Come one, come all! Please join us at the Town of Newmarket Wastewater Treatment Facility to celebrate the NHWPCA’s 50th Anniversary Winter Meeting on December 8th, 2017.

Located along the banks of the Lamprey River feeding into the Great Bay, the Town provides sewer service to approximately 3,500 residential and commercial users. The 0.85 MGD Facility recently underwent a comprehensive upgrade including abandonment of the existing biological trickling filter process and construction of a new 4-stage Bardenpho treatment process with several other significant facility improvements.

The Newmarket WWTF and the Creighton Street (influent) pump station were originally constructed in late 1960s. The influent pump station included a grit collection chamber, comminutor and pump building. The WWTF consisted of a primary treatment plant complete with anaerobic digesters, digester gas system, sludge drying beds and chlorine disinfection. Over the years, several Facility upgrades have been completed to update process equipment and more recently, bring the facility in compliance with effluent discharge limitations including:

- 1999 – Influent Pump Station and Grit Upgrade: Removal of the grit removal system from the influent pump station and installation of a new grit building including two vortex style grit separators.

The facility is licensed by the EPA to discharge into the Lamprey River. A 2009 NH DES study of Great Bay identified water quality concerns related to high levels of Total Nitrogen (TN). The Newmarket WWTF was identified as a major point source of nitrogen to the Bay. As such, the EPA issued a new NPDES permit to the Town in the fall of 2012 with stringent TN limits to be less than 3mg/l. The Town negotiated an Administrative Order by Consent with the EPA that re-

(Continue on page 1)
Editor’s Words

Usually in my editor’s words I spend time begging people to get in touch and contribute to the newsletter. I’ve even tried the passive-aggressive approach of stating that I’m giving up and NOT asking. My children would tell you that I’m a pro at this approach and they wish I’d just stop it. And then I would innocently say that I have no idea what they’re talking about. Well, apparently something worked because I had LOTS of people help to make this the MOST AWESOME newsletter ever!!! Check out the newest feature – Pretreatment Tales. I struggled to decide what to call this. Sewer Cop Sagas? IPP Stories? Coordinator Chronicles? Industrial Pretreatment Adventures? Thesaurus.com is a wonderful web-site… I know that I’m looking forward to more tales from Mark Roper and I’m betting that other IPP Coordinators will also share their tales. Or you might get stuck reading my IPP tales. Oops, am I being passive-aggressive again?

Please note that I have a new photo to go along with these editor’s words. I wouldn’t want anybody to not recognize me when you want to seek me out at a meeting with an offer of an article for The Collector!

Upcoming Events

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
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<tbody>
<tr>
<td>December 8, 2017</td>
<td>NHWPCA Winter Meeting at the Newmarket WWTF in Newmarket, NH.</td>
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<tr>
<td>January 21, 2018</td>
<td>NEWEA 2018 Annual Conference in Boston, MA.</td>
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Special Thanks to this Issue’s Contributors

Michael Curry, Michael Theriault, Kevin MacLean, Stephanie Rochefort, Mark Roper, Geri Ciardelli, Stephen Simeone and John Adie.
required achieving a TN limit of less than 8 mg/L within 5 years.

The existing WWTF has served Newmarket well; however, much of the equipment was approaching or was past its anticipated service life and the existing trickling filter facility was simply unable to achieve the TN removal required. The Town worked with Wright-Pierce to develop a design approach that provided a cost-effective solution, while still providing the Town with the flexibility to meet potentially more stringent effluent limits in the future.

The $11.2 million comprehensive WWTF upgrade project was awarded to Apex Construction, Inc. with construction groundbreaking occurring in July 2015. Wastewater effluent began discharging from the new process in July 2017. The upgrade includes new aeration tankage for a 4-stage Bardenpho process tailored for total nitrogen treatment, new secondary clarifiers, a new control building with office and laboratory, upgrades to the solids handling and dewatering process including a new inclined screw press, a new mechanical fine screen at the influent pump station, primary clarifier mechanism replacement, disinfection system upgrades, and conversion of the existing anaerobic digesters into aerated sludge storage tanks. Several challenges were encountered during design and construction including site constraints, topography and difficult geotechnical issues.

The Town of Newmarket would like to welcome all visitors to tour the new WWTF to get a glimpse of the future of wastewater treatment in the Great Bay region. Engineers, equipment vendors and contractors will be setup at various locations to share project contributions. Breakfast and coffee will be provided by our Association’s entrusted sponsors. Following the WWTF tours, guests are invited to join us at the Cyderhouse at the Thompson Inn in Durham, NH for lunch and a presentation on the upgrades.

(Continued from page cover)

Personally, this is my favorite time of year. Cooler temps, lower humidity (usually), foliage, apple season, hunting and just all around enjoyable times, except for the ever-increasing loss of daylight.

Hopefully you had the opportunity to visit the Manchester Environmental Protection Division’s wastewater treatment facility aka, our Fall meeting. Fred McNeill and staff as well as the engineers and vendors did an excellent job. This event set a record for registered attendees (119) at final count. Not to mention the grand finale SUV crashing the party.

Point to ponder: The Cassini-Huygens probe was intentionally sent into Saturn’s upper atmosphere the same day as our Fall meeting ending a journey of over 20 years at a cost of $3.26 billion. For perspective, The American Society of Civil Engineers {ASCE} issued its 2017 report card and gave the United States a [D+], stating a need of $3.9 Trillion dollars to repair, replace and invest towards infrastructure. While I am in full support of space exploration and am very interested in the unknown mysteries of space, it makes me wonder, given that there is only one known and accepted habitable place for human life, don’t you think the priorities are a bit skewed?

Politically there is much afoot regarding wastewater and its derivatives. The initiative regarding PFAS, NPDES delegation and ongoing surface water regulations – there is a huge amount of work to do. Many parties are pooling resources on the PFAS front and their efforts are not without recognition and appreciation. The NPDES delegation is another item altogether, while I feel the association should weigh in, it seems to me that NH municipalities really need to get involved. We all are starting to feel the pinch from retirements on top of everything else. Mary Jane Meier has put together a great pictorial regarding this issue – look for her article!

Your Board of Directors is considering web site services, administrative services and legal counsel to better serve the members. As with all things, cost will dictate what we can accomplish.

Since this is one of my last installments I wanted to express my gratitude and appreciation to the members of my staff – Mark, Dennis, Jason, Richard and Wyatt – they keep the place running and in compliance. I couldn’t do it without them.

As a final point to ponder; were you aware that the “Doomsday Clock” is set at 2.5 minutes to midnight {the closest since 1953}.

Cheers – Kevin MacLean
NHWPCA Past Presidents

Malcolm (Mike) Butler - 1989

Mike Butler began his career working on the paper machines for Monadnock Paper Mills, Inc. He worked his way up to the position of backtender when he was asked by the Vice President of Manufacturing to go into Management. In order for Mike to accomplish this he had to first get his degree in Wastewater, which the company paid for. He earned his degree at UMass Lowell, although when he attended it was called Lowell Tech, and began working as the Treatment Plant Supervisor for the paper mill. Mike has worked for Monadnock Paper for 35 years now and considers his job interesting and challenging. He has been keeping up with technology and increased regulations, not to mention the many different bosses he has had over the years. He considers himself “Chief cook and Bottle washer” dealing with day to day maintenance and operations while meeting permit limitations. One of Mike’s greatest achievements was starting the Water Conservation Committee at Monadnock Paper Mill where, through education and some process changes, the company was able to reduce their flow 30 to 40 percent. His other great accomplishment was having the company staff, along with help from Ken Kessler from NHDES, dewater the solids accumulated in their lagoons themselves, saving the paper mill over 1.5 million dollars. Monadnock Paper has received the Governor’s Pollution Prevention Award three times. As President of the Association, Mike was instrumental in assigning specific duties to each board member and making them responsible for certain events. Mike’s proudest moment was when he was asked to serve a second term on the board but he declined and instead served on the NH Water Council to represent operators and plants of NH which he has done now for the past 26 years. Mike believes the most challenging issues the industry faces are attracting qualified operators; infrastructure funding; and pushing back on regulatory agencies when they do not use scientific standards to establish permit limitations.

Bryce Fletcher - 1993

Bryce began his career in 1984 as an Operator for the Hooksett WWTF where he worked under the supervision of Bruce Kudrick. While at the Hooksett facility he earned his grade III operator’s license and was employed with the town for four years. By 1989 he left Hooksett to embark on a career with Roy F. Weston, Inc. (Now Weston Solutions, Inc.) where he is currently employed. He became interested in this field because his father was an Environmental Engineer. Even at a young age, Bryce would make a point of seeking out each town or city’s WWTF. His interest in wastewater facilities led Bryce to attend New England Regional Wastewater Institute in South Portland, M.E. where he earned his certification. He continued to use his core operations skills, primarily supporting ground water remedial action systems operated by Weston. Bryce continued his education and eventually earned his degree in Mechanical Engineering at U-Mass Lowell in 2006 and obtained his P.E. license. He has since transitioned from Operations to full time Engineering. Currently, his projects involve secure work in Washington, D.C., Navy Advanced Metering and Infrastructure (AMI) and Superfund Remedial Action type projects. Bryce jokes that his greatest achievement was not driving the Town of Hooksett’s Antique 1954 Chevy into the chlorine contact chamber tank. Anyone interested in that story should ask Brian Towle about it. According to Bryce “It was epic.” His chief contribution as President of the Association in 1993 was trying to re-invigorate committee participation and member support. His fondest Association memories are the fun times he had with people like Tom White and George Neill as well as many others. Bryce feels the greatest challenge for the future is dealing with the upkeep and replacement of aging infrastructure.

Rick Cantu - 2002

Rick Cantu worked for Converse Rubber Company when his position was eliminated due to foreign competition. He was then eligible for retraining under the Trade Readjustment Act. He wanted to go into TV and radio repair but the unemployment councilor said the future was in water and wastewater technology. Rick took the councilor’s advice and began training at the Berlin Vocational Tech School and has
Fred McNeill began his career in the wastewater industry in a most interesting and unusual way. He says he “fell into the water industry” as a Peace Corps volunteer working in Sierra Leone, West Africa from 1981 to 1983. Unbeknownst to him, it was the start of a 40 year professional career. After his time in the Peace Corps he began working as a consulting engineer, working internationally for 10 of those 20 years. In 2006 he finally decided to enter the public sector and joined the staff at the Manchester WWTF. Fred is currently the Chief Engineer of the City of Manchester’s Environmental Protection Division where he manages the City’s wastewater treatment facility. He feels his greatest achievement in this industry was providing clean, safe water to developing countries. In 2003, as President of the Association, he helped start the “Plant of the Year Award” or POTY - pronounced “potty”, pun intended. Fred was also instrumental in changing the bylaws of the Association’s charter to expand the eligibility of the President to non-operators in this field, serving as the first non-operator President of NHWPCA in 2003. He also helped to resurrect the Legislative Breakfast which has proven over the years to be instrumental in educating our elected representatives concerning the issues facing this industry. For 16 years Fred has been in the annual golf tournament which is a very popular association event. His fondest memories are the many board of directors dinners held in Concord that he has said “rocked the house.” While working in this industry he has made many friends and many great memories. Fred feels that the most challenging issues facing our industry include; ageing and failing infrastructure, increased regulatory requirements, lack of sustainable funding and climate change. He hopes to retire from the City of Manchester WWTF once he has completed his 20 years, and we hope Fred will continue to be involved in this industry and our Association for many years to come.

Sarah (Goyette) White - 2004

Sarah White began her career in this industry in a roundabout way. She was working for ChemServe as a Laboratory Technician in 1996 when she heard about the Redhook Ale Brewing Company coming to New England. With her experience in the laboratory and her interest as an avid home brewer and wine maker she decided to apply for a position. The brewery was in need of someone to run the industrial pretreatment which was required by their municipality-Portsmouth. Sarah was hired as the Pretreatment Plant Manager/Operator where she was trained to operate the pretreatment plant which typically had to deal with high concentrations of BOD, COD and TSS. She worked at Redhook for three years and still kicks herself for leaving, “being a Chemist for a brewery was the coolest job, ever!” Management didn’t appreciate the need for pretreatment believing that wastewater doesn’t make money. But Sarah was able to demonstrate to the management that wastewater treatment is important and would save them money in the end. Pretreatment ensured no surcharge for excess BOD and no fines paid for permit non-compliance. After leaving Redhook she became the Assistant Water/Wastewater Superintendent for the Town of Exeter and continued with her wastewater operator training and certifications. In 2006 Sarah went to work for Severn Trent Pipeline Services as an Operations Coordinator and shortly thereafter took a position with SEA/Kleinfelder Consultants as an Administrative Project Manager. She later went to work for the City of Lebanon as Chief of Quality Assurance/IPP Coordinator/Lab Manager. Sarah currently works for UniFirst Corporation in

Fred McNeill - 2003

Fred McNeill began his career in the wastewater industry ever since. He has worked at various plants and locations throughout New England and Pennsylvania. His last position of 18 years was with the City of Manchester, N.H. Rick was Pretreatment Coordinator for five years, Storm Water Coordinator for five years and then Superintendent for eight years before retiring in June 2015. He currently runs his own business called OspreyOwl Environmental, L.L.C. as President and sole proprietor. He considers keeping the plants that he worked at in compliance a “subtle achievement”. However, his most acclaimed achievement was perfecting “Clean Sampling” techniques and demonstrating that river samples are usually much cleaner than what is measured during WET testing events. He continues to provide training and consults in his “retirement”. As President of the Association Rick established the NHWP-CA’s website which had previously been part of NEWEA’s website. He secured a web address, built the website and continued to be its webmaster for several years. He also worked with Fred McNeill to create the foundation of the Plant of the Year Award with developing the criteria and scoring components. Rick’s fondest memories are of seeing people that he previously worked with at meetings and events. He also enjoyed George Neill’s rendition of Santa Claus each year at the winter meetings. Rick feels the greatest challenges facing this field are recruiting young qualified people and providing them with enough skills and training to meet the ever stringent regulatory environment and the escalating cost of treatment.
Environmental Compliance with her main focus on wastewater operations. Sarah has made it her mission to inform anyone and everyone about the importance of wastewater treatment. Her fondest memories are of the many summer outings while on the Activities committee and selecting the type of beer for the outing. Sarah believes that the greatest challenges facing this industry are aging infrastructure and losing the long term knowledge of retirees which she considers the “Brain drain”. She feels that educating others about what we do is key to solving these challenges.

**Rick Seymour - 2006**

Rick Seymour’s interest in Science eventually led to his career in the wastewater industry. He earned his B.A. in Biology at St. Anselm and later went on to obtain his M.B.A. from Rivier College. After earning his B.A. Rick began working as a junior high school Science Teacher. After teaching he then took a position at Hampshire Chemical as a Quality Control Laboratory Technician. It was his work in quality control that drew him to the wastewater industry where he went on to become the Laboratory Supervisor and Industrial Pretreatment Coordinator for the City of Nashua WWTF. As he continued his work at the Nashua facility he was eventually promoted to Superintendent and finally to Public Works Director. Rick’s love of teaching continued throughout his wastewater career and he taught night school at the University of Lowell, MA. For ten years Rick taught Water Biology and Wastewater Lab classes, working closely with Professor Don Pottle. Rick truly enjoyed solving problems in cooperation with others in the wastewater field. He believes his greatest achievements in the industry were the improvements in odor control and the addition of a new anaerobic egg digester, the first of its kind in N.H., installed at the Nashua facility during his tenure. As President of the Association he tried to involve the membership in committee work and to improve the professional and technical nature of Wastewater Science. His fondest Association memories were of chairing the Activities Committee where he was instrumental in planning the Summer Outing, ski weekends and other association events. Rick feels the greatest challenges for the future of this industry are keeping good, trained staff at the municipal level, continuous promotion of training and education, as well as adding access to educational resources whenever possible.

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**Blurbs, Blurbs and More Blurbs**

**2017 Drinking Water and Wastewater Manager School Graduates**

NH DES and the NHWPCA are proud to recognize the 17 graduates of the 2017 Drinking Water and Wastewater Managers School. The nine month program began in March and ended in November. The 2017 class is the third to graduate from the program offered by NH in 2011 and 2013 and brings our total to 49 graduates. The 2017 program is NH’s first to include utility operators and managers from Drinking Water systems in addition to Wastewater systems. Be sure to offer your congratulations to this fine group of Movers and Shakers at the Winter meeting graduation ceremony. Announcements regarding future classes and application instructions will be issued in the Fall of 2018 on the web site nhwpca.org.

**The NHWPCA Young Professional Group**

Are you new to the wastewater field? Do you know someone who is? The NHWPCA Young Professional Group is the place to be.

When you are new to the wastewater field it can be hard to make the right connections.

The NHWPCA Young Professional Group looks to put new operators, laborers, engineers, students and vendors in touch with established people in the field as well as with each other.

We all know that the average employee age in our industry is increasing. Sharing knowledge gained through experience is as important as bringing in new perspectives and fresh ideas. The NHWPCA provides opportunities to engage industry newcomers in this vital exchange and increase job satisfaction through meaningful connections.

Some of the NHWPCA Young Professional Group’s initiatives include:

- Mentoring: We old folks don’t always have all the answers, but we have the experience to know where to look or who to ask. Through
the mentoring process, group members can tap into the established networks and expand their contacts to bring industry innovation back to their home-plant.

- Networking: Working at a local treatment plant can be isolating. Personally, one of the most rewarding aspects of being involved in the regional and national wastewater professional community has been the sense of a greater purpose and the warm friendships I’ve developed. Local events like the “Poo & Brew” as well as regional and national conferences provide opportunities to meet and exchange ideas with like-minded professionals.

- Community Outreach: There is a certain stigma to working in wastewater. The public perception (if they think of us at all) is that wastewater is a “dirty job” requiring little skill or expertise. Through grassroots community engagement, we can change minds and raise awareness about the degree of training, specialization and complexities of the modern wastewater treatment process.

- Scholarship Opportunities: If you’ve ever been to the NEWEA trade fair in Boston, you know about the wealth of available information and the people you get to meet. The group hopes to provide the opportunity to attend this event with the support of a mentor who can facilitate introductions and navigate the offerings for an optimal experience.

If you are a NHWPCA member there is no cost to be a part of the group. Just send an email to mcarle@town.hampton.nh.us. If you’re not, become one at www.nhw pca.org

**Water Warriors Initiatives**

Water Warriors Initiatives is a joint effort by the New Hampshire Water Pollution Control Association (NHWPCA) and the Maine Water Environment Association (MEWEA) to recruit and retain returning and retiring U.S Armed Forces veterans into the drinking water and clean water infrastructure fields.

Many skills learned in the Armed Forces, particularly with equipment maintenance and science based programs, translate well into a successful career protecting the one thing no one in our country can live without, clean water. At the same time, many of our most qualified water/wastewater operators are reaching retirement age, leaving the industry with a labor shortage, not to mention the imminent loss of decades of institutional knowledge.

The Water Warrior Initiative seeks to tackle these two problems by promoting the water/wastewater field as a desirable career options for returning veterans. The objectives include:

- Providing education and training opportunities,
- Streamlining the certification process for our veterans, and
- Providing placement assistance and internships.

This initiative will require the coordinated efforts of industry leaders, veterans organizations, and government agencies, but the end result, getting veterans into good paying jobs while serving their communities, is worth it.

The timing has never been more opportune to provide those who served our country with a career that will provide for their future, while still allowing them to serve their local communities. If you are interested in getting involved in this exciting effort, or want to learn more about proving an internship at your facility for a returning veteran, contact Peter Goodwin at peter.goodwin@tedberrycompany.com.

**New Hampshire Construction Career Days 2017**

For those of us in the wastewater industry it’s no secret we have an age problem. Like so many other trades and professions there are not enough young people applying for the jobs that are out there to make up for the ones we are losing to retirement. At the New Hampshire Construction Career Days (NHCCD) the goal is to bring in high school Juniors and Seniors from across the state and expose them to career paths that they might not be aware of and to give them some hands-on experience. This year the students were able to try their hand at welding, tree climbing, and carpentry, as well as light and heavy equipment operations. They even got the chance to drive an 18 wheeler.

As part of this experience the NHWPCA was there to teach them about the different opportunities in wastewater. At our booth students learned that there are many skill sets we draw on to get our job done. From the mechanicals skills of pump me-
chanics and laborers to the biological skills needed for the lab and operations, to the opportunities in engineering - wastewater has something for everyone!

As part of the hands-on experience, the students got to try their hand at one of the Operators Challenge events, pipe cutting. The three fastest men and women received prizes. Many found that it’s not as easy as it first looks and ran out of steam. But for Justin and Olivia, it was no sweat. They were able to get through in 16 sec and 40 seconds respectively.

For us volunteers, it was a great opportunity to share our experience in what we do every day and to raise the awareness in the next generation that, while it is working with poo, we are making a difference in protecting the environment.

Public Outreach

On April 6, 2017 DES Water Division Director, Gene Forbes, awarded the first ever Award for Outstanding Public Outreach in Wastewater to the City of Concord, NH. This new program recognizes individuals and organizations that seek to educate citizens about the importance of clean water and is a direct result of Ray Gordon’s initial idea and efforts to earn approval from the DES Commissioner.

NH DES Wastewater Engineering Bureau will accept nominations for the 2018 award until February 1, 2018 and will determine the award recipient based upon the information submitted using the Nomination Form. Please visit the link for further information found at https://www.des.nh.gov/organization/divisions/water/wweb/index.htm

Through this program, the Department continues its support by awarding recognition and encouraging those who educate the public about wastewater related issues. A variety of education outlets and formats can be selected by the applicant – such as training programs, facility tours, brochures, banners, social media, web sites, TV commercials, newspaper articles, public events and any other effort that brings attention to improving wastewater operations, promoting water quality and/or benefits of biosolids.

The First Recipient of this Award for Outstanding Public Outreach is the City of Concord, NH. In a word, the concerted efforts on the part of Kristin Noel and Dan Driscoll have set the bar quite high with the variety of outreach functions their staff supports to educate City of Concord residents and visitors. They broadened their efforts to reach all facets of the population - ranging from school age children to our City’s elders and even included State Legislators. Through a variety of outlets from

- hosting plant tours with microscope displays,
- staffing a booth at the Annual Market Days Festival,
- offering internships to prospective ww operators,
- producing an informative web site,
- cultivating business relationships with NEBRA and RMI and NHWPCA,
- constructing raised growing beds using their own Class A biosolids to grow vegetables and flowers
- and developing brochures and flyers.

No media outlet is overlooked. These are the faces of the movers and shakers who deserve our congratulations on an effort Very Well Done. Thank you.

Future Applicants are urged to consider the programs they have in place that continue to be successful, as well as new initiatives they have recently launched. Awards may be made to nominated individuals or a group. As said best by our winner - “We believe that educating the public is not only important, it is vital. The more the public understands their impact on our treatment process, the easier it is for us to maintain our plants and pump stations.”

Please direct questions about the program to the DES through Mary Jane Meier at maryjane.meier@des.nh.gov.
THOUGHTS FROM THE BENCH
By Stephanie Rochefort, City of Somersworth WWTF

The photo above is USEPA in Washington, DC. I was there in August. I was there on August 7th, 2017 when Scott Pruitt signed the Methods Update Rule! And if that wasn’t exciting enough, I was attending the National Environmental Monitoring Conference so I was surrounded by lots of other lab-rats when this happened and we all cheered!

Since we haven’t had a Methods Update Rule since 2010, I obviously need to share my thoughts. I’m going to use the abbreviation MUR for the rest of this article, but I think it’s kind of creepy when somebody says “muuur” instead of “methods update rule”. Oh dear, if you weren’t going to say “muuur” I probably just put that idea in your head. I’ll fix it – JUST A SMALL TOWN GIRL, LIVIN’ IN A LONELY WORLD - nobody can read that phrase and NOT start singing Journey’s Don’t Stop Believing – you think?

This latest MUR was initially finalized in December, 2016. Like so many end-of-year rules, by March of 2017 it had been withdrawn. Lots of people had a grand time complaining about the current US President when this happened, but we dinosaurs know that this is common whenever there’s a change in administration.

While I was at the Conference I was able to listen to a series of talks about the Methods Update Rule. It soon became obvious that it was not as dramatic as the 2010 rule. This rule updates the approval of many methods to the current versions. It also corrects a lot of technical errors and provides some additional clarifications.

I’m going to tell you the most important piece of advice that I learned from Jerry Paar from the NELAC Institute. After the usual disclaimers, his PowerPoint slide read “Read the Rule, the Methods and the MDL proce-
dure”. That is simply the best advice for any and all labs. A lot of the excitement about the MUR at this Conference was because of new methods for pesticides, PCBs, Volatiles and Semi-volatiles. I don’t do that kind of testing in my municipal wastewater lab and I’m pretty sure that most of you don’t either. So, I’m going to give you my advice on what to do.

First read the rule. www.ecfr.gov is a wonderful site. So is www.regulations.gov. The best way to get where you want to go is probably www.epa.gov/cwa-methods/methods-update-rule-2017. I like killing trees so in addition to book-marking the rule on my computer I printed it. Then I read it and highlighted the parts that apply to MY lab here in Somersworth.

Did I mention that I’m a dinosaur? I survived the previous MUR so I know the steps that I need to take. After reading the rule, and realizing that I didn’t have the current versions of the methods that are now approved, it was time to obtain them. There’s a choice for Standard Methods – you can buy the 23rd edition book or an on-line subscription. You can even buy the book and get the on-line subscription free for one year so I did that. It was a very cost-effective option.

The next tedious step is reading the methods and comparing to what you’re currently doing. The step after that of updating all your SOPs is also pretty tedious. And don’t forget any and all places that you reference which method you use (like bench log books) since that all needs to be updated. It’s just like when you get a new debit card and try to change all the places that you have auto-debit set up. The same as in you’re going to forget something.

Something like the auto-debit for your electric bill, or the method reference on your bench log books…
In Hanover we have some industry, so a traditional Industrial Pretreatment Program that includes permitting and monitoring of Industrial Users, and enforcement of the Town’s Sewer Use Ordinance was implemented. But, we also have quite a few food service establishments that can cause problems associated with Fats, Oils and Grease in the collection system and excessive BOD and TSS loadings at the Water Reclamation Facility. To deal with some of these issues, we developed and implemented a Fats, Oils and Grease program which includes the monitoring, inspecting and permitting of over 50 food service establishments in Hanover. In addition to the sanitary sewer system, the program has recently morphed to address illicit stormwater discharges. This article identifies a potential source of pollution to the sanitary sewer or to stormwater that you may not be familiar with.

Typically, in a food service establishment inspection I spend most of the time in the kitchen looking for sources of grease and looking at fixtures that could convey grease to the sewer. I inspect grease removal devices to make sure they are cleaned and functioning properly and I ask a series of questions to try and get a sense of how knowledgeable staff are with managing their grease. Outside of the establishment I will pop a manhole and perform a visual inspection for grease build up in the sewer. Often, I will look at the grease rendering containers to make sure they are kept tidy and not leaking but other than that, most of the inspection is performed in the kitchen.

In the past, I didn’t pay much attention to grease hoods during an inspection. Grease hoods are used to vent fumes from kitchen fryolators, ovens, wok stations and grills. Basically, I would just ask the staff where they clean the grease hood screens and hope that they tell me that it is cleaned in a sink that is conveyed through a grease removal device. I will also ask about the small grease collection container that most grease hoods have under the hood next to the screens and hope that they tell me it is either dumped in a grease rendering container or that it is disposed of as a solid waste. I never considered what happens to the greasy fumes after they are vented from the kitchen.

A couple years ago I was asked by the Town’s Building Inspector to look at something questionable tied into the roof drain of a restaurant in Hanover. We climbed up a very sketchy wooden 2X4 ladder through the ceiling of the restaurant onto the roof and walked over in the direction of a large exhaust shroud from a grease hood. The shroud had a discharge port with a pipe running down to the roof all the way over to a roof drain. I walked to the end of the pipe and observed grease in and around the drain. Even though I had very little knowledge of grease hood exhaust systems I immediately knew that this was not an acceptable practice.

After a few expletives, I began to look around and noticed another rooftop exhaust from an adjoining building. I walked over to it and couldn’t believe what I was seeing. There was literally grease flowing from the exhaust of the grease hood down onto the rooftop and to a roof drain. Although there was a grease collection container located under the shroud it wasn’t doing any good because every joint had grease leaking from it onto the rooftop. You could see that a faint attempt to contain the grease was made by someone putting a dish pan under the drips but grease floats and every time it rains the grease overflows the pan. The fact that grease was actually flowing to the roof drain was not acceptable.

There are numerous problems with grease being on a rooftop but for my purpose it is not acceptable because most rooftop drains (not all of them in Hanover)
discharge to a stormwater system which discharges to “Waters of the US” or “Waters of the State” which are your lakes, ponds and streams defined and protected under the Clean Water Act and NH’s Surface Water Quality Regulations. Grease is a pollutant and polluted water is not allowed to be discharged to these waters. From my experience, I know that there are very few things legally allowed to discharge to a stormwater system other than rainwater, snow melt, or groundwater. Grease is not on the list of allowable discharges!

From where I was standing at the top of one of the taller buildings in downtown Hanover that first day I had a good 360-degree view of other rooftops. As I scanned the rooftops of some of the other food service establishments I saw similar issues. I saw grease on rooftops, I saw buckets and pans and other makeshift containment devices open to the environment and overflowing with grease. I saw a source of pollution to our waterways and a problem in Hanover that was clearly (until now) out of sight and out of mind.

I knew that food service establishments are required to clean their hoods so I decided I needed to learn more about grease hood cleaning companies. I asked our Building Inspector and Health Inspector some questions, did some googling, and began educating myself on what regulations apply to grease hoods. I also contacted a grease hood cleaning company that does a lot of work in Hanover and asked if I could watch them clean a local establishment.

Since most of their work is done after hours when the establishments are closed I came in early to witness their cleaning process.

Basiclly the process is to go into the hood and ductwork through cleanout ports and remove grease buildup by mechanical means using special magnetic scrapers and putty knives. Once that is done cleaners spray a coating of chemicals to break down the grease. The outfit I watched used sodium and potassium hydroxide but there is a whole slew of chemicals that can be used. The entire system is pressure washed with some of the wash water draining to a roof drain and some of the water diverted to wet-vacs and trash barrels where they are eventually dumped in the most convenient drain they can find.

I collected a grab sample of the wash water at both the roof drain and what was dumped in a kitchen drain and performed a pH test back in our lab. The pH was greater than 12.5 SU which is considered a hazardous waste and is illegal to discharge to both stormwater and to the sanitary sewer. So aside from issues related to dumping greasy water it is likely that at times during the cleaning process hood cleaning companies are also discharging hazardous waste to both stormwater and to the sewer.

The cleaning company I shadowed was very reputable and when they were done the grease hoods and ductwork were spotless which they took great pride in. What I found is that most cleaning companies are mostly concerned about complying with NFPA 96 which is a fire code. The licenses and certifications grease hood companies are required to have do not emphasize environmental regulations therefore cleaners have very little knowledge regarding rules for disposal of grease or other cleaning wastes. To make matters worse cleaning companies perform most of their work at night or in the early morning when they could inadvertently or purposely break rules without being noticed.

Case in point is when our Public Works highway crew caught and photographed a cleaning company very early in the morning taking large totes of wash water and dumping them into a nearby stormwater catch basin. In this case since we were unable to prevent the discharge from going to a “Water of the State” we reported the incident to NH DES and the company was eventually fined.

Eventually we decided to send out a mass mailing to all food service establishments in Hanover. In the letter, we identified the problem and informed the establishments that we were going to be performing grease hood and rooftop inspections. The letter informed them that for the initial inspection there would not be any enforcement action. I also developed a Best Management Practices Fact Sheet for Grease Hood Exhaust Systems to hand out during the inspections and to attach to all new Food Service Establishment Wastewater Discharge Permits.

After the letter went out I began inspecting grease hood exhaust systems. In most cases the inspections had to be scheduled rather than unannounced since access hatches to rooftops are often locked and someone with a key and...
knowledge about how to get on the roof is required. The
very first inspection I tried to schedule the manager in-
isted that I wait until after it was cleaned before I
showed up but that was a definite no answer for me. On
several occasions by the time I arrived for the inspection I
was happy to see that some of the issues were already
taken care of.

My inspections focused on educating establishment and building owners
about the legal ramifications of
grease and other pollutants discharg-
ing to storm drains or the sewer. In
most cases establishment and build-
ing owners were unaware of the
problem themselves and were happy
to comply. There were only a couple
situations where the food service es-
stablishment representatives were
combative with what we were asking
them to do.

Although I’m not a huge fan of heights, in Hanover, I am
currently including rooftops into some my food service
establishment inspections. In addition, we are beginning
to require reports and checklists from cleaning companies
that specify if the cleaning frequency is adequate and if
the equipment is being maintained or in need of repair.
Long term I’m hoping the Town will adopt an Ordinance
I wrote which requires grease hood companies to certify
that they are complying with certain environmental regu-
lations in addition to what is required by NFPA 96. Also,
I have started doing training sessions in Hanover for our
Food Service Establishments and hosted a Presentation at
Dartmouth College to attempt to get the word out. I’m
hoping this will be an annual occurrence. Although there
is much more work ahead, follow up inspections at the
establishments have been positive with much of their is-
sues having been addressed.

If you have any questions regarding this topic feel free to
e-mail me at mark.roper@hanovernh.org. Also, stay
- tuned for a new guidance document in the works by NH
DES to help food service establishments throughout the
State better understand the importance of proper hood
cleaning procedures.

This company was caught
dumping totes filled with grease
hood wash water into the storm
drain behind the establishment.
NHDES was notified and the
company was fined.

NHWPCA 2017 Clean Water Week Poster Contest
By Geri Ciardelli, Nashua Wastewater Treatment Facility/Poster Contest Event Coordinator

For the sec-
ond year in
a row, the
NHWPCA
and the NH
DES wel-
coned
Clean Wa-
ter Week
Poster Week
Poster contest award

winners and finalists to meet the Governor to proclaim
Clean Water Week, followed by a dinner awards ceremo-

This year’s event was scheduled for May 16, 2017 with
the Governor. Unfortunately, Governor Sununu had a list
minute schedule change and could not attend. While the
students were disappointed, we were fortunate to have
Education Commissioner Frank Edelblut fill in. Students
and their families and members of the NHWPCA were
addressed by Commissioner Edelblut about the im-
portance of Clean Water Week. He then read and signed
the proclamation declaring Clean Water Week June 4-10,
2017 by the State of New Hampshire. He invited each
student up while he handed them a citation signed by the
Governor. Also speaking to the audience were NH DES
Water Division Director Gene Forbes and NHWPCA
President Kevin MacLean.

A presentation and dinner were held immediately after-
wards at the New Hampshire State Library, which is the
first state library in America, founded on January 25,
1717. Director Forbes addressed the group, again thank-
ing the students for their participation and interest in
clean water. Afterwards, several NHWPCA members,
President Kevin MacLean, Dave Mercier of Underwood
Engineers and John Adie from the NH DES spoke on the
importance of clean water and some of the positions one
can hold in wastewater. As he was last year, Seabrook
Operator and NHWPCA Board member Dustin Price was
the show-stealer as he spoke from the heart, starting his
speech with words of wisdom his father gave him at a
young age, “you’ve only got one shot at life and leaving
this world a better place than you found it”.

We hit a few snags and have a few kinks to work for next
year, as we did not know what to expect at the new ven-
ue. For sure, it saved the NHWPCA a lot of money. In
fact, since I first took over the Poster Contest, we have
seen a decrease in expenses of nearly $2500 and that is due to the huge support of the NH DES. The new venue allowed a more relaxed atmosphere but also one where there was a lot of mingling between industry professional and the families. I cannot wait to see what next year brings!

On behalf of the Communications Committee, I would like to thank many people, without whom this event would not have been possible. First, I would like to thank the teachers and parents for encouraging their children to participate in the contest, and also sincere thanks to all students for their creative and considerate art work. Next, I would like to thank the Governor’s Office for scheduling this event, providing citations to each of the finalists and winners and for making sure the Governor had a great fill-in with the presence of Education Commissioner Frank Edelblut. Thank you to Commissioner Edelblut for speaking and presenting the students with the citations. I would like to thank the NH Department of Environmental Services, especially Director Forbes, Ray Gordon and John Adie for hosting the dinner this year and I am also thankful to Artie Peterson and the staff at the New Hampshire State Library for allowing use of their beautiful library to hold this event. Each year NHWPCA Water Councilor and Monadnock employee, Mike Butler, ensures that we receive the paper that is needed to print the posters on. Thank you for your continued support each year! I would like to thank the NHWPCA President Kevin MacLean and other members of the Board for their continued support with this event. Lastly, a special thanks to the Communications Committee members and Board members that helped and/or attended this event: Ransom Horner-Richardson, Dave Mercier, John Adie, Ken Conaty and Mike Carle.

2017 Maine/NH WWTF Operator Exchange Program
Stephen Simeone City of Concord, NH

I would like to start off by giving many thanks to everyone who has worked so hard and put in so much of their valuable time and effort into making this wonderful program possible. As a new operator, this was a tremendously valuable learning experience for me. I entered the wastewater treatment world just 9 months ago. When Dan Driscoll told me that I was selected to be part of the operator exchange program, I was extremely honored and grateful. Clayton “Mac” Richardson (Lewiston-Auburn WWTF superintendent) was my tour guide and bodyguard for the three amazing days spent touring the Maine facilities.

Day 1 started out at the Sanford WWTF. This plant was very interesting to me as I had never seen an Oxidation ditch/lagoon/composting facility of this size before. Andre Brousseau is the Superintendent of the plant. He walked me around the facility and explained how the large oxidation ditch and lagoons worked. This was also the first time that I had seen such a large composting facility. To my surprise the composting odor was not strong at all. Andre explained how the sludge was mixed and heated to 145 degree and sold as Class A compost.

Our next stop was the beautiful coastal town of Wells. Wells WWTF was interesting to me because it was the first indoor plant that I had seen. They have their highest flows in summer naturally, due to the large influx of tourists to the region. Much like Sanford, there are no primary clarifiers at this plant. After the preliminary treatment, the flow goes directly to the aeration basin. Wells collection system is comprised of approximately forty miles of sewer systems with ten pump stations. The plant is rated for a flow of 2.0 MGD but averages between 0.4-1.5 MGD.

Our next stop was the very interesting RBC/Activated sludge plant in Kennebunk. This was
again a first for me, as I got to experience how a RBC plant worked. This plant has 12 employees and 28 pump stations. I got to see a map of the sewer system and I was blown away by the size. Kennebunk’s flow averages between 0.7-2.0 MGD. The plant consisted of one primary clarifier, a secondary clarifier, nine RBC’s and the aeration basin. They have a great Huber screw press which dewater the sludge before it is shipped.

After a great lunch at Duffy’s, Mac and I headed to the downtown plant of Biddeford. This plant is an activated sludge plant which averages 2.0 MGD and is rated at 6.5 MGD. Like Wells and Sanford, this plant also has no primary clarifiers. They have 2 aeration basins which cycle air flow for denitrification. When the air is cycled on, the wastewater is nitrifying, when the air is off, it is denitrifying. They also have a biofilter tower. Huber presses are used for dewatering sludge.

Our last stop of the day was the Scarborough WWTF. This plant treats approximately 1.2-1.4 MGD and is rated to 2.5 MGD and is an activated sludge plant. They have 2 primary clarifiers, 3 secondary clarifiers, a large aeration basin with 6 aerobic aeration tanks, 3 anoxic selector tanks. The outfall is approximately 3 miles out to sea. Their sludge thickening system is comprised of 3 hose geed pumps, and a gravity belt thickener. Two Fournier rotary presses are used for dewatering sludge.

Mac brought me to his tiny (yet very interesting) oxidation ditch plant bright and early on Wednesday morning. He runs this plant by himself on a part time basis. This plant serves the Windham High School, middle school and elementary school. This plant treats an average of 11,000 GPD with a max of 25,000 GPD. This is particularly difficult plant to run due to the fact that it is only fed by the school system. During winter and summer breaks, the flows are very low and the bugs are hard to control.

The next stop on Thursday morning was Mac’s other plant, the Lewiston-Auburn WWTF. This is an activated sludge plant that has an on-site composting facility as well as anaerobic digesters. The plant treats an average of 6.0-7.0 MGD and is rated at 14.2 MGD. The plant has a total of 21 employees and is run 7 days a week. I enjoyed this plant because it is the first time that I have seen a digester. I was fascinated at how efficient the digesters are. The methane gas produced from the digesters is used to power two co-generators which power a good portion of the plant.

Our final plant of the tour was the very interesting Oxford WWTF. This is a smaller plant that treats approximately 17 homes as well as the casino. A membrane bioreactor (MBR) treatment process is used to treat approximately 20,000 GPD. The plant uses microfiltration to separate the solids. It is the first MBR plant to be used at a municipal treatment plant in the state. At this time it is run by one operator.

To conclude the day, the Maine Water Environment Association treated me to 18 holes of golf at the beautiful Sunday River golf club. I did my best to pitch in with my four man team during the best ball tournament. I am not much of a golfer but I had a great time. My teammates were good sports and I was lucky enough to learn a few tips from them.

The following day I was able to attend the 2017 MWEA Fall convention. It was a great opportunity with many vendors and courses being taught. I was very fortunate to be a part of this whole experience. I appreciate everything that the NH and ME associations have done for me and I look forward to working with both again in the future.
Importance of an Operation and Maintenance Manual (O&M)
By John Adie, Environmentalist IV, NHDES

Operations and Maintenance Manuals (O&M’s) - are they really needed or are we wasting precious time and dollars on manuals we just don’t use?

My belief is “WE ABSOLUTELY NEED THEM!”
There is a section in the Manual of Practice No.11, Water Pollution Control Federation (MOP11) dedicated to O&Ms. A quote from the MOP11 states;

“The O&M manual provides an explanation of the basic equipment, its function, capabilities, and effect on other units and the factors which affect its operation. Besides being an instruction manual for inexperienced operating or management personnel, it is a useful reference for experienced personnel.

All EPA funded projects that were constructed under the construction grants program were required to be supplied with an O&M manual(s). These were to be available for use for start-up and updated at the end of 1 year of operating experience.”

Also the O&M manual is referenced in Volume II of the Sacramento Training Manual, and has a similar reading as MOP11.

The O&M is probably the most important document about your plant that you possess. In “dire straits” the O&M is usually the first reference that an operator will pull off the shelf to get out of a less than pleasant situation. It is the only document that has specific information about your unique plant and its intended design. It should contain such information as your permit, laboratory procedures, maintenance schedules, process information, diagrams and suggestions on how to run your plant based on the engineer’s design.

Notice how the words “suggestions on how to run you plant” were used. Every plant has unique wastewater coming to the plant which needs to be treated and how to start doing this is tucked away in the O&M. It should be assumed that the well trained operator, once familiar with the plant, will tweak the engineer’s suggestions, improve the process and the overall plant efficiency. I can hear the screaming voices, “we never even saw the O&M and we have been running our plant just fine!” Well, that’s great, but somewhere, somehow, someone, had information in a document to get the plant started and running. Somewhere in the process of becoming a well-trained operator, you must know the intended operation and design of your plant. This means you must familiarize yourself with your plant’s O&M and its information. A lot of time and effort by the design engineering firm, your rate-payer’s money, along with possible state and federal monies, is spent on this document. Your O&M becomes very important for any upgrade to your facility. Pre-upgrade, you are usually looking for your O&M. It becomes your “GO TO” manual for information about your unique process and design. The O&M helps to answer the design engineer’s questions for the upgrade, fills the information gaps and helps the new upgrade fit in with intended design of the plant.

The O&M describes the initial intent to operate and maintain the plant in a document form. When starting your plant for the first time, you need guidance, design intent and this information was provided in your O&M. S.O.P.s for operations, S.O.P.s for laboratory procedures, maintenance schedules and maintenance S.O.P.s can be created from the information in the O&M. A vendor list for critical equipment and contacts can also be created. If you are fortunate enough, you and your engineering firm have entered into the electronic age. Hopefully by now, you have received an electronic copy of your O&M. The electronic version will allow quick access for finding information. The O&M is intended to be a living document that describes your existing plant. New processes and equipment are always becoming part of your plant. Amending the O&M is a critical. It should reflect the latest equipment and corresponding changes in the plant’s design intent. Found in your plant library, it should be a dynamic document, updated as necessary.

So, in conclusion, please find, pick up, dust off, open and familiarize yourself with your O&M. Do not wait until your plant is in “dire straits” to take advantage of this important living document. Lots of time, effort and money have been invested in a document for your use and reference. The time you take to familiarize yourself with your O&M could be the difference in making an informed decision or a knee jerk reaction. Your O&M could help you avoid process upsets and possible violations.

Happy Holidays
Thank You!

to the

NHWPCA 50th Anniversary Committee

and all who volunteered

For the exceptional work they did on all the events to celebrate the Association’s 50th Anniversary.

NEW HAMPSHIRE WATER POLLUTION CONTROL ASSOCIATION

50th ANNIVERSARY 1967-2017
Getting to Know Your Association’s Board of Directors

With Two Truths and a Lie

Two Truths and a Lie is a fun and easy ice-breaker/getting to know you game. There’s no equipment needed for this game. Each person states two truths and one lie about themselves (in no particular order) and the rest of the group has to guess which statement is the lie. Here’s some statements from your board of directors – get in touch with each of them to find out which is the lie!

Kevin MacLean
1. I have not hunted for 23 years but continue to buy a license.
2. I share the same birthday with my youngest sibling (of 4) – we’re 14 years apart.
3. I am a descendant of William Wallace (Braveheart).

Noelle Osborne
1. I am an avid reader, averaging 4-6 books per month.
2. My favorite movie is Star Wars.
3. I hate apple pie.

David Mercier
1. I keep homing pigeons as a hobby.
2. I am an only child
3. I have been brewing beer for over 20 years.

Dustin Price
1. I have sat in the Captain’s Chair of the Starship Enterprise.
2. My karaoke stage name is Rusty Nail.
3. I have a tattoo of stalked ciliates on my chest.

Mike Carle
1. I was a professional diver.
2. I was an airplane pilot.
3. I was a boat captain.

Amy Pollock
1. I slept in a tent in the middle of the Serengeti.
2. I am Polish.
3. I have a minor in Entomology.
The NHWPCA would like to thank all of the Sponsors for their generous donations in support of the 50th Anniversary Celebration held in June, the honorary dinner held for Past NHWPCA Presidents, and in support of the 50th Anniversary promotional items. Their donations helped make these events a great success! It is the continuing generosity of our Sponsors that helps make our Association extraordinary.

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Visit the NHWPCA 50th Anniversary Store and place your order today!!!!

https://store.shirtmasters.com/nh-water-pollution-control-association/

Order before 11:59PM on Friday November 17, 2017 and you can **pick your items up at the Winter Meeting** in Newmarket/Durham on Friday December 8, 2017.

If you cannot attend the Winter Meeting, you can pick your items from the NH DES office in Concord, by coordinating with Ray Gordon, ray.gordon@des.nh.gov, (603) 271-3571 or Nancy Lesieur, nancy.lesieur@des.nh.gov, (603) 271-2985.