INSIDE THIS ISSUE

• Feature treatment plant / Page 3
• Brain teasers / Page 21
• Annual Golf event announcement / Page 25
• Item for sale / Page 29

The Clarifier
WISCONSIN WASTEWATER OPERATORS’ ASSOCIATION, INC.

2010 Annual Conference:
Kalahari Resort, Wisconsin Dells
October, 2010
President’s Message

I certainly hope that everyone had an enjoyable Holiday Season and was able to spend some quality time with family and friends. Reality seems to set in for me after the holidays as the outside decorations get turned off (I personally wait for warmer weather to take them down) and the inside trees get taken down that were up to celebrate the season. Now is the time I realize that winter has set in and my anticipation of spring arriving begins. I know some, maybe most of you, enjoy the winter weather, but I for one just tolerate it.

Randy Thater, 2010 WWOA Technical Chair, has been working diligently on the preparations for the 2010 Annual Conference at the Kalahari Resort in Wisconsin Dells. More than 60 technical presentations have been submitted for consideration for the conference. Great job by all on getting the papers submitted. The Technical Committee that Randy has assembled will be meeting in mid-February to whittle down the papers to the 35 or so that will be presented as part of the conference. Randy has reviewed the presentations and from the sounds of it, the Committee will have a tough time reducing the number of papers because they all offer interesting topics. Randy is also exploring various options for the keynote speaker and the entertainment after the annual awards banquet. Things are shaping up to be another successful conference.

The month of February brings about many training opportunities for people to attend. Most of the WWOA Regions offer regional meetings during this time. The Regional Officers do a great job in putting together quality agendas for their meetings. Added to these meetings is the annual Government Affairs Seminar on February 23. All of these training sessions provide excellent training opportunities. If you have the time, and I know time is tight for everyone, please consider attending one or more of these training sessions. You can check out the WWOA web site at www.wwoa.org to get more information on these and other training sessions that are being offered.

I know many of you serve your local communities in many different ways beyond running the wastewater treatment plant. You get involved in everything from snow plowing to garbage pick up to fire fighting to whatever else is tossed your way. Please remember to be safe when wearing these many different hats you are requested to wear. I am sure most of you have heard about the explosion involving a dumpster fire not very far from the Green Bay area where one of the firefighters was fatally injured. I personally know one of the persons involved in that tragedy and he was “lucky” to get out of there with only minor injuries, although the explosion did toss him around a bit. Let this be a reminder to all of us to use caution and awareness as we go about our various duties and to carry out our jobs, with safety first and foremost in mind, and perform them in the safest manner possible.

Until next time – be safe and take care.

DOES YOUR WASTEWATER TREATMENT PLANT NEED IMPROVEMENT?

• We GUARANTEE effluent of 10 BOD/15 TSS/2 Ammonia.
• We specialize in upgrading existing wastewater lagoons and tanks.
• If you have an existing system that needs expanding or is having odor problems, call us for a confidential proposal.

LEMNATA TECHNOLOGIES, INC.
Innovative Wastewater Solutions
Phone: 612-253-2002
www.lemnatechnologies.com

DORNER DOES
Your local representative:
Phone: 414-355-8685
www.dornerdoes.com
Opportunity from Stipulation

Douglas J. Nelson, P.E., Wastewater Supervisor  
Ruekert/Mielke

The Village of Mukwonago’s Wastewater Treatment Facility (WTF) staff has been able to capitalize on a State of Wisconsin Department of Natural Resources (WDNR) stipulation by pursuing innovative technology for ammonia removal. In addition, improvements in equipment and energy-saving initiatives resulted in an updated facility without the need to construct additional aeration tanks. In 2004 the WDNR stipulated that the 1.5-mgd Village of Mukwonago WTF must remove ammonia year-round. If the WTF continued to rely on its conventional activated sludge facility to maintain nitrification in the winter in southeastern Wisconsin, it would require several additional aeration tanks to provide the higher solids retention time (SRT) to ensure nitrification.

Instead of beginning the construction planning right away, the operators decided to test some other options that could avert construction and get the needed performance out of the existing tanks. Little did they know at the time that this stipulation would turn into an opportunity to pursue innovative technology, improved their outdated equipment and reap energy savings.

Mukwonago WTF in a Nutshell

In 2005 the WTF consisted of a headworks including comminution, influent pumping, and aerated grit removal, followed by two identical independent process trains — denoted as north and south — consisting of primary clarification, aeration using coarse bubble diffusers, and final clarification. The two parallel aeration basins provide a hydraulic detention time of 6.5 hours at average design flow. Final clarifier effluent from both trains is combined, disinfected using chlorination, dechlorinated, and pumped approximately 1 mile to the Fox River.

Return activated sludge is pumped by dedicated and isolated piping from each of the final clarifiers back to the aeration tanks. Waste activated sludge is anaerobically digested and dried on sand drying beds prior to disposal on agricultural lands. The secondary digester is decanted nightly, with supernatant returned to the WTF headworks.

INNOVATION

The facility began an evaluation of integrated fixed-film activated sludge (IFAS) technology using a full scale demonstration test program to meet new WDNR requirements. The WTF ran two sets of experiments using parallel IFAS and non-IFAS process trains in January–March 2006 and January–March 2007 to evaluate the ability of IFAS technology to meet the facility’s new ammonia requirements.
removal requirements without construction of additional aeration tanks.

The fact that the WTF has two parallel, independent process trains made it an excellent site to perform the full scale IFAS demonstration test. At the time of the IFAS project, the WTF was operating at approximately 50% to 60% of its design flow and loadings.

IFAS

The facility chose an IFAS system that consisted of a number of metal racks that supported open weave media, which provide a surface for biomass to attach and remain in the aeration basin. In an IFAS system, the attached biomass effectively increases the mass of solids available to treat wastewater without a proportional increase in the mixed liquor suspended solids concentration. In Mukwonago’s case, the lesser amount of suspended biomass made feasible by use of IFAS, theoretically, reduced the solids loading rate to the secondary clarifiers, thus assuring that the clarifiers would be able to meet future flows and loadings. Testing protocols and WTF operations were developed to determine if IFAS could meet the required nitrification performance at this facility, and also to measure the limits of the technology compared to a conventional suspended-growth activated sludge facility. The facility has two separate and parallel process trains that were operated with equivalent influent for comparison purposes.

The First Season

To prepare for the first season of experimentation in December 2005, the aeration tank in the south process train was equipped with new fine bubble air diffusers and ten Cleartec fixed grid-type media IFAS modules sized by the manufacturer to provide approximately 5410 lb (2454 kg) of fixed biomass and provided by Energenecs, Inc. That is the equivalent of 3200 mg/L volatile suspended solids (VSS) in the existing tanks. In late December 2005, mixed liquor was transferred from the north aeration tank to the south (IFAS) aeration tank, and all primary clarifier effluent was directed to the south aeration tank. During January–March
EVERYTHING YOU NEED—
Your One-Stop Shop for Water & Wastewater Supplies

• Over 27,000 products in stock & ready to ship
• Expert technical support & personal customer service
• 100% money-back guarantee

Call & reserve your FREE copy of our NEW Master Catalog #120

USABlueBook
Get the Best Treatment™
800-548-1234 • www.usabluebook.com
2006, all WTF flows were processed in the IFAS aeration basin in an attempt to duplicate full WTF design conditions.

Initially it was hoped that nitrification testing could be accomplished in this first season. However, the late installation and very cold weather in December resulted in cold wastewater temperature that prevented the establishment of nitrifying biomass on the IFAS media panels in advance of the test period.

The Second Season

The testing objective for the second season was to run each process train at a progressively lower suspended growth SRT to evaluate the effects of IFAS in delaying loss of nitrification. This in turn would provide quantification of the IFAS biomass in the aeration basin and allow a rational prediction of WTF performance as flows and organic loadings increase in the future up to full WTF design loading parameters.

To prepare the north aeration basin for the side-by-side performance testing, in fall 2006 it was converted from coarse- to fine-bubble diffusers, which greatly simplified balancing of air to the two aeration basins. This also provided for similar conditions in both basins.

To prevent commingling of biosolids between the north and south process trains, facility staff isolated the wastewater flows starting at the primary clarifier effluent troughs.

The mixed liquor suspended solids (MLSS) concentration was maintained independently in each aeration tank to approximate the SRT that would be feasible under WTF full design flows and loading conditions. The MLSS in the IFAS tank was maintained at a lower value to compensate for the theoretical quantity of biomass attached to the IFAS modules.

Temporary flow meters and flow composite samplers were set up to verify the flows and loadings to each train. Parallel process testing of two process trains presented a significant challenge for the WTF’s wastewater testing laboratory. Much of the effort expended to perform this full scale process testing was provided by the WTF staff. The data obtained by the WTF operators included, in addition to their normal workload, tending three additional samplers and performing over 980 additional measurements or laboratory analysis during the test period. These tests included suspended solids, volatile suspended solids, biological oxygen demand (BOD), ammonia, sludge volume index (SVI), pH and more.
To compound the challenge, going into the second season, the WTF was operating short-handed, with only two full-time and one part-time operator. As a result, the extra workload anticipated for lab analyses was out of the question. Fortunately, in late 2006, a new lab-qualified superintendent was hired, and subsequently all routine and test related lab analyses were performed on-site in the WTF lab. The staff taking on the laboratory duties improved turnaround time for WTF operating data and significantly reduced costs. But the sheer burden of effort required made the prospect of extending testing beyond the original three months schedule impossible to consider.

In retrospect, contract lab testing may have reduced the burden of responsibility on the already overworked WTF staff, and would have allowed more flexibility to extend the test if needed.

Second Season Findings

Stress testing of the IFAS system was intended to show its performance in very cold mixed liquor, typically 7°C (45°F) or colder at this facility, when the bio-activity of the nitrifiers is at a minimum. The Wisconsin winter of 2006–2007 failed to produce extended periods of bitter cold weather; and, as a result, the mixed liquor temperatures hovered between 8°C (46°F) and 10°C (50°F) most of the time. At these temperatures it was difficult to reduce the SRT enough to lose the nitrifier population in either the IFAS or non-IFAS process train.

Actual testing started Jan. 3, 2007. For purposes of this study, SRT is defined as the mass of sludge under aeration divided by the mass of biosolids wasted per day. As shown on Figure 1 (p. xx), at the start of testing, the north aeration bay MLSS was 3250 mg/L, yielding a 12-day SRT; the south (IFAS) aeration bay MLSS was 2200 mg/L, yielding a 6-day suspended solids SRT and a 15-day combined SRT with IFAS biomass considered.

Ammonia bleed-through was first detected from the north (non-IFAS) aeration basin on Feb. 25, and the problem continued to become progressively worse until March 15, after which time approximately 35% of the north basin flow was redirected to the south basin. The diversion of flow resulted in 40% of the flow going to the north aeration basin and 60% to the south (IFAS) aeration basin.

On March 20, flows to the north aeration basin were reduced further so that the north basin was treating only
25% of the flow. These two flow diversions were done as a final stress test of the IFAS system.

The south (IFAS) basin reacted to the diversions by showing ammonia bleed-through starting on March 15. But, despite being saddled with a sustained 50% higher flow and loading from the stress test, the south (IFAS) basin recovered by the end of testing, March 29. The north basin field testing verified that ammonia bleed-through — which indicates loss of nitrifier population in cold water — began after sustained operation near an SRT of 7.5 days, the theoretical minimum.

Applying a 1.5 safety factor to this minimum sludge age to account for shock loads and industrial discharges indicates that an 11-day SRT should be the minimum design for the facility operating without IFAS.

The rapid recovery of the IFAS basin to the sustained 50% increase in flows and loadings suggests that the IFAS system will be resilient and capable of recovery from shock loads even in relatively cold (10°C) mixed liquor temperatures. This resilience has been proven over the past two winters.

Figure 1. Field Data

SRT = Solids retention time.
MLSS = Mixed liquor suspended solids
Energy is one of the largest expenses for Wisconsin’s water and wastewater facilities. Fortunately, it’s also one of the most manageable.

Let Focus on Energy help you find practical ways to reduce your energy use and operating costs—from installing energy-efficient pumps, motors, and variable-speed drives, to adopting energy-saving best practices, modifying process operations and utilizing renewable energy.

Focus on Energy can help you:
- Identify energy-saving opportunities
- Educate your staff on energy management practices
- Earn financial incentives to help cover the costs of energy-efficient modifications

Call 800.762.7077 or visit focusonenergy.com/ww to learn more and get started today!

Request your FREE Water and Wastewater Energy Best-Practice Guidebook

Packed with ideas to help you implement energy-efficient practices and equipment in your facility, this invaluable resource is the perfect starting point for creating your own energy management program. Visit focusonenergy.com/guidebooks to download your free copy today!
Other Upgrades

Once the IFAS system was proven, other plant systems needed to be updated to ensure that the facility's discharge into the Fox River will remain at consistently high levels. Three new influent pumps and new blowers, both equipped with variable speed drives, were installed in the hopes of providing energy savings. As a result of these projected savings, the Village of Mukwonago has received incentives from We Energies. The original building had an elevator that posed significant safety concerns. That elevator was removed and a new open staircase and ventilation system was installed.

A Huber step screen, provided by Energenecs, replaced the comminutor to reduce the non-treatable solids reaching the IFAS system. This has significantly reduced the rags and other materials accumulating in the anaerobic digesters. It removes debris at the headworks of the facility that in the past would accumulate in the downstream tanks. This greatly reduces the expected cleaning and maintenance of downstream treatment processes. Once screenings are cleaned and then compressed to remove water, they are
deposited directly into a large plastic bag that rests inside a small, roll-off cart. Once a week, the bag is emptied. After the primary digester was cleaned last year, the step screen’s ability to effectively remove debris is expected to keep it clean.

As part of the aeration system upgrade, three Kaiser positive displacement, variable speed, 75 Hp blowers were installed. Aeration basin DO is automatically controlled through modulating valves. Aeration delivery pipe pressure is maintained by blower speed. Converting from single speed centrifugal blowers that fed course bubble diffusers to variable speed blowers feeding fine bubble diffusers has allowed for significant energy savings for the Village’s utility customers. Figure 3 demonstrates the energy saving since installation.

Benefits

Faced with a stipulation by WDNR, the operators at the Mukwonago WTF were able to make the best of meeting statutory requirements. By taking a holistic approach and with careful planning they have been able to realize the following benefits:

1. Utilize innovative technology to increase the treatment capacity of the facility without building expensive tanks and using space reserved for future upgrades;

MUNICIPAL WASTEWATER TREATMENT

At Trojan, we believe clean water is an invaluable resource. That’s why we are passionately pursuing groundbreaking UV solutions to help municipalities safely and reliably deliver water confidence to their communities. With the largest installed base of UV systems on the planet, many Trojan innovations define the industry standards for protecting our water from microbial and chemical contamination.

For wastewater and reuse UV treatment, the world is turning to Trojan.

Represented by:
Mulcahy/Shaw Water, Inc. | info@mulcahyshaw.com | T. (262) 241-1199

www.trojanuv.com
2. Improve preliminary treatment through the use of fine screens;
3. Improve safety during regular maintenance and operations by eliminating confined space entry and line shaft pumps; and
4. Reduce energy usage at the facility by approximately 30% through the use of fine bubble diffusion, variable speed blowers, and variable speed influent pumps.
OPERATING COSTS IN A NEW WAY.

Crane Engineering is your one source to reduce valve and automation costs.

Our Valve SuperSource is your one source for all your valve and automation needs. From inventory to repair and installation to design and customization, we’ll help reduce your system downtime and your total valve and automation spend.

LARGE INVENTORY

Our Valve SuperSource features one of the largest inventories of valves in the state. We stock Plug, Knifegate, CCNE Check, Butterfly, Relief and other valves from Milliken, Orbinox, Crane and others.

EXPERT REPAIR & INSTALLATION

With one call, you can get a factory certified valve installation and repair team.

• State of the art valve diagnostic and troubleshooting equipment
• 24/7 Service and repair all valve types.
• P.M. and repair programs allow you to reduce your downtime.

DESIGN & CUSTOMIZE

We’ll help you customize your valves from simple valve actuation to complex custom controls.

• In-house automation or field retrofit installations
• Design and fabricate customized actuation and accessory packages

Call 1-800-466-8171 or go to valvesupersource.com
Chairman Katie was running late so Secretary Wally opened the meeting with a welcome. Wally introduced a Utility board member, Ronald Schoch, who was representing the Mayor’s office. Ronald welcomed the group to Park Falls and commended the group for the work we do.

Secretary Wally introduced the first presenter; Jeremiah Wendt from S.E.H. Jeremiah’s topic was on nutrient remover and chemical treatment in W & WW. Jeremiah first discussed Ammonia nitrogen. Chemical compound NH3 (unionized) and NH4+ (ionized). This is used by WW plants to form amino acids, it is toxic to animals and plants at elevated levels, as pH increases toxicity increases and as temperature increases, toxicity increases. In biological nitrogen treatment, nitrification occurs, which is the chemical process of converting ammonia to Nitrite and nitrite. Necessary components for this process is air-(oxygen, carbon dioxide), Bacteria (Nitrosomonas, nitrobacteria) and temperature (40-45 degrees Fahrenheit). Denitrification is another process of converting nitrite to nitrogen gas. This can be accomplished biologically under anoxic condition. The process also needs a carbon source such as influent wastewater and return activated sludge which will produce methane. Jeremiah showed a graph which showed the cycle between aerobic and anoxic conditions.

Jeremiah continued with a chemical treatment for ammonia using break point chlorination. This is very uncommon in WW treatment plants due to the large amount of chemical needed. This is used occasionally in drinking water and swimming pools. This process will readily oxidize substances such as iron and manganese. It reacts with organic matter, and reacts with ammonia to form chloramines (NH2CL)-(NHCL2 and reacts with chloramines to form nitrogen gas in chemical ammonia treatment virtually all ammonia can be eliminated, but nitrates remain. If insufficient chlorine is used, chloramines will convert back to ammonia. Stoichiometrically-chlorine to ammonia ratio is 7.6-1. Ammonia treatment using pH adjustment can be used if acute ammonia toxicity is the reason for the ammonia limit. The PH can be adjusted by acid addition using Sulfuric or Carbonic acids. The process of Phosphorus removal is different in that the phosphorus is organically bound and cannot be converted to a gas. This needs to settle out as a solid. The phosphorus is made heavier by incorporating it into the cell tissue. This is done by stressing the organism, starving the organism during an anaerobic condition and them going through the “luxury uptake” during an aerobic condition. Settling will then occur. Try to avoid prolong anaerobic conditions or the
phosphorus is released. Chemical phosphorus removal can also be accomplished by attaching the phosphorus to a metal compound such as aluminum Sulfate “Alum” or Ferric Chloride “Ferric”. This will cause phosphorus to settle out in sludge.

Chemical treatment in groundwater drinking water doesn’t usually involve nutrient removal. Chemicals used in other applications are Sodium hypochlorite “Chlorine” This can serve as a disinfectant, oxidation of Iron and manganese, and for break point chlorination. Another chemical used to oxidize iron and manganese is Potassium permanganate. You can use caustic soda for pH adjustment. And finally in some municipalities fluoride is added with the idea that it is helpful in the development of teeth in younger children.

The next presentation was on electrical efficiencies presented by Mike Judkins and Mark Thurow from Water Well Solutions. The first slide showed the specific capacity deterioration in GPM in relation to years of operations of a municipal well. There almost always a significant drop over time. Another good piece of information to have on file for all well pumps is the pump test data sheet and pump service inspection report. The boys showed 4 case studies of specific capacity test, first showing the test of the newly installed well pump, the next showing a test of current conditions and the last showing a test after there was a chemical treatment of the well hole and pump. In all cases the specific capacity greatly improved indicating possible screen plugging, aquifer plugging, mineral deposits on screen or well pump and possible not having all the slurry removed during development. The next segment was on motor efficiencies. The slide being shown next was of a pump curve and how the information on this was valuable in determining maintenance. The next segment was on motor repair versus replacement. If you are doing an efficiency upgrade you can typically expect a 2-3 year payback. Be aware that if you are having a motor dipped and baked, bearing repair and a complete motor rewind, it is likely that the motor will lose efficiency. Remember a new motor carries an mfg warranty and may be eligible for a rebate. There are typically four electric motor control alternatives, 1, full voltage start, 2. Electro-mechanical reduced voltage state, 3. Solid state reduced voltage starter and AC drives.

Pump pressure “Surge’ issues occur when a sudden change in flow is introduced during pump stating and
pump stopping cycles. Fluids typically do not compress and therefore do not act as pump system shock absorber. Hydraulic system problems occur when you trap the energy of moving water which will cause “water hammer” Check valves are used to keep head pressure from going backwards into the pump. Sudden operations (on or off) of a pump can cause the water hammer. The energy of back flowing water can create a shock wave traveling at the speed of sound. Some solutions for water hammer are to install automatic control valves, partial wind start, solid state reduced voltage starter, and/or AC drives. The decal operations of a motor will reduce water hammer by closing check valves slowly, it kinetic energy is slowly dissipated and a shock wave is not created.

What is an AC drive? Electronic device to provide “soft start” and adjustable speed control of AC induction motor, referred to as VFD variable frequency drive. Some good reasons to use AC drives is energy savings, eliminates water hammer, very flexible with precise control, consistent start and stop control and you can regulate speed or flow. The boys next discussed the Affinity laws for centrifugal loads. The graph showed the correlation of speed, to volume (GPM), to pressure/head to horsepower required.

Example- 100 HP induction motor @ 100% speed-100 HP will equate to approximate annual cost of $15,265/year. This is directly related to the KW rate. Taking the same 100 PH induction motor @ 85 % speed (using 61% PH) your annual savings would be $5,953/year. Centrifugal loads, such as pumps offer the greatest energy savings potential when less than 100% flow or pressure conditions are required. Using AC drives for energy savings on pumps and fans will reduce maintenance, less complex, no cavitation, reduce wear and tear, reduce environmental impact and create no water hammer. Using AC drives for process control will benefit you in having more accurate process control, more flexible process, and more reliability and is an excellent tool for date acquisition from your process.

Chairman Katie introduced the next presenter, Herman Luedtke from Flambeau River Paper (FRP), Herman’s topic was on the energy efficiencies that were realized at FRP. FRP was close to shutting down due to high operating cost. An investor came and asked if FRP could be run more efficient? The answer was yes. So a mind set was established and is in full swing today. Goal #1, cost reduction, FRP dropped 10% of the energy cost by understanding the energy usage and the fuels used to product the energy, those cost were controllable. Natural gas reduction projects have reduces usage from 945 dekatherms in 2007 to 524 dekatherms in 2009 while eliminating fuel oil and reducing coal by 62%. FRP’s need for coal will be eliminated by the end of 2009.
Substitution and conservation have enabled FRP to maintain a steady annual energy cost while increasing production by 11% despite rising energy cost over the last three years. Goal #2 was to have good stewardship and consumer demand. It was realized that the fossil fuel output could be reduces. With the focus on removing or replacing fossil fuel FRP carbon dioxide output went from 134,383 tons/year in 2001 to 45,755 tons/year in 2009. It is anticipated that in the year 2013 there will by 000,000 tons/year. New technologies may need to be developed, while more renewable energy must be made available to manufacturers. Governmental incentives, rather than mandates, can help companies survive while improving the environment. Goal #3, to substitute carbon neutral, renewal fuels. Some options were using internal biomass, residue from the mill. External biomass residue from forest products manufacturing such as tops from and smaller diameter wood from logging sites, and un-merchantable timber (wind, fire, or bug damaged).Another source is wood tar which is residue from manufacturing of liquid smoke. Red liquor was burned as fuel beginning May of 2009 due to alternative fuel-blending credit. Also the use of high-BTU pellets for reducing coal needs. Goal #4-conservation. In the past three years FRP has reduced the demand for steam production from 3.2 million dekatherms in 2007 to 2.5 dekatherms in 2009 that is a 28% reduction. Most of the conservation ideas came from the work force. FRP spent $15 million in capital cost which recovered $10 million in annual cost. In the electrical needs at FRP, their megawatt requirements decreased from 163,812 megawatts in 2007 to 156,193 in 2009 while production went up 11%. Some contributing factors were VFD's, pump replacements, lighting projects and machine production efficiencies. The following chart depicts the fossil fuel reductions over time,

1999 - Natural gas (974 million CF3) by 2013 it will be (0) 1999 - Coal (tons) 15,737 tons –by 2010 it will be (0) 1999 - fuel oil 1,475,505 gallons0 by 2006 it was (0) 1999 - total btus (million btus) burned 1,604,688- by 2013 it will be (0) 1999 - Co2 tons emitted 120,251-by 2013 it will be (0) 1999 - good tons of paper produced 124,496-by 2013 it will be 153,000 1999 - fossil fuel MMBTU's /ton 12.89- bi 2013 it will be (0) 1999 - Direct tons of Co2 emitted/ton .97- by 2013 it will be (0)
In 2009 the combined energy generation used at the mill was broke down like this; combined power is 59% carbon neutral and 37.71 renewal. In the process of steam at the plant, 74% is carbon neutral and renewable. With a success story like this Herman went on to identify some things we as wastewater plants can consider to reduce energy, for anaerobic digester you can reduce sludge and BOD to plant while replacing fossil fuel gas. Install fine bubble diffusers for better oxygen transfer and reduce energy cost. For heat recovery you can install sulfur burner heat recovery steam generator and put economizers in steam vents and stacks. Size pumps for proper pump curves and horse power ratings and replacing motors starters with VFD’s.

FRP proposed a biofuel plant, which will sit adjacent to the paper mill; it will provide steam and hot water to the facility while producing green diesel and paraffinic waxes. It is anticipated to be 70% efficient. This will also produce an additional revenue stream. Provide funding for fossil fuel use is everyone’s business; it is everyone’s business to develop a national energy policy with a vision for alternative fuels, while ensuring proper use of our limited biomass resources. One other project that was presented by Dale Hedkey from S.E.H. did the design and coordinated the replacement of steam turbines with electrical driven VFD’s. This project was part of the overall capital cost and savings that FRP mentioned above.

Chairman Katie introduced the next presenter Sue Wojtkiewicz from S.E.H. Sue’s topic was on DNR code updates. Code changes to the ground water rule were prompted by disinfection byproduct rule, ground water rule and short term revisions to the lead & copper rule. Other triggering points are the Great Lakes compact, political movement inside the beltline, safe drinking water act and let us not forget the code changes are tied to the proposed increase in beer tax, water is a key component of beer. Why must we comply? If we don’t, Minnesota gets Lake Superior and we get # 4 back, the Great Lakes Compact is nullified and Wisconsin could lose primacy to the EPA. Sue briefly went over the NR 809,810, and 811 codes. NR 809 focuses on sanitary surveys of ground water systems which will include a more comprehensive evaluation of construction, maintenance, and operations. NR 810 focuses on O & M of systems. One significant item is the mandatory disinfection. Maintain a normal operating system pressure between 35-100 psi. Maintenance will include Valves, hydrants, dead-end main flushing, well pumps, generation equipment and master meters. Routine inspection of tanks and towers with 5 year interior inspections. More focus on unused wells to get them abandoned. Finally a strong push to develop a cross connection control plan. NR 811 focuses on design requirements for community water systems. This code I focuses on pumping equipment, chemical addition, distribution systems, pumping stations and buildings.

Chairman Katie introduced the next presenter Ed Henzel from WRWA. Ed’s topic was on winter operations of W & WW systems. Just a few items that Ed stresses for winter operations of a water system include, draining hydrants, marking hydrants, furnace checks at well buildings, and check water tower controls. Be sure to check that you have enough frost bottoms for meters should they become frozen as well as chambers. What about home foreclosures, is the water off at the curb?

Winter chores at WW TP would be to update lab procedures (QCM), quality control tests and inventory your lab inventory. This is a good time to look at budgeting for the upcoming year. Look at energy efficiency and energy cost. Look at operator’s certifications/ hours and training needed. Get rid of excess junk, replace chemical lines, air lines, control panel lights, Vehicle maintenance, and finally update your emergence equipment list. WRWA has a complete list on their web site.
Sludge problems? Who you gonna call?

SLUDGE BUSTERS

FLYGT N-PUMPS AND PC PUMPS
THE MOST RELIABLE AND COST EFFECTIVE SOLUTION FOR PUMPING SLUDGE.

Now, ITT Flygt Corporation, the world leader in pumping and mixing, offers wastewater treatment plants an unparalleled combination of sludge-busting technologies, service and support. Flygt’s arsenal of sludge busters features our extraordinary N-Pump, with its patented N-impeller and a clog-eliminating, high-efficiency, open backswept design that makes it best for overall sludge handling. Flygt offers a new Progressing Cavity (PC) pump and macerator for heavier sludge. And to ensure maximum process efficiency in the most challenging situations, Flygt mixers and aerators lead the way.

Most important of all, you can count on your local, fully staffed Flygt office for the equipment, engineering and support that are suited best to your particular needs. Call the Flygt sludge busters. We’re always here for you.

Contact Mike Borgeois at 262-544-5875. ITT Flygt Corporation, N27 W23291 Roundy Drive, Pewaukee, WI 53072.

Engineered for life
Chairman Katie introduced the final presenter, Roccy Raymond from S.E.H. whose topic was on the CMOM program for the City of Hayward. Why have a CMOM program? It helps you be proactive in managing and operating a collective system. It gives you written proof maintenance is being done, it spells out procedures for future personnel, and it will eventually be written in your WPDES permit. It isn’t hard since you have most of the elements in place. This document should always be a work in progress. The City of Hayward’s collection system has 34 miles of sanitary sewer, 500 manholes, 11 lift stations. The treatment plant has 2 aerated lagoons that discharge to seepage cells or spray irrigation. The CMOM program should be visited frequently to update and make sure it is realistic. The CMOM plan should help you prioritize maintenance along with identify I/I problem areas. The plan also gives you more teeth when referencing the sewer use ordinance. The plan can give you great insight when planning new development areas. A CMOM plan can lay out the organizational structure and the training needed to keep all staff up to speed. The plan provides public information and education and outlines the legal authority procedures. The plan is used for operation and maintenance as well as inventory and parts tracking. Do not forget that a good plan should have a good mapping system. A GIS system can link detailed information for system components including: installs, repair dates, pipe material, diameter, length, slope, flow, televising, elevations, and maintenance history. The CMOM plan will indentify how to handle emergence response procedure regardless if this is a routine overflow or a catastrophic emergency. It will show a response flow chart and personnel needed and contact information. This might sound like a lot of information but the better organized you are the better prepared you will be to do your job. This is all the things incorporated in the City of Hayward’s CMOM>

### 2010 Clarifier Due Dates

<table>
<thead>
<tr>
<th>Issue</th>
<th>Submittal Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 2010</td>
<td>March 5</td>
</tr>
<tr>
<td>June 2010</td>
<td>May 7</td>
</tr>
<tr>
<td>September 2010</td>
<td>August 6</td>
</tr>
<tr>
<td>December 2010</td>
<td>November 5</td>
</tr>
</tbody>
</table>

For more information contact:

**www.mulcahyshaw.com**

**Mulcahy/Shaw Water**
Mequon, WI  •  (262) 241-1199  
info@mulcahyshaw.com
Job Opening

The Village of Plover is seeking qualified candidates for the position of Wastewater System Operator. This is a bargaining unit position that carries out day to day operation and maintenance of the Wastewater Treatment Facility and wastewater collection system and lift stations.

An Associate Degree, or equivalent, in related course work is required. One year experience in a wastewater utility is preferred. DNR Grade 2 wastewater certification in subclasses C, E, G, I, & J preferred. Combinations of education and experience with wastewater operations, mechanical or electrical maintenance, environmental testing, and construction, which provide the necessary skills and abilities to perform the wide range of job duties, may be considered.

Job description, wage rate, and benefits are available upon request. More information and job application may be found at www.ploverwi.gov. Applications will be accepted until close of business February 19, 2010. Contact Rich Boden, rboden@ploverwi.gov or Lyle Lutz, llutz@ploverwi.gov, 715 345-5259, for more information. Submit resume and completed application to Rich Boden, Plover Wastewater Utility, PO Box 37, Plover, WI, 54467.

Brain Teasers

SUBJECT: BIOLOGICAL NITROGEN REMOVAL

Introductory:

The process of denitrification of wastewater takes place under ____________ conditions.

A. Extremely acidic  
B. Aerobic  
C. Anaerobic  
D. Extremely caustic

Advanced:

What is the approximate amount of alkalinity used to oxidize 1 mg. of nitrogen during the process of nitrification?

A. 3.14 mg. CaCO₃  
B. 4.57 mg. CaCO₃  
C. 5.40 CaCO₃  
D. 7.14 mg. CaCO₃

Foth

Forward Thinking.

When Wisconsin Rapids needed additional wastewater treatment capacity to support future industrial growth, they contacted long-term partner Foth. Our updated name reflects our heritage, and provides a platform for thinking about the future in ways that can help grow and sustain your local community. For all your wastewater and municipal engineering needs, contact Foth.
February 2010
Successful Operations through Process Control
By Jack Saltes, Wastewater Operations Engineer
Department of Natural Resources

Maintenance Activities is the fourth of the eight elements of a Capacity, Management, Operation & Maintenance (CMOM) Program.

Collection system O&M is the essential element of a CMOM program. Just like your car, a collection system will eventually fail to perform without regular maintenance. Like a well-built four-legged stool, a comprehensive collection system O&M program includes the (1) mainline, (2) manholes, (3) lift stations AND (4) private laterals.

What O&M activities should be done? Studies have shown that optimizing collection system performance depends on specific maintenance tasks and frequencies. You should summarize and review your maintenance activities each year.

As asked for in the Compliance Maintenance Annual Report (CMAR): “what sewer system operation and maintenance (O&M) activities do you do?” Check those maintenance tasks you have done in the last twelve months (calendar year):

- Cleaning (what % of system?)
- Root Removal (what % of system?)
- Flow Monitoring (what % of system?)
- Sewer Line Televising (what % of system?)
- Manhole Inspections (what % of system?)
- Manhole Rehabilitation (what % of manholes were rehabilitated?)
- Mainline Rehabilitation (what % of system?)
- Private Sewer Inspections (what % of system?)
- Private Sewer I/I Removal (what % of system?)
- Lift Station O&M (how many lift stations was there major maintenance or repairs or upgrading done for the year?)

Since every collection system is unique, work to find out which maintenance activities and frequencies will give you the best value for the O&M dollar spent. A successful O&M program optimizes the performance of the collection system and over time reduces the frequency of (or eliminates) overflows, basement back-ups, complaints, sewer pipe failures, lift station failures and peak flows.

Trend graphs associated with these performance indicators can be viewed by clicking the graph buttons in your eCMAR.
Fieldbus

A modular approach to Fieldbus physical layer components from Phoenix Contact provides infrastructure connection between the process Fieldbus controller and field devices. This new concept combines industrial electronic packaging and data communications competencies to deliver high-value Fieldbus infrastructure solution.

nanoLine

nanoLine is a small programmable controller/relay with unique features such as Ethernet connectivity, removable operator display and easy flow-chart or RRL programming. The modular design allows for connections of up to 3 I/O expansion modules (RS 232, RS485, USB). It allows for easy data exchange with Modbus TCP or Modbus RTU master devices.

Managed Ethernet Switch

Economical managed Ethernet switch supporting SNMP, RSTP, Web Based Management capability are standard features. This Switch supports applications where Multicast traffic is a concern (like Ethernet I/P), a “-E” version is available with default enabled IGMP Snooping.

SFN Switch

The SFN family of unmanaged Ethernet switches provide low cost, fully industrially hardened, entry-level switch functions with 5 or 8 ports (10/100 Mbps) in a narrow housing width. Complete range of 100 Mbps glass fiber configurations to support 1 or 2 ports with SC or ST style connectors. The new SFNT group of Ethernet switches are for applications where extreme temperature conditions (-40°C to 75°C) exist.

Ethernet Modem

The Ethernet modem makes remote servicing and diagnostics of distant ethernet network devices as simple as dialing into an Internet connection. Ethernet control systems and operation panels anywhere in the world can be controlled remotely via a modem and a telephone line.

UT Terminal Blocks

UT screw connection terminal blocks are designed in a compact profile for easy, maintenance-free handling. UT terminal blocks have a dual bridging channel for power distribution (chain, skip, step-down). Manufactured with nickel and tin plated copper alloy components to protect against corrosion and eliminate thermal expansion issues.

IEEE 802.11 WLAN radios are ideal for high speed data networks. The high power variant of the product family provides the extra power needed in long range application while maintaining the highest levels of security and can easily form into Mesh networks. The WLAN technology opens the door to many different bandwidth intensive applications such as video surveillance, remote monitoring and control and mobile networking.

WLAN Radio

GSM GPRS Modem

The GSM GPRS Modem is ideal for remote monitoring of alarm contact and data acquisition. The GSM GPRS modem is approved to be used on AT&T network and can easily interface with RS232 serial connections or can be used standalone to monitor digital alarm contacts. Phoenix Contact has partnered with Diversenet to allow for easy activation of the modem’s SIM card on the GSM GPRS cellular network.

1220 Washington Ave., Cedarburg, WI 53012 800-558-7033
818 Lambeau St., Green Bay WI 800-242-6303
www.aa-electric.com
and with a good CMOM Program, the graphs should show a downward trend over time. If the trend is increasing, this should raise questions as to why the increasing trend is occurring and perhaps refocus your maintenance activities or point to the need for rehabilitation work. View your trend graphs every year to assess your sewer system performance. In the example below, basement backups are being reduced as a result of focused O&M efforts in areas where basement backups were problematic.

CMOM Program and collection system O&M references can be found on the last page of the Wisconsin CMOM Booklet:

http://www.dnr.state.wi.us/org/water/wm/ww/cmar/CMOM.htm
Attention All Golfers

Annual Golf Outing
Refreshments – Food – Prizes
Monday, June 14th 2010
Tee-Off: 10:00am Shotgun Start

The Golf Club at Camelot
W192 Hwy 67
Lomira, WI 53048

Cost: $58.00 per person includes:
• Lunch (Burgers, Brat, Hot dog or Cheeseburger)
• Dinner (Buffet, two choices of meat, We promise – NO RIBS)
• 18 holes of golf with cart.

Sponsor Fee: $75.00 Required per firm, any non-municipal operator attending the event.
(This goes to door prizes and helps offset the cost of the event)
• Donated prizes encouraged as well.

NO REFUNDS

<table>
<thead>
<tr>
<th>NAME</th>
<th>OPERATOR OR MANUFACTURER</th>
<th>E-MAIL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

QTY _______ x $58.00 = $______________

Sponsor Fee - $75.00

TOTAL CHECK AMT: $__________________

Make Checks payable to: Tom Mulcahy

Mail to:
Mulcahy/Shaw Water, Inc
10144 N Port Washington Rd
Mequon, WI 53092
Attn: Tom Mulcahy

Questions: tmulcahy@mulcahyshaw.com or 262-241-1199
Spring Biosolids Symposium

Mark your calendars for the 28th Annual Spring Biosolids Symposium. The Symposium will be held on Tuesday, March 9, 2010. The program runs from 8:20 a.m. to 3:30 p.m. The Symposium is returning to the Stevens Point Holiday Inn.

Another excellent program is in store with national speakers from US EPA and Penn State University. Regulars Fred Hegeman, DNR and Dick Wolowski, UWEX are back, along with presentations on various state issues and the evolution of nutrient management regulation and implementation. Connie Wilson is also back to moderate the ever popular morning speaker panel Q&A.

Septage haulers will be especially interested in a session on EPA Septage Audits by John Colletti of the US EPA and a corresponding Wisconsin hauler septage audit case history.

Make your plans now to attend the nationally acclaimed Spring Biosolids Symposium on Tuesday, March 9 at the Stevens Point Holiday Inn.

2010 Spring Biosolids Symposium

Fred Hegeman, WDNR - Land Application Update

DNR Staff - Site Request Expectations

Steve Warrner, WDNR - Electronic Site Requests

John Colletti, US EPA - EPA Septage Audits
  Wisconsin Case Study

Rick Stehower, Penn State - P Mgt. Issues in PA

Connie Wilson, Burlington WWTF – Morning Speaker Panel

Dick Wolkowski, UWEX - Nutrient Management

Alan Grooms, Madison Metro - Biosolid P Management

Brad Holtz, Brown Co. LCD, Shane Griffith, UW, & Ana Tapsieva, UW – Biosolid Program Alternatives Panel

GPM LLC
GENERAL PUMP MODS
LIFT STATION, WWTP PUMP
AND DRIVE SHAFT EXPERTS
48 YEARS
QUALITY AFTER MARKET
PUMPS AND PARTS
CALL FOR INFORMATION OR FREE QUOTES
3421 37TH STREET SOUTH
WISCONSIN RAPIDS, WI 54494
CELL (715) 697-8211  FAX (715) 423-4060
Single-use applications range from storm water run-off storage, equalization and trickling filters to sludge digestion and sludge storage/mixing. Suitable for total system applications, AQUA-STORE tanks are used in Sequential Batch Reactor (SBR) systems, package treatment plants, anaerobic sludge digestion systems and conventional large volume treatment.
Implementing a Cost Effective Energy Action Plan

By Ray Grosch
rgrosch@intellisys-is.com

Energy Management is becoming an important component of every wastewater facility management system. EPA estimates that 28% of wastewater budgets are attributed to energy costs. Energy costs are predicted to increase significantly in the future. Concerns about climate change and sustainability must be factored into the design, operation and maintenance of wastewater facilities today. Increasingly stringent discharge requirements may require additional steps in the treatment process with increased energy requirements.

For all of these reasons every wastewater facility manager should be implementing and energy management action plan. EPA and Focus on Energy suggest that significant energy savings can be achieved without the need for major capital expenditures simply by implementing an energy management plan.

Focus on Energy offers a 12 step planning process for energy management. The first 6 steps can be implemented with minimal cost. In fact any cost in implementing these first steps is normally recovered in savings within one year.

The first 6 Focus on Energy steps include:
1. Energy Audit staff meeting with review recent energy bills and rate structure
2. Real Time Energy Monitoring & Reporting
3. Energy Education for Facility Staff
4. Electric Peak Reduction
5. Manage Electric Rate Structure
6. Idle or Turn Off Equipment

Steps 1, 2 and 3 can be accomplished with the installation of an automated facility energy audit system such as the EnergyVIEW automated audit system. A properly configured audit system will provide the tools need to help accomplish the steps and document progress.

For electrical energy it is crucial to fully understand the rate structure used to bill the facilities. If time-of-day and demand charges are being applied to your utility bill an energy management system will provide the data need to manage your energy use. Peter Drucker, the famous management consultant was quoted in stating, “You cannot manage what you do not measure”. This is true
about electrical energy bill with time-of-day and demand charges. Data must be collected in the same manner that the billing utility collects data. This will allow alarming when peak demand values are about to be exceeded.

Small wastewater facilities can simply monitor the total energy use at the facility. Larger facilities will want to monitor the entire facility as well as submetering each major process area. Natural gas, propane, gasoline, diesel fuels as well as green energy from wind, solar and biogas should be managed in the same application so that a complete facility energy audit report can be automatically produced daily and monthly.

Focus on Energy offers cost sharing for energy saving audits. An EnergyVIEW application may qualify for up to 50% cost sharing with a maximum of grant of $5,000.00.

For additional information on a simple solution for real-time monitoring and Energy Management contact IntelliSys Information Systems. (800 347-9977).

---

**FOR SALE:**

1990 Ag Chem biosolids applicator with tool bar/injectors.

VIN# TG40591

Engine shot but rest of unit in fair to good condition.

Installed re-built Funk transmission in 2006.

Tires in good condition.

Great unit for cannibalization of parts.

Send me an offer!

Contact:

Harry Mathos
City of Beloit WPCF
555 Willowbrook Road
Beloit, WI 53511
608 364 5721
mathosh@ci.beloit.wi.us
North Central Regional WWOA Meeting
September 16, 2009
Village of Whiting

The summer meeting of the North Central Region of the WWOA was held on September 16, 2009. The meeting was hosted by the Village of Whiting. The meeting was held at the Blue Top Supper Club in Stevens Point, WI. There were 34 people in attendance with 8 vendor displays.

Matt Saloun opened the meeting at 8:30 am. He welcomed those in attendance and introduced Nathan Cassity, AECOM, the first speaker of the day.

Nathan was the lead designer for the Whiting WWTF upgrade project. He reviewed the Whiting WWTF history and discussed the issues that lead to the decision to upgrade the WWTF. He discussed the design issues and challenges that the Whiting faces while planning and constructing the upgrade.

Nathan detailed Whiting's commitment to incorporate many energy saving and environmentally friendly aspects into the project. Features of the project included solar hot water...
IT’S TIME TO THINK ABOUT SERVICE IN A NEW WAY.

Crane Engineering’s Total LifeCycle Services provide more ways to reduce operating costs.

With over 70 years servicing wastewater treatment plants in Wisconsin, Crane Engineering has the experience and know-how to help lower operating costs. Crane Engineering’s Total Lifecycle Services will help you maximize plant performance and reduce operating costs over the life of your equipment.

This includes:

- New Equipment Installation and Start Up
- Preventative Maintenance Programs
- Troubleshoot Pumping and Control Systems
- 24/7 Repair of Pumps, Motors, Seals, Instrumentation and more
- Refurbish Existing Equipment
- Retrofits – Lift Station, Screens, Clarifier, Grit System, Sludge Press, Heat Exchanger
- Failure and Vibration Analysis
- Operations and Equipment Training
- One-Year Warranty to OEM Specifications

Call 920-733-4425 or go to craneengineering.net
heat, extensive use of sky lights, re-using existing structures, and an effluent water re-use system.

The next speaker was Mark Kane from Altronex. He gave a brief overview of the instrumentation and telemetry upgrades at the WWTF. He went on to focus on lift station. Mark outlined general best practices regarding lift station control and design. He discussed control strategies, sophistication, and specific equipment used in lift station controls.

After a short break, Don Voigt, Engineered Equipment Integration, gave a lively presentation on how to identify energy wasting equipment in the Utility. He discussed how to evaluate pumps and motors and how to compare them to design criteria and or benchmarks to determine their relative energy efficiency. Don stressed the importance of looking at the energy billing statements to understand and use the information on them to the Utility’s advantage. He also passed around several pieces of equipment that are used to evaluate energy use.

Eric Donaldson, DNR Area Engineer, followed with the DNR update. He stated that the EPA objected to the chloride variance procedures that the DNR has been using when re-issuing permits. The procedures are now under review. He said that the Thermal Standard is moving forward and is expected to be implemented sometime in 2010. The initial implementation will probably be to monitor effluent temperature.

Lyle Lutz called the business meeting to order.

1. He thanked everyone for attending today’s meeting. He thanked the speakers for their presentations.

2. He thanked Matt Saloun, Nic Schmeiser, and the Village of Whiting for hosting the meeting.

3. Bloom announced the results of the Steering Committee election. Boden and Dickrell were re-elected to three-year terms.

4. Lutz called for any questions/comments/ or changes to meeting minutes from the April regional meeting as posted on the WWOA website. Hearing none, the minutes were accepted as printed.

5. Treasurer’s report was read and accepted.

6. The next meeting will be hosted by Merrill in January. No one has volunteered to host meeting in 2010. Please consider hosting an upcoming meeting.
7. WWOA annual conference will be October 6th – 9th at the KI Conference Center Green Bay. Lutz outlined several activities that will take place at the conference.

8. Tuition reimbursements- Six for $150 each academic year, credit courses or advanced non-credit seminars. Contact Wade Peterson for more information.

9. Membership for all non-members is encouraged. Benefits include discounted rates to annual convention and training opportunities, student scholarships, tuition aides, the Clarifier Magazine, the Membership Directory, and eligibility for WWOA awards.

10. Nomination forms for the Regional operator of the year awards are available on the WWOA website. The 2009 recipient has been selected, but keep the award in mind for next year.

11. Lutz announced that the Village of Spencer Wastewater Laboratory was received the DNR Laboratory of the Year Award and congratulated Chris Helgestad and the rest of the staff from Spencer.

12. Lutz reminded operators that the Steering Committee is looking for suggestions for topic at future meetings. Contact any steering committee member with ideas for topics.

13. There was no new business. The meeting was adjourned. Lunch was served.

Gary Hansen, AECOM, gave a presentation on startup of equipment and processes at Whiting. Gary shared his insight on starting up and fine-tuning processes. He also discussed O&M manuals and other startup training and documentation.

Matt Saloun concluded the program with a heartfelt presentation on getting through an upgrade project from the operators’ perspective. Matt shared the hopes and frustrations he experienced as construction progressed. Everyone in attendance identified with Matt’s experience. The meeting adjourned with Matt and Nic giving tours of the Whiting WWTF facility.

Submitted by Rich Boden, Secretary
North Central Region
North Central Region
Steering Committee Meeting
Mosinee, WI
November 17, 2009

Attendees: Matt Saloun, Terry Vanden Heuval, Ken Bloom, Ron Dickrell, Lyle Lutz.

Lutz called the meeting to order at 12:30 pm. The steering committee will remain the same for 2010 as in 2009.

2010 Officer Assignments are as follows:

Lyle Lutz – Chairman
Matt Saloun – Vice Chairman
Ken Bloom – Treasurer
Rich Boden – Secretary

There was no old business to discuss

It was announced that the North Central Region was awarded with the Region of the Year Award at the annual WWOA conference in Green Bay. The Plaque was on site for all to see and it was decided that it should be on display at all of the 2010 NC region meetings for all to see.

Terry reported that the Feb. 2nd meeting in Merrill was almost all set to go. He was going to contact a representative for the DNR to attend and give their update. Terry was also going to work with Rich to set up the registration and meeting schedule.

Future meeting sites were discussed. Lutz reported that Northern Lakes in Crandon would commit to having the fall meeting in late August or early September. The spring meeting needed to be determined and Lutz was going to contact Spencer as they have expressed some interest in holding another meeting. Wausau also mentioned they would be available for a future meeting so we would try to get them in for the 2011 meetings. NCL has also contacted some of the steering comm. members that anytime we needed a meeting location that they would be available.

**PROCESS EQUIPMENT REPAIR SERVICES – Our name says it all.**

Our team provides equipment repair and rebuild services to the water and wastewater treatment industry. With over 30 years of experience, our staff has installed, rebuilt and/or repaired the following equipment:

- Mechanical Bar Screens
- Conveyors
- Grit Removal Systems
- Clarifiers
- Aeration Equipment
- Trickling Filters
- Digesters
- Flocculators
- Sand Filters
- Screw Pumps
- Airlift Pumps
- Trash Rakes
- Traveling Water Screens
- Floatation Thickeners

We offer professional guaranteed service. We will provide a quotation including equipment requirements and a firm price for the project.

Our customized services allow you the option of having our trained staff work with your personnel or we will provide total turnkey service to complete your equipment installation, repair, or rebuild needs on a timely, competitively priced basis.

**Contact Process Equipment Repair Services today, for all your equipment needs!**

Phone 262-629-1059 • Cell 414-412-4403 • Fax 262-629-1059
Email PERSLaMont@aol.com
5991 Division Rd. • West Bend, WI 53095
“SERVICE IS OUR COMMITMENT”

Call Flygt for all your pumping needs.

- SALES
- SERVICE
- RENTAL
- RETROFIT

Flygt provides experienced skilled technicians to take care of you 24 hours a day. With our Mobile Field Service Trucks and Equipment, we can provide on-site preventative, corrective and start up services. You will receive top quality, professional service and only factory direct genuine Flygt parts.

We’re just a phone call away.

FIELD SERVICE
Joel Smith  MOBILE  414-477-9795
Joel Smith  PAGER  242-775-0104
Rick Kutzer  MOBILE  262-951-6327
Rick Kutzer  PAGER  262-775-0106

ITT Flygt Corporation  N27 W23291 Roundy Drive, Pewaukee, WI 53072  (262) 544-5875
The NC Region was unable to secure a team for 2009 Operators Competition and options were discussed to raise awareness and interest in the event for 2010. Some region members have already expressed their interest in getting involved so it looks like we should be able to secure a team early on this upcoming year. Another option discussed was to supply $25 gift certificates/cards to each Operator Competition team member. All were in favor of the idea as this would encourage region members to become involved. Ken and Lyle were also going to share their experiences from WEFTEC and the National Operators Challenge during the business meeting to show the potentials of competing.

Ideas from Annual WWOA convention meeting were conveyed by Lutz. Rich has been working on the website for the Region and anything that members would like to have displayed could be submitted to him for addition. Member involvement was also brought up. Ideas for getting Industries in host communities involved were mentioned.

Ken presented the financial statement and also noted the region has changed financial institutions to Connexus credit union that also provided new checks free of charge.

Ideas for future meeting topics were discussed. This was also another area where the regional members could be surveyed to find out their interests. Options of how to obtain member opinions will be reviewed.

The meeting was adjourned at 1:45 pm.

**WWOA Conference Schedule**

<table>
<thead>
<tr>
<th>Year</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>Kalahari Resort, WI Dells</td>
</tr>
<tr>
<td>2011</td>
<td>La Crosse Civic Center, La Crosse</td>
</tr>
<tr>
<td>2012</td>
<td>Kalahari Resort, WI Dells</td>
</tr>
</tbody>
</table>

**Government Affairs Seminar**

**February 23, 2010**  
**Marriott Madison West, 1313 John Q. Hammons Drive, Middleton, WI**  

**8:00 am**  
Registration

**8:25 am**  
Welcome/Opening Remarks  
*Gil Hantzsch*

**Session Moderator:** *Brandon Koltz*

**8:30 am**  
USEPA Perspective/Initiatives  
*Jim Hanlon*

**9:15 am**  
Wisconsin Perspective on National Issues  
*Kevin Shafer*

**9:50 am**  
Panel Discussion/Q&A

**10:00 am**  
Morning Break

---

**Reliable Mechanical Seal Repair**

**IT’S ALL WE DO**

**ALL MAKES ALL MODELS**

**QUALITY WORKMANSHIP**  **FAST TURN AROUND**  **GUARANTEED SAVINGS**

**EXCELLENT PRICES ON REPLACEMENT SEALS**

**CALL FOR INFORMATION OR FREE QUOTE**

**PH 920 582-0464**  **FAX 920 582-0478**  **6268 COUNTY ROAD M**  **WINNECONNE, WI 54986**

---

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

**PROTECT Your Assets.**  **PRIORITIZE Your Spending.**  **PLAN Your Future.**

Municipal Economics & Planning specializes in helping communities realize their vision for high-quality infrastructure and services by providing sound fiscal, economic, and planning advice. Whether you need specialized assistance with a particular project, support for ongoing services, or if you are faced with a new or out-of-the-ordinary issue or opportunity—we can help!

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

**Municipal Economics & Planning**

**Economic, Fiscal & Planning Consultants for Local Governments**

**Waukesha 262.542.5733 • Kenosha 262.953.2650 • Madison 608.819.2600**

**Visit us on the web at: www.ruekert-mielke.com/MEP**
Session Moderator: Paul Kent

10:15 am  Nutrient Overview in Wisconsin: NR 151, Trading and Regulations
Paul Kent

10:30 am  Phosphorus Regulation Update
Dave Taylor

10:50 am  Wisconsin TMDLs
Bob Masnado

11:10 am  Effluent Trading Update
Robin Nuffeler

11:30 am  Real World Experiences with Meeting Low Effluent Phosphorus Limits
Glen Daigger

11:50 am  Panel Discussion/Q&A

Session Moderator: Gil Hantzsch

1:00 pm  Viruses in Drinking Water
Mark Borchardt

1:35 pm  Stimulus Funding – DNR Perspective
Bernie Robertson

1:55 am  Stimulus Funding - POTW Perspective
Peter McCarthy

2:15 pm  Afternoon Break

Session Moderator: Bill Design

1:00 pm  Stormwater – Compliance, Municipal Perspective
Sue Olson

3:00 pm  DNR Staffing and Organization
Ken Johnson

3:15 pm  DNR Update
Ken Johnson

3:45 pm  Seminar Ends – See you next year on February 24, 2011!
Kalahari Resort and Waterpark Hotel Reservation Form

All reservations must be received by September 18, 2010. Please mention you will be attending the Wisconsin Wastewater Operators Association conference to receive group rate. Reservation requests received after September 18, 2010 are subject to hotel availability. Block is from October 19-22, 2010. To make reservations, complete the form below and mail or fax it to the Kalahari Resort.

Name: _____________________________________________

Address: ___________________________________________

City, State, Zip: ______________________________________

Phone: ______________________________________________

Arrival Date: ___________ Departure Date: _____________

Email address: _________________________________________

Type of Room: Hut ___________ Lodge ___________

Number of Adults: ___________ Kids ___________

($20 per additional person over 4 people)

Only guests that have 5 or 6 people can request a room that will have 2 queen beds with pullout sofa sleeper.

To guarantee your reservation, enclose a check for the first night room and tax or provide a credit card number in the space below. If paying by Purchase Order, the Purchase Order must accompany this form. This Kalahari Resort does not accept credit at check in for payment. All credit cards used will be charged immediately for the first night's lodging and tax. Please print credit card information above. A $25 fee applies to all cancellations. If you cancel your reservation 72 hours or less before the date of arrival, you forfeit your deposit.

Payment Info: Check (in advance): _______ Purchase Order: _______ (Mark One)

Credit Card (Put Information Below): _______

Card Type:

Mastercard: __________ Visa: __________ American Express: __________ Discover: __________

Credit Card Number: ________________________________

Exp Date: __________________

Name on Card: ________________________________

Tax Exempt: Yes ______ No ______, if you mark yes, a tax exempt certificate must accompany this form.

**Guest Room Rates:**

Hut $99

Lodge $109

Additional Person $20

(more than 4 people)

Tax 11%

**Guest Room Styles:**

Hut: 2 Queen Beds

Lodge: 1 King Bed w/ Sofa sleeper

Check In Time: 4:00pm

Check out Time: 11:00am

Mail form to:

Reservations Department
Kalahari Resort & Convention Center
P. O. Box 590
Wisconsin Dells, WI 53965

Reservations: (877) 325-2427
Fax: (608) 254-6118

To make reservations online:

(You must pay by credit card and not be tax exempt to use this option)

Visit us at www.KalahariResorts.com

1. Click on Wisconsin Dells, WI

2. Click on RESERVE NOW

3. Click on GROUPS

4. Your group ID: 3868

5. Your password: 238
Bruce Bartel, President
Green Bay MSD
P.O. Box 19015
Green Bay, WI 54307-9015
Work: 920-438-1006
Fax: 920-438-3006
Home: 920-246-9752
bbartel@gbmsd.org

Dave Carlson, President Elect
Fond du Lac WPCF
700 Doty St.
Fond du Lac, WI 54935
Work: 920-322-3664
Fax: 920-322-3661
Home: 920-251-9859
dcarlson@ci.fond-du-lac.wi.us

Randy Thater, Vice President
Waukesha WWTP
600 Sentry Drive
Waukesha, WI 53186
Work: 262-524-3631
Fax: 262-524-3632
Home: 262-549-4059
rthater@ci.waukesha.wi.us

John Bond, Past President
Roberts WWTP
107 East Maple Street
Roberts, WI 54023
Work: 715-749-3175
Fax: 715-749-3889
Home: 715-796-5263
rptswwtp@baldwin-telecom.net

Wade Peterson, Director (10)
St. St. Joseph S.D. #1
W3514 McClintock Rd.
Minden, WI 54644
Work: 608-397-0251
Home: 608-786-3329
stjsd1@centurytel.net

Dennis Egge, Director (11)
1705 Meadowlark Drive
Janesville, WI 53546
Work: 608-752-4573
deggman@sbcglobal.net

Dale Doerr, Director (11)
Sheboygan Regional WWTP
3333 Lakeshore Drive
Sheboygan, WI 53081
Work: 920-459-3464
Fax: 920-459-3463
Cell: 920-946-2716
dale.doerr@sheboyganwwtp.com

Kelly Zimmer, Director (11)
MSA Professional Services
S6648 Maple Hill Road
Rock Springs, WI 53951
Cell: 608-963-7385
kJimmer@msa-ps.com

Richard McKee, Executive Secretary
WWOA
24184 Fawn Meadow Lane
Richland Center, WI 53581
Fax: 608-647-4230
Home: 608-513-9362
rdmckee@wwoa.org

2010 Convention Contacts
Local Arrangements
Kelly Zimmer 608-963-7385
Technical Program
Randy Thater 262-524-3631
Guest Program
Kelly Zimmer 608-963-7385

Clarifier Staff
Jean Van Sistine 920-438-1057
jeansistine@gbmsd.org
Jon Butt 414-755-1149
jon.butt@symbiontonline.com

Webmaster: Scott Thompson
e-mail: athompson001@new.rr.com