struvite Removal:** There are in many plants with anaerobic digesters that experience operation and maintenance problems created by struvite deposits in piping, valves, and the like. The problems we experienced were enough to have us consider relocating the secondary digester supernatant flow to avoid further problems with the digester building sewers. One of the guys suggested we use the sewer jetter to clean the pipes and affected equipment. This idea was tried and worked. I can’t say this will work for everyone, but it got our drain lines cleared.

**Hydro-excavating:** Given the soils in the Mukwonago area, the sewer jetter has found a home in water, wastewater, and public works. Examples include:

1. **Water:**
   a. Digging-up stop boxes is relatively simple and avoids costly restoration associated with digging stop boxes with a back-hoe. No dump/back-hoe needed.

2. **Wastewater:**
   a. Pot-holing, to identify underground structure location safely.
   b. Sewer cleaning
   c. Removing struvite (per above).
   d. Trenching: we used it to trench for a new electrical service.

3. **DPW:**
   a. Digging holes to plant trees.
   b. Digging holes for installing poles, etc.
   c. Cleaning out park grease traps.

We’ve actually included the jetter to our replacement fund. The utilities are contributing to the replacement fund, in a way to insure we can actually afford to replace the unit when conditions dictate. Between the time savings in projects, the reduced equipment requirements, lower restoration costs, etc… it really has proved to be a good value.

Dean

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Polymers for Thickening and Dewatering
Looking at the Entire System to Troubleshoot and Optimize

By Ron Altmann, Mark Polazzo, and Staff – Walworth County Metropolitan Sewerage District

Over the years, WE&amp;T magazine has published many excellent articles on polymer addition. Our polymer suppliers have also been a good source of information. After evaluating the collection of articles and notes, it was decided to look at the treatment and thickening variables that affect polymer performance. First, the variables will be identified and recorded (See figures 1 & 2). Then, as many of the variables as possible will be logged on paper or placed in our facility database. The variables can then be evaluated so staff can optimize polymer usage and troubleshoot problems.

Feed sludge
Whether thickening for later processing or dewatering after a stabilization process, the sludge characteristics and treatment operations affect the polymer dose (See figure 1). When troubleshooting or optimizing, start with simple variables such as sludge concentration, changes in sludge due to rain, industrial waste, chemical addition, changes in side stream flows, or process changes such as mean cell residency time and food to microorganism ratio. For stabilized sludges from a treatment process like anaerobic digestion, variables such as solids detention time, volatile solids, and sludge source all must be evaluated. There could be a lag time between a hauled waste and problems with dewatering due to solids detention time in the digester. Keep in mind that any treatment changes can affect sludge characteristics, which in turn could affect polymer dose. Also, if you wish to compare one polymer to another, the sludges must be the same for each polymer.

Polymer
Ask each polymer supplier to provide a certificate of analysis for their product. There may be some reluctance to provide this information; however, if you are persistent they will supply it. Take notice of the type of polymer so you can keep track of which polymers work best as your sludge changes. Is the polymer anionic or cationic? What is the type of molecular chain, e.g., linear or crosslinked? What is the molecular weight? For liquids; is it an emulsion or dispersion? When performing a trial run on a polymer, retain a sample for later comparison. Date and label it, then place in the lab refrigerator. For liquid polymers, take another sample in a clear container and keep it in the same area where the polymers are stored that will show if and when the polymer components separate. The liquid samples can also be used to check compatibility with a new polymer being tested. Simply place small dabs of each polymer in a bottle or dish and mix to see if they form globs or blend. Use disposable eye droppers or syringes to obtain samples from the container. Note that a dispersion polymer will react with the water in emulsion polymer. If the polymers are not compatible, chase the lines between

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Let’s work together to SHARE your CONCERNS, MEET your CHALLENGES, and ACCOMPLISH your GOALS.

**VOL. 194, FEBRUARY 2012    The Clarifier**

**Preserve the Past, Manage the Future.**

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Polymers with mineral oil. Do not chase with water as it will form a gummy mass in the lines. Incompatible polymers can make a gelatinous mess in your polymer make-up system.

This photo is an emulsion polymer mixed with 3 to 4 times the volume of water showing how polymers can become a gummy mass. A similar reaction occurs when dispersions and emulsions mix.

The photo shows a neat polymer that separated within weeks. This polymer also thickened in one year.

Dilution water
Polymer must be diluted to let the polymer molecules uncoil allowing activation of the charges. The dilution water can be final effluent, municipal water, or local well. Each type will have its own characteristics as to solids, temperature, and chemical make-up. Final effluent can be chlorinated. Industrial and hauled waste can also change the dissolved solids and chemical composition of final effluent water. Municipal water can change due to levels of disinfection, additives to prevent distribution system corrosion, softening, and shallow wells for radium removal. A facility well has the characteristics of the local ground water. With all three water supplies, temperature can change during the year. Water pressure changes can affect water flows, especially with in-line systems commonly used with liquid polymers. Dilution water can be tempered with a water heater to improve polymer effectiveness.

**continued on page 14**
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Polymer Make-up System
Whether your make-up system is dry or liquid, the polymer must be diluted into a working solution. Generally, dry polymers are measured by a feed system calibrated for lbs per hour, and liquids are set to deliver a given gallons per hour. Each must be calibrated to correctly deliver the correct amount per hours of run time. At the point of dilution, the polymer must be mixed with the dilution water. With too little energy the polymer will not mix completely, too much energy and the polymer molecules will shear. After dilution, the polymer must be aged to uncoil the polymer molecules. For some systems, the polymer is aged in a make-up tank. With some liquid polymer systems the aging occurs in the polymer feed lines. In these systems, if you double the liquid neat polymer feed rate you would need to double the dilution water to keep the diluted polymer at the same concentration. Doubling the dilution water can halve the age time in the piping system. In addition, if there is a coating of polymer inside the polymer piping it can further reduce age time. If your system is having problems, you can easily create more problems by doubling your neat polymer feed rate.

Polymer Addition
After the correct polymer is chosen and has been made-up properly, it must be added at the proper dose and mixed with the correct energy. Some systems have several polymer addition points just ahead of the mixer. Each of the injectors must be kept clean and the mixing energy may have to be changed as flow rate changes. Polymers may work better at higher dilutions so they mix more completely with the feed sludge. Dilution may need to be changed if feed solids become more concentrated.

Some systems have different addition points along the sludge feed line to provide different detention times for the polymer to react. Each of the components: polymer injector, feed lines, and mixer need proper maintenance to work efficiently. Polymer dose is proportional to solids concentration. Thus, if you are thickening WAS and it is varying throughout the day, the polymer dose must change to match the solids concentration. Maintenance of RAS pumps and clarifiers can all affect WAS solids concentration. If solids vary greatly, a WAS holding tank can be used. Waste activated sludge can be discharged into the tank, and then mixed while thickening. Note a WAS tank can create its own problems, such as low dissolved oxygen, which can change the sludge/polymer reaction. Leaving the sludge overnight, un-aerated to denitrify could also affect polymer dose, possibly for the better.

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2011 Operators Ride tours lead mining country

The 2011 Operators’ Ride was held the weekend of August 25th through the 27th, beginning with a cookout Thursday at the home of Rich & Deb Nichols in Darlington WI. Near sunset, most attendees returned to the Super 8 to retire for the night or congregate in the pool or bar areas to socialize, renew friendships and swap tall stories.

The group left the Super 8 at roughly 9:00 am on Friday, 24 bikes strong, for a ride to the town of Blanchardville for a buffet style breakfast. Leaving there, roads took us through villages, such as Argyle, Wiota, Gratiot, Shullsburg, etc., which are all well known to anyone reading this. We crossed into Illinois South of Hazel Green and entered Galena, Illinois, around 11:30 am.

Galena is a really interesting town, which retains virtually all the characteristics of a 19th century town! Arriving there, everyone split up and went their own way touring the downtown area. Around 1:30pm everyone began to congregate around the town square, from whence (whence’ – I love that word!) the return trip was made to Darlington, arriving around 4:00pm.

Saturday’s ride left at 9:00am, heading more or less South and West, crossing the mighty Mississippi at Dubuque and following the West side of the river South to Bellevue, for a rest stop at the locks on the river to observe a barge passing through.

The next place of note was Savanna, Illinois, crossing back from Iowa to Illinois on what must be the ricketiest bridge on the continent. The Savanna bridge is of the steel deck variety, and about as narrow as it can get and still have 2-way traffic!

Taking a right in Savanna took us to ‘Poopy’s’, a very interesting place, with bike repair shop, biker store, bar, restaurant, outdoor dining, and tattoo parlor. A stop was made at the Apple River State Park for pictures during our

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return to Darlington. The annual banquet was at 6:30 in the hotel dining room, followed by Reid’s Annual ‘Reidy’ awards. All in all, very enjoyable! 27 bikes made Saturday’s ride, including a few returnees who hadn’t made it for several years. Hopefully we will have even more of them in years to come.

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Flocculator
After the polymer has been mixed, a flocculator may be used to gently mix the sludge allowing solids to build into larger flocks. In some systems, the flocculation is done within the piping system, other times it is a separate tank with a mixer.

NOTE ON MIXING ENERGY: Three mixing energies have been discussed. 1. The polymer make-up unit which dilutes the polymer into a working solution, 2. The polymer addition point designed to mix the polymer with the solids, and 3. The flocculator, where solids come together allowing water to separate in the thickener. All three have a different purpose and mixing energy.

Thickener
The thickener must be set up with the correct wash water flows, speeds, and operating parameters. A polymer that works for a belt press may also work for a gravity belt thickener, but it may not be as economical. Each polymer selected by a jar test should be tested in the field. A salesman’s selection is not always what will work best or be the most economical. Most sales people know this and are happy to come out during the first trial run of their product. Thickeners have a wash water system - check pressures and spray nozzles. Belt speed and pressures all effect dewaterability. Calculate the thickener solids loading rate (generally in lbs/hr) to make sure it is not exceeded.

Filtrate
An inexpensive polymer is no good if the filtrate is heavy in suspended and/or dissolved solids. Generally, the more suspended solids, the more nutrients that will be returned into the system. If your system does not have a flow meter, take note of the spray volume in the manual so you can calculate the lbs of solids that are being returned back to the system. At minimum, take a grab sample from the filtrate and perform a suspended solids test. Calculate the percent capture.

Cake
The ultimate goal is thickened solids at the best price. A polymer sensitive to dose and conditions may not be worth the extra attention needed. A lower cost polymer that produces a lower concentration cake may end up costing more for anaerobic digestion heating and disposal fees.

Summary
Staff must have the information needed to efficiently operate the thickener and troubleshoot problems. Specifications on the WAS tank, polymer system, thickener, and the figures from this article are in the thickener room as a quick guide. Log sheets were developed for daily operation and polymer testing. Polymers tested were ranked based on filtrate, cake concentration, dose, and cost.

continued from page 14
2012 Operators Ride, July 20-21, St. Germain, Wisconsin

If you ride a motorcycle for enjoyment or to save money, long distances or short jaunts we invite you to join your fellow operators and their guests for the 2012 annual ride. The event begins with a cook out on Thursday night, for those who can make it, and continues with scenic rides through the local area on Friday and Saturday.

Over the years we have not only toured most corners of the State of Wisconsin, but also portions of our neighboring states of Minnesota, Iowa, Illinois and Upper Michigan.

The host for the ride will take you on their favorite rides and expose you to the towns, restaurants and saloons that they have discovered riding the back roads and lanes of the local environs. Alligator Slide and Stage Coach Trail is a couple of memorable roads we have had the privilege to travel. There is always some hidden treasure that you will discover on an Operators Ride.

The Operators Ride gives you an opportunity to share your riding passion with other like minded individuals and their co-riders. There is a lot of camaraderie that has grown over the years making this ride an event that most of us look forward to attending and participating in each year. Come join us and find out what brings people back year after year.

For more complete information on dates and lodging contact William/Reid Ltd at 262-255-5420 or 888-272-1722.

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Special tools, hoses, and parts are kept in the thickener room for easy access. Fittings were made to run test polymers from 5 gallon pails that can be quickly attached. If polymers are not compatible there is a mineral oil connection to chase the lines. Staff re-designed the polymer system with two day tanks, a polymer strainer, and unions that can be used to easily take apart piping if they are in need of cleaning. A spicket was added in the polymer make-up line so staff could sample for jar testing or total solids testing. The neat polymer suction line has a vacuum gauge to show potential plugging with the line or strainer.

A list of variables was documented (See figures 1 & 2). Many of the variables were created in the facilities database so staff can graph dose against changes in operation such as MCRT, aeration detention time, percent volatile or chemical addition (see figure 3). A list of treatment and thickening variables in the plant database was organized so they are handy for operators. They can use the database graphing application to graph dose on one Y axis and a variable that affects dose on a second Y axis. Not all variables that influence polymer effectiveness are in the database, such as mixing energies, clean polymer lines, calibration of metering systems, and overall maintenance.

Staff made numerous changes with the thickener operation to streamline its operation. To record settings, staff was supposed to open electrical cabinets. Displays were installed on the outside of the cabinet so operators could more easily record settings. Staff added a wash down mode on our rotary drum thickener so operators could press a button that turned up drum speed and ran the wash bar continuously during cleaning. We worked with our VFD supplier to do programming and our electrical technician preformed the work at minimal cost. Many equipment manufacturers were willing to help make changes at start-up and staff took advantage of their contracted start-up time.

Our polymer system only provides a few minutes to age in the polymer make-up line. Any coating in the piping

Figure 3 - Example of graphing variables with the dose to find relationships. In this example, dose is on one Y axis and MCRT is on the second Y axis. Both are graphed over time.
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Hortonville hosts November Lake Michigan WWOA meeting

The November 10, 2011 meeting was hosted by the Village of Hortonville and took place at the Grand View Golf Club in Hortonville. It was a beautiful setting with a light snow falling and a total attendance of 80.

Chairman Kris August was running late so he had asked Vice-Chairman Jeff Smudde to kick off the meeting. Vice Chair Smudde started the meeting by introducing Village Administrator Patrick Vaile who not only gave a warm welcome to Hortonville, but also regaled us with a bit of the history of Hortonville. Did you know that the founder of Hortonville, Fr. Alonzo Horton, later went on to found San Diego CA? Neither did I.

Our first presentation was from Mark Duerr of Mulcahy Shaw Water entitled “INDUSTRIAL PRETREATMENT FLOW MONITORING AND SAMPLING”. The second presentation was from Eric Fisher of Strand Associates entitled “USING SCADA TO REDUCE ENERGY CONSUMPTION”.

We then rolled into the LMD Business Meeting with the first item on the agenda being the approval of the August 18, 2011 meeting minutes. Copies were made available both online and at the registration desk that morning. We had a motion to accept from Travis Coenen and a second by Dick Sachs. There was not any additional discussion and the minutes were approved by the membership. In the role of Treasurer, I was called up next to present the Treasurer’s report. We then moved to Old business and there was none – so we moved to new business.

Vice-Chair Smudde wished a warm “Thank You” to Administrator Vaile and to Public Works Director Carl McCravy of Hortonville and to the Grand View Golf Course for hosting the meeting. Also a big THANK YOU to HD Supply, our break sponsor.

Dick Sachs of the the DNR was then asked to give his update. Dick advised that the scores from the November 2 Operator Certification exams would be sent out by the end of the month. Further if you do not receive your scores by that time, please contact Dick Sachs. Then Dick mentioned that the DNR had filled some vacant positions, including: Jim Schmidt – a long time central office employee had filled the Effluent Limits Calculator position previously held by Jeff Haack and that Dave Stertz transferred from the dam

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safety program to take the Wastewater Engineer position vacated by Jim Savinski. On the state level, Dave Argall moved from the Customer Services and Licensing Program to be our Database Systems Manager – previously held by Gail Mills.

Vice-Chair Smudde then asked me, Bernie Hengels to hold up the Region of the Year award that had been presented at the annual conference in LaCrosse. Congratulations to the LMD members for earning this award.

There was no additional new business items and the membership were asked for a motion to close the meeting. This motion was made by Kevin Skogman and seconded by Brian Helminger.

Following the business meeting, we had a break so that the members could visit with the vendors in the hall. The break was sponsored by HD Supply.

Next up was a presentation by Owen Smith of WI Dept of Workplace Development on the WASTEWATER APPRENTICESHIP PROGRAM. Our 4th presentation was from Larry Henderson of Energenecs on BIOGAS SYSTEM ECONOMICS. Lunch was provided by local caterer Romy’s and turned out to be a hit with the members.

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Following lunch we moved into a presentation by Jan Scott of Unison entitled “BIOGAS...WHAT IS THE FUTURE – BIOMETHANE AS A TRANSPORTATION FUEL”.

Immediately after the Biogas discussions, we welcomed Jesse Hass of Hortonville WWTP and Jeff Kellner of McMahon to the podium to give us an overview of the recent plant upgrades and to present with pictures a review of the plant upgrade process.

Staff added a hose union on the polymer line so a 1½ inch flushing hose can be easily connected. To find out what solution cut hardened polymer, we had some old polymer goobers from a pail and placed them in different solutions to see which product broke down the gooey clumps the best. From the testing, we felt bleach worked best.

Bleach is fed into the polymer line with a chemical pump along with some flushing water. We did not feed the bleach with our neat polymer pump and through the polymer mixer. The water in the bleach may have reacted with the neat polymer. The bleach solution was allowed to sit in the line over lunch and then flushed for one hour with water. In the future, we hope to find a tank that will be placed in line with the diluted polymer providing additional age time.

Staff would like to add some cabinets to store equipment and manuals that will protect them from wash down spay. Tables have casters so we can roll them out of the room for cleaning.

This article only touched on troubleshooting and optimizing a polymer feed system. There are many other polymer subjects to explore including: Jar testing, working with your polymer supplier, bidding contracts, optimizing the system with SCADA, calculations, and preparation before you test polymers. We'd like to hear about other operators’ experiences and systems.

References
LaMontagne, Peter and Yevilevich, Liya. “Polymer Power” WE&T Magazine May 2006: 61-64.
LaMontagne, Peter. “Polymer Ps and Qs” WE&T Magazine February 2011: 44-49.
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### Second Annual CSWEA Leadership Academy
**Monday April 2, 2012**
**Monona Terrace Convention Center, Madison, WI**

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<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>09:00-10:00 AM</td>
<td>Registration</td>
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<tr>
<td>10:00-10:15 AM</td>
<td>Welcome and Introduction</td>
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<tr>
<td>10:15-11:00 AM</td>
<td>Mary Scheibel “Taking your Network to the Next Level”</td>
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<tr>
<td>11:00 -12:00 PM</td>
<td>Panel “Leadership at Different Career Stages and Points of View”</td>
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<td>Andy Richardson, James Kerrigan, Municipality TBD</td>
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<td>12:00 -12:45 PM</td>
<td>Lunch, included</td>
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<tr>
<td>12:45 -1:15 PM</td>
<td>Eric Lecuyer “Start Building Your Network Today”</td>
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<tr>
<td>1:15 – 2:00 PM</td>
<td>Carol Cortez “Emotional Intelligence”</td>
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<tr>
<td>2:00-2:15 PM</td>
<td>Break</td>
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<td>2:15-3:00 PM</td>
<td>Mark Eddington “Knowing Your Role”</td>
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<tr>
<td>3:00-3:45 PM</td>
<td>Jon Butt “State of Water: Why it is a Great Time to be in the Business</td>
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<td>3:45-4:45 PM</td>
<td>Vladimir Novotny: A YP twist on the presentation “Closing the Water Cycle”</td>
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<tr>
<td>5:30-7:00 PM</td>
<td>Education Seminar Welcome Reception</td>
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Fee Per Person: $75 or $25 if you attend the CSWEA Education Seminar Nutrients in Limbo (April 3rd)
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November North Central steering committee meeting minutes

Attendees: Matt Saloun, Lyle Lutz, Ken Bloom, Terry Vanden Heuvel, Rich Boden, Ron Dickrell, Katie Gruber. Vanden Heuvel called the meeting to order at 12:15 pm.

2012 Officer Assignments: Terry Vanden Heuvel – Chairman; Matt Saloun – Vice Chairman; Ken Bloom – Treasurer; Rich Boden – Secretary. Dickrell announced he is retiring from Marshfield by December 31, 2011. After some discussion, Dickrell agreed to serve the rest of his term which ends in 2012.

Future Meetings: Plover will host the winter meeting. Almond needs approval to host the spring meeting. Merrill will host the summer meeting. Nekoosa volunteered to host another meeting. They will host a 2013 meeting. Rhinelander and Union Center were also possible sites for 2013. Topics include water reuse for frac sand production; wetland discharge; PO4 rule update; safety; wellness training; oil recycling; biosolids; DNR apprenticeship program; lab safety; safety inspections/audits.

Operator Competition: Lutz reported the operators’ competition is planned for 2012. Some past NC team members want to do it again. April is the deadline.

Training Events: The concept of holding half or full day training events where small groups of operators work in teams to perform hands on safety, lab, or maintenance was discussed. The possibility of working with UWSP was put forth. It was agreed to sponsoring another Microscopic Exam training session in 2012. Vanden Heuvel will work on the arrangements.

Financial Report: The financial report was reviewed. The region has a large enough fund balance to consider spending the balance down. Suggestions included subsidizing some upcoming meetings or buying door prizes for meetings.

Other items: It was noted that LMD uses only email to announce meetings. Boden will contact LMD for more details. The use of social media at the regional level was discussed. Gruber agreed to set up demonstrations for the committee to use and review.

The meeting was adjourned at 1:30 pm.

Submitted by Rich Boden, NCR Secretary
WWOA Board meeting minutes, Oct. 3 and 4, 2011, LaCrosse

1. Call to order, Roll call.-President Carlson called the meeting to order at 10:10 a.m. on Monday October 3, 2011 at the Radisson Hotel, La Crosse Wisconsin. Roll call was taken. All board members were present.

2. Approval of the Minutes of, August 31, 2011- After review K. Freber made a motion to approve the minutes as presented, K. Zimmer seconded the motion. Motion carried.

3. Financial Report- McKee presented the Financial Statement for the Board to review and approve. McKee stated that as of September 15, 2011 the WWOA had Revenues totaling $102,438.52 and expenditures of $84,488.03 with excess revenues over expenditure of $17,950.49.

After discussion R. Thater made a motion to approve the Financial Statement as presented, B. Bartel seconded the motion. Motion carried.

4. Committee Reports
   a. Nominations Committee-Nominations chair B. Bartel reported that he received one nomination for the office of Vice President position and that is Kevin Freber. He has received four nomination papers for the three directorship positions. They are Kelly Zimmer-MSA(incumbent), Jeff Simpson-Liquid Process Equipment, Jim Bergles-Eagle Lake Sanitary District, and Sharon Thieszen-Sheboygan WWTP. If Kevin Freber is elected to the Vice President position, there will be a 1 year position to fill the remainder of Kevin’s directorship.
   b. Promotional Items- Chair Person L. Lutz reported he has ordered all promotional items, and will be setting up the promotional booth on the lower level of South Hall at the La Crosse Center where the technical session and the exhibits are set up.
   c. Membership- No Report. McKee stated that as of September 19, 2011 there are 2068 WWOA members.
   d. Scholarship- D. Egge reported that we have one recipient for the Crane $1,000.00 scholarship.
   e. Executive Committee- No report.
   f. Clarifier- No report.

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g. Career Development- D. Carlson reports we should have a booth at the Guidance Councilors conference next February in Stevens Point. He would be willing to work at our booth next year. McKee is to check to see if we can get a free booth because we are non-profit.

h. Awards- R. Thater reported that all awards plaques are done and will be brought to the conference by Randy Herwig. McKee reported that all certificates have been printed, framed, and will be available at the registration booth storage.

i. Operator Training- No report. K. Freber informed the Board the micro session was very well received, and whoever is chair next year of the Operator Training should consider doing it again.

j. Directory- McKee reported the 2011-2012 directories are printed and will be available at the Conference.

k. Publicity- L. Lutz reported that press releases were sent out to the La Crosse Tribune, WKBT-News and the U.W. La Crosse Science Department. All the award winners’ information request packets are ready.

l. Regional Coordinator- K. Zimmer provided an agenda for the regional officers meeting. Zimmer will collect a copy of each regional report for McKee.

m. Government Affairs- No report. The first meeting of the committee is scheduled for October 26, 2011.

n. Biosolids Symposium- No report.

o. Liaison- No report.

p. Web-site- B. Bartel reported part of the Web-Site Committee met with Webfitters on September 12, 2011. As of September 12th there were 454 people registered for the conference. 234 of those registered at the time were entered by McKee through the web site. 220 individuals registered on-line according to the web site records.

Webfitters indicated that they have corrected the multiple billing problem. McKee refunded all multiple

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charges he was made aware of which totaled 61 charges. Webfitters feels that one of the biggest issues is communication. Bartel informed the Board that Scott Thompson is stepping down as web master, but he will stay on until a replacement can be found.

McKee reported he has fielded many complaints about the on-line registration, including complaints by exhibitors. Complaints ranged from to complicated, to slow, awkward, and multiple charges to their credit card. These are major problems and they should not have happened.

As a user of the system on a day-to-day basis McKee finds the system to be slow and time consuming. McKee stated at the very least there should be an independent evaluation of the system.

As for the communication problems, McKee agrees with the communication the problems. He feels that he informs Webfitters of the problem(s) to the best of his knowledge. If they require further information to resolve the issue(s), he needs them to ask him the pertinent and relevant question.

A discussion ensued. After discussion a motion was made by D. Doerr to stay with Webfitters. Furthermore McKee is to set up a meeting between the new Web Chair, himself, and any board member that wishes to attend. The purpose of this meeting is to resolve some of these issues and streamline the online registration. W. Peterson seconded the motion. Motion carried.

L. Lutz made a motion to post the position for Web Master online with a dead line of November 1, 2011. K. Zimmer seconded the motion. Motion carried.

q. Technical Program- W. Peterson reported all technical sessions have been confirmed. The moderators packets have been put together and are ready for distribution. W. Peterson provided the Board with the bussing schedule for the tours, and informed the Board there will be a signup sheet at registration. The Keynote will arrive on Tuesday and will be at the Meet & Greet. The Secretary of the DNR has confirmed for Friday morning.

r. Exhibit Committee & M&C Committee- C. Strackbein provide the Board with a list of Exhibitors continued on page 33
and a booth layout. C. Strackbein informed the Board there have been numerous problems with Exhibitors attempting to register online. She stated that the system WWOA is using is ineffective and has caused serious problems from the Committee’s point of view.

s. Operators Competition- No report.

t. Local Arrangements- W. Peterson reported everything is set for the shuttle bussing and he provided the Board with a bussing schedule.

u. Spouse Program- W. Peterson reported everything is set the bussing is set for Thursday, and the gift packets will be put together on Tuesday. He needs someone to go to the winery to pick up the wine for the gift bags.


w. Sporting Clays- No report.

x. Permanent Arrangement- No report.

y. Resolutions and Bylaws- No report.

z. Historical- No report.

A motion was made by W. Peterson, and seconded by B. Bartel to accept the Committee Reports as Presented. Motion carried.

5. OLD BUSINESS- No old business.

6. NEW BUSINESS

a. McKee provided the Board with a copy of the Annual Business Meeting for Thursday.

b. The Board scheduled the next meeting of the Board Of Directors for December 8-9, 2011 at the Kalahari Resort in Wisconsin Dells.

7. ADJOURNMENT- There being no further business K. Freber made a motion to adjourn, B. Bartel seconded the motion. Motion carried.

Respectfully submitted,
Richard D. McKee
Save These Dates for the Collection System Seminars...

Thursday, June 7, 2012
Watertown
25th Annual Classic Collection System Seminar

Thursday, July 26, 2012
Marshfield
5th Annual Northwoods Collection System Seminar
Help Wanted: District Administrator, Delavan Lake SD

Delavan Lake Sanitary District, located in the Town of Delavan, WI. is seeking a District Administrator to run a 3,080 connection, gravity/lift station sewer collection system and lake management operation involving a 4 month aquatic harvesting season. This person will supervise a staff of 10 to 14 full time and seasonal people. The candidate will manage and participate in field and office operations. The position involves knowledge of accounting, setting and maintaining a budget, computer skills using office applications, maintenance of a sanitary district, and problem solving skills. The Administrator reports directly to the District Commissioners. The Administrator will work with the Commissioners on setting District policies, staffing, budgeting, and acting as liaison between other governmental bodies. The position offers the individual a variety of experiences. The successful candidate will be an Engineer, or hold an accredited four-year degree, or have five years District management experience in gravity/lift station operation. All candidates must have 5 years of experience in sanitary sewer related work. Some inland lake experience/ knowledge, public relation experience, and PE designation are plusses. Salary range is 65,000 to 80,000 per year, based on experience and qualifications, plus benefits.

Please send a letter of interest and resume by March 15, 2012 to: Delavan Lake Sanitary District, Attention Commissioners, 2990 County Road F South, Delavan, WI. 53115
Or E-mail: sde7619@gmail.com
Delavan’s website is, www.dlsd.org.
General job description available on request.

DLSD is an equal opportunity employer.
Everyone at some point in their career is a manager. Whether you are in charge of a large utility with numerous employees or are given a small project to manage, some of the same basic skills are required. Working in either the public or private sector wastewater treatment profession presents some unique challenges; dealing with the public, employee issues, budget concerns, liability, public relations, and politics to name a few. Starting with this issue, we will be exploring those challenges in a new Clarifier column. We will be inviting guest columnists to write about their experiences or offer advice. For this first column, let’s look at the very basic elements of management:

What is the definition of a manager? My friendly Thesaurus tells me that a manager is a “boss, director, executive, administrator, or supervisor”. Personally, I think that they miss the whole point. The type of manager that I want to work under is a leader. Thinking back to some of the great (and not-so-great) supervisors of my career, who really stands out? The true leaders. These are the people that could accomplish great things with limited staff and resources; that could encourage and mentor their employees; and who could manage stress coming to them from above and not let it affect their decisions. Does it sound pretty impossible in this economy? It’s difficult, but not impossible. In future columns we will explore some “tricks of the trade” in managing people, projects, and situations.

In working with utilities such as collection systems and wastewater treatment plants, your leadership decisions may be critical. The safety of your employees and co-workers may depend on you. The operation of a wastewater or water system along with water and sewer rates in your community may depend on your financial and operational decisions. Ultimately the environmental health of your effluent receiving waters is in your hands.

Kouses and Pozner’s Leadership Challenge describes the process of leadership as five basic steps: 1) Model the Way. In short, be a good role model. If you’re lazy, dishonest, and a poor employee in general, do you think you will earn any respect from your employees? The supervisors that I most respected were hard-working, and above all, honest. Yes, they got frustrated, especially since they were human and working in the wastewater field. But they never took it out on their employees or peers. They simply took steps to try to improve the situation.

Which brings us to step 2) Inspire a Shared Vision. Good managers have a vision – they want to change things for the better. If this inspiration becomes contagious, you as a manager will have all of the support that you need. Just think – every good man-made item or process in this world came about because of someone’s vision and action.

Sometimes in order to do that they may have had to (3) Challenge the Process. Leaders search for opportunities to grow, innovate, and improve. This may rub some people the wrong way, of course, but if you can convince them that EVERYONE will benefit, they may jump to your side.

4) Enable Others to Act. Good managers foster collaboration and trust in order to get things done. They make it possible for others feel like they provide needed services or unique skills. Insecure managers keep everyone out of the loop, and feel as if they are the only ones that can do the work, thus keeping the system in a rut. Which would you rather be?

5) Encourage the Heart. Hasn’t everyone had a few chips in their morale lately? A good leader recognizes contributions and gives encouragement; even she he or she is feeling like the bottom is dropping out. Many years ago one of my favorite bosses told me in so many words that if I worked hard enough and had the self-confidence, I could go far. I’ve never forgotten that. Thank you, Ron. I’m still working on it.

You may think that this is over-simplifying something that experts have struggled with for years, but it’s a start. Look at yourself and look around you. If you can improve something for your employees, your clients, your customers, your co-workers or yourself, today is the day to start trying. We will try to give you some new tools in future columns to do just that. Next issue: Public Relations.
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