

CENTRAL PENNSYLVANIA WATER QUALITY ASSOCIATION

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NEWSLETTER
www.cpwqa.org

President - Bill Weaver
Editor - Todd Marshall

EASTERN SNYDER COUNTY REGIONAL AUTHORITY

September of last year the CPWQA had the privilege of touring the Eastern Snyder County Regional Authority's Wastewater Facility. With the passage of the Clean Water Act in 1972, several municipalities in Eastern Snyder County were contemplating the construction of a regional treatment facility to provide the wastewater treatment needs of the region for the next 15 years. Selinsgrove Borough had constructed and operated a trickling filter plant since 1947 which treated only wastewater generated by the Borough of Selinsgrove, and a state health care facility in neighboring Penn Township and discharged into Penns Creek. Two municipalities situated to the north of Selinsgrove, Shamokin Dam Borough, and the village of



Hummels Wharf, an unincorporated village in Monroe Township, were each served by their own respective primary treatment

facilities which discharged into the Susquehanna River. Municipal officials from all of the political entities executed a 1972 Sewage Treatment Plant Agreement which laid the groundwork for the planning and design of a regional wastewater facility in order to obtain the necessary priority funding points for a federal Construction Grant. Since all of the other municipalities had existing outstanding debt,

it was agreed that Selinsgrove Borough would take the lead on behalf of the other municipalities and attempt to secure the necessary funding and construction grant to move the project to reality. All of the parties signed an inter-



municipal sewage service agreement in 1977 which enabled the Selinsgrove Municipal Authority to apply for a federal construction grant of \$12,000,000 and a Sewer revenue Bond Issue totaling \$4,650,000. Bids were received in 1978 after funding was secured, and construction began on the regional system in early 1979. The construction project consisted of a secondary treatment facility comprised of primary clarification and sludge pumping, complete mix conventional activated sludge with mechanical surface aerators, secondary clarification with rapid sludge removal, waste sludge pumping, chlorination with gaseous chlorine, two stage high rate anaerobic sludge digestion, sludge dewatering by two one meter continuous belt filter presses, 7.4 miles of intercepting sewers and

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Important Dates 2009

June 7 - 10 PennTec 2009 (Lancaster, PA)
June 19 Awards Meeting/Picnic, Rich Valley Golf Course - Mechanicsburg, PA
July 17 Board Meeting
August 7 Go With the Flow Golf Tournament, 7:30 am (Shotgun Start) Fairview Golf Course

September 11 Plant Tour (To Be Determined)
October 10 - 14 WEFTEC 2009 - Orlando, FL
November 4 Trade Fair and Training Expo, Harrisburg, PA - Harrisburg/Hershey Sheraton
November 20 Board Meeting

**All Board Meetings are held at the Derry Township Municipal Authority and begin at 11:30 am.*

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It is finally happening we are upgrading our web page. Come June 1st we hope to have everything finalized. On the new web page you'll find forms to sign up for upcoming events as well as the form for joining this most upstanding organization. You will also find the most current newsletter as well as past copies and photo's from previous events. We certainly want any suggestions you may have to continue to upgrade your web page.

The Annual Awards Picnic is being held right at the Rich Valley Golf Course at 227 Rich Valley Road in Mechanicsburg on June the 19th! Bob White wanted a reminder to be inserted in this newsletter so consider yourself to be reminded. For some other reason some of the Board Members thought it was important for everyone to know the menu and Bob has informed given me that information to pass on! The Appetizer will consist of a Chip & Bologna and Cracker Appetizer Plate followed by the Main Course of a 1/2 Roasted Chicken and Pork BBQ Sandwiches accompanied by Fruit, Pasta and Garden Salads. Finally the Desert will consist of wonderfully delicious Cookies and Brownies. So make sure you sign up and come on down to the Annual Awards picnic, if not for the food for the camaraderie with your fellow members and to Golf, play Horseshoes and just have a great day!

The other reminder is our Trade Fair and Training Expo. Rich Heinick believes that everyone is going to go to the old location and insists on making everyone aware that the location has changed to the Sheraton Harrisburg - Hershey Hotel at 4650 Lindle Road Harrisburg. Just in case there is any doubt please read the article in your newsletter.

Just a reminder we always need articles and information on promotions and news of interest for our industry. Please feel free to send them to me at todd.marshall@andritz.com.

EASTERN SNYDER COUNTY REGIONAL AUTHORITY

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force mains ranging in size from 8" to 36", and two pumping stations.

Selinsgrove Municipal Authority operated these facilities until June of 1994, when in accordance with the 1977 Sewage Service Agreement, all of the outstanding debt was satisfied, and the municipalities incorporated what is now known as the Eastern Snyder County Regional Authority or ESCRA. While the original facility design was only projected to take the areas growth to 1995, all of the participating municipalities have performed and continue to perform substantial collection system rehabilitations and reconstruction such that hydraulic capacity is only now in 2009 becoming a constraining factor.

The Authority entered into an upgrade project in 2004, with a project cost of \$7,050,000 which modified the existing activated sludge system to incorporate Siemens Water Technologies *Vertical Loop Reactor Process* to enable the ESCRA facilities to perform biological nitrogen removal to a level of 5.0 mg/l TN as an annual average. Siemens provided ESCRA with a process performance guarantee which has not yet been realized, however, Siemens has provided additional control devices which with re-programming of it's "Smart BNR" process software should meet it's process performance specifications by June of 2009.

ESCRA is also in the process of evaluating how best to achieve Total Phosphorus reductions as required as a discharger to the Chesapeake. ESCRA's consultant, Gannett, Fleming, has evaluated the facility for construction of a metal salt chemical addition to achieve the 0.8mg/l Total Phosphorus effluent concentration. Also under evaluation is the purchase of Phosphorus credits to satisfy the discharge limit until such time as other options are more financially viable.

Eastern Snyder County Regional Authority Wastewater Treatment Facilities

870 South Front Street • Selinsgrove, PA 17870
Telephone (570) 374-1173 • FAX (570) 374-6078

IMPROVEMENTS, ENHANCEMENTS, AND STEADIGRO(TH)!

The Derry Township Municipal Authority owns and operates the following facilities for the collection, conveyance, and treatment of wastewater generated in the Township of Derry and surrounding communities:

- ❖ More than 150 miles of 8" to 48" diameter sanitary sewer lines
- ❖ Two metering and thirteen wastewater pumping stations
- ❖ Clearwater Road (CwR) Wastewater Treatment Plant (WWTP)
- ❖ Southwest WWTP

The CwR WWTP serves approximately 9,000 customers including residents of Derry, South Hanover, and Conewago Townships as well as a portion of the Borough of Hummelstown. In addition, the facility serves the Hershey Company industrial pretreatment facility and the Hershey Medical Center.

The CwR WWTP, which was constructed in 1976, has a permitted hydraulic capacity of 5.02 million gallons per

day (MGD), and currently receives wastewater flows that average approximately 3.8 MGD. The CwR facility has undergone a number of improvements since the last CPWQA Plant Tour in September 2001. The improvements at the plant include:

- ❖ Expansion and Process Upgrade
- ❖ Grease Trap Acceptance & Pretreatment Facility
- ❖ Methane Powered Biosolids Dryer
- ❖ Addition of a Biosolids Dewatering Centrifuge

EXPANSION & PROCESS UPGRADE - Although the plant was originally rated at 5.0 MGD, the actual treatment capacity was limited to approximately 4.0 MGD since the original plant capacity was never revised to reflect the NH₄-N removal requirements imposed in the early 1980's. The expansion and process upgrade project focused on capacity expansion and biological process improvements including treatment capabilities to meet the Chesapeake Bay TN & TP requirements. The treatment process

continued on reverse

PEOPLE IN THE NEWS



LANCASTER, Pa. — The American Council of Engineering Companies of Pennsylvania (ACEC /PA) awarded RETTEW, a multidiscipline engineering, planning and environmental consulting firm, a 2009 Diamond Award for the firm's design of the Mary D

Fire Company Sports Complex, Schuylkill County. RETTEW and its client, the Schuylkill Headwaters Association, Inc. (SHA), received the award honoring excellence in engineering at a ceremony held Thursday, February 5, 2009, in Hershey, Pa.



LANCASTER, PA. – RETTEW, a comprehensive engineering, planning, surveying and environmental consulting firm serving the mid-Atlantic region, recently promoted Rane A. Wilson, PG, from project manager to group manager in the firm's geosciences group.

Working from RETTEW's Lancaster office, Wilson is responsible for building and maintaining client relationships and serving as coach and mentor to other professional staff within the firm's geosciences group, which was recently combined with the natural sciences group to form the firm's environmental sciences service area. As coach and mentor, he guides project managers, geologists, geoscientists and environmental scientists. Additionally, he is responsible for managing and administering projects across multiple service areas within the organization to ensure projects are completed on time and within budget.

Wilson earned a bachelor's degree in geology from Muskingum College, New Concord, Ohio, and completed graduate course work at the University of Akron. He resides with his wife and two children in Palmyra, Lebanon County, Pa.

2009 TRADE FAIR

Mark your calendars now for the 2009 Trade Fair, Training Exposition, and Tailgate Party, to be held Wednesday, November 4, 2009, at the Harrisburg-Hershey Sheraton located on Lindle Road, just east of route 283. As in previous years, the Trade Fair will feature exhibitors of products and services related to the wastewater treatment and collection industry; and DEP certified training will be provided. But this year, you can begin your pre-game festivities for the November 7 clash of the Penn State Nittany Lions and the Ohio State Buckeyes with some of the Tailgate Party themed activities at the Trade Fair. Regular admission price will be \$25.00, however, current CPWQA members, and their employers can pre-purchase admission vouchers for \$20.00, prior to July 1, 2009. To arrange for purchase of a voucher, contact Rich Heinick at: rheinick@gfnet.com

IMPROVEMENTS, ENHANCEMENTS, AND STEADIGRO(TH)! *continued*

selected by DTMA to meet the new effluent requirements was the Kruger A/O (or Anoxic/Oxic) process for BOD and total nitrogen (TN) removal. DTMA elected, for a variety of reasons, to continue to use chemical precipitation of phosphorous through the addition of ferric chloride. Additionally, the DTMA elected to continue utilizing mechanical surface aerators for process aeration and mixing.

The existing plant suffered from extremely poor hydraulics that often limited operational control and flow distribution. In order remedy this situation, the height of the primary distribution box and primary clarifier walls were increased to raise the water level more than 3.5 feet. This additional water height provides the necessary hydraulic drive to move the wastewater through the biological treatment system.

The A/O biological treatment process is divided into two parallel trains, each consisting of; four primary anoxic, three oxidic, and two secondary anoxic zones followed by one re-aeration “stripping” zone. Flexibility was designed into the system to include; internal sludge recycle, and secondary anoxic RAS side stream feed for maximum TN removal, as well as the ability to isolate some of the tanks for maintenance without loss of the entire treatment train.

Following the re-aeration step, the mixed liquor flows to a renovated secondary distribution chamber and then into three (two upgraded original and one new) final clarifiers. All three final clarifiers include energy dissipating inlets (EDIs), Stamford baffles, launder covers for algae control, and rapid sludge withdrawal of return activated sludge (RAS). A new RAS Pumping Station provides the flexibility and control for RAS return and secondary anoxic side stream feed.

Process effluent results have been excellent. Effluent BOD and TSS have averaged around 2 mg/l for the entire year. Phosphorous removal has, of course, been readily achievable with the addition of ferric chloride. TN removal has consistently been below the 6 mg/l target and has been as low as 4 mg/l.

GREASE TRAP ACCEPTANCE & PRETREATMENT FACILITY - An integral component of the DTMA CwR facilities is a two lane, drive through, septage receiving station. Improvements to this facility included the addition of a building with an office for operator oversight of the septage

receiving as well as the controls and valving for the aerated grease pretreatment (AGP) tank. Another building was also constructed to house the magnesium hydroxide storage and feed equipment that is used as an integral part of the AGP process.

ADDITION OF A BIOSOLIDS DEWATERING CENTRIFUGE - Operational efficiency of the existing belt filter press, which has seen more than 15 years of continuous service, has decreased to the point where cake solids rarely reached 16%. In order to address this deficiency, a number of centrifuges were pilot tested. Pilot test results showed that a centrifuge could achieve cake solids of 21 to 22 % and polymer dose at or below 20 pounds per dry ton. Based on these results a new centrifuge was designed and completed in late 2008 and has been performing well.

METHANE POWERED BIOSOLIDS DRYER - The egg shaped anaerobic sludge digester at the CwR WWTP produces large volumes of high quality methane or biogas. A small portion of the biogas was used to heat several buildings

and the liquid sludge in the digester. In order to utilize more of the biogas, DTMA installed a dryer to convert the Class B cake into a Class A, EQ granular product. Biogas is used to produce steam which is then utilized in an indirect dryer and ultimately produces the Class A, EQ granules. A dense phase pneumatic conveyance system conveys the product to a silo before the material is de-dusted, discharged to a covered storage facility,



and sold to the end bulk users.

The DTMA is continuing to explore additional end user markets for the granular product and a number of field trials are planned for the spring. The product will also be registered with the PA Department of Agriculture as a “Specialty Fertilizer” and a “PA Preferred Product”. In order to complete the registration process, DTMA was required to have a product name. After what can only be described as an interesting brainstorming session (with a public relations firm) to develop a suitable product name, several candidates were selected (and many “unsuitable” names were shelved). Because the dried Class A, EQ, granular product improves and enhances soil structure, and supports consistent, uniform plant growth, the name **CLEARWATER STEADIGRO™** was selected.

Since the CPWQA last visited our CwR Facility in 1991, you can see that the DTMA has embarked on a path of improvements, enhancements, and **STEADIGRO(TH)**. And as they say on the ageless game show, “C’mon down” to our facility in Hershey!!!!

Wayne Schutz, Assistant Manager

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PEOPLE IN THE NEWS

Material Matters, Inc., a nationally recognized environmental consulting firm, is pleased to announce **Aaron Stephens, M.S.**, as partner in the firm. Aaron currently serves as a Senior Information Systems Manager with Material Matters, Inc.

Aaron has worked for Material Matters, Inc, since 2002. He conducted the design and development of the Material Manager™ database, building upon the biosolids, wastewater, and regulatory expertise of Material Matters' personnel with his exceptional technical knowledge and skill. Initially marketed to Pennsylvania generators and land appliers of biosolids and residuals, the Material Manager™ database has expanded to meet the needs of many specific regions throughout the U.S including Colorado, Washington, Tennessee and North Carolina. Aaron will continue with the design and development of new modules in the Material Manager™ product and serve as project manager for current and pending national clients who are currently using the Material Manager™ database. He also provides support for projects involving technically based studies and food processing residuals, and provides technical peer review.

Aaron holds bachelor's and master's degrees in Agricultural and Biological Engineering from Penn State University in University Park, PA.

Aaron joins partners Trudy Johnston, Robin Brandt and Barb Petroff in management of Material Matters, Inc. Please join us welcoming Aaron to this new role.

PENNVEST ISSUES \$530,045,379 IN FUNDING AT THE APRIL 20 MEETING

PENNVEST issued \$410,701,488 in loans and \$119,343,891 in Grants to 58 applicants on Monday April 20th. Go the PENNVEST web site at www.pennvest.state.pa.us for a list of the applicants and additional information. See Hot News at the top right for the latest information on the funding awards. The next deadline for applications is May 18th and PENNVEST projects another large funding award on July 21, 2009. The Commonwealth Finance Authority (CFA) may need to delay the awards for the H2O funds due to the large amount of applications. They have indicated that the awards could be issued in July rather than May, 2009.

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