MERRY CHRISTMAS
TO NHWPCA MEMBERS

WINTER MEETING
December 5, 1996
Sheraton Wayfarer, Bedford, NH
(attendees will earn 0.3 CEU's)

Schedule of Events
Donuts & Coffee
Compliments of Operations Management International Inc.

8:30 to 9:00 ........................................ Registration
9:00 to 12:15 ....................................... Technical Sessions
9:00 to 10:30 ....................................... Safety & Safety Inspections
                                           Bill Cote • Compensation funds of N.H.
                                           Jack Jarvis • N.H. Dept. of Labor
10:30 to 10:45 ..................................... Break
10:45 to 12:15 .................................... Nutrient Removal
                                           Don Schwinn
12:15 to 12:45 ................................... Attitude Adjustment
12:45 ................................................. Italiano Buffet

A Taste of Italy
(Back by Popular Demand)

Italiano Buffet
Featuring: Chicken Piccata, Tortellini Carbonara,
Sausage/Peppers/Onions, Garlic Bread,
Soup, Salad and Dessert!

1:30 .................................................. NHWPCA Business Meeting

President Dave Brennan Presiding
Guest Speaker:
  George “Santa” Neill
  Gifts, Raffle & More!

For further information contact Doug Steele 742-2453
NHWPCA OFFICERS

President  Dave Brennan  
Vice President  Moe Gauthier  
Secretary  George Neill  
Treasurer  Rich Roy  
State Director  George Laney  
Past President  Keith Gilbert  

Director  Doug Steele  
Director  Mary Dowse  
Director  Charlie Richard  
Director  Bill Hall  
Director  Mike Sullivan  

Newsletter Committee:  John Currie, Dana Clement, Beverly Drouin, Harvey King, Greg Nason, Sharon Ostrander, Charlie Richard, Editor—Tom White  

Send articles to:  State of New Hampshire  
Department of Environmental Services  
P.O. Box 95  
Concord, NH 03302-0095  
Att: Tom White  

NHWPCA Directors Meeting  
November 7, 1996  

Attendees:  Dave Brennan, Mary Dowse, Doug Steele, Moe Gauthier, Bill Hall, Mike Butler, Charlie Richard, Keith Gilbert.  

Minutes from previous meeting accepted.  

Discussion regarding Operator Exchange Program (OEP) and the hospitality shown the participants in the exchange. Thank you letters from both participants were presented to the Board. Dave Brennan presented a letter be sent to the Maine Water Pollution Control Association addressing concerns regarding the OEP.  

The Board voted to reimburse Tom Burt for expenses he incurred during OEP.  

Overall the Fall Meeting was successful. Some glitches were encountered at the registration table when registration forms and monies were not recorded timely on the attendee list. Charlie and Mike will work with Rich Roy with some ideas to streamline the registration process.  

Mary and Doug will purchase some of the raffle prizes for the winter meeting. Donations of gifts from vendors are being solicited. Dave will take charge of the raffle ticket sales.  

Note pad cubes will be given to membership as a gift this year. Mary suggested that the course of the membership gifts is getting to great and suggested that the board look at alternatives or drop the practice. More discussion on her suggestion will follow at future meetings.  

The Trade Fair is scheduled at the Center of New Hampshire on Tuesday, April 1, 1997. There was a conflict with the availability of the hall for the traditional date and it was voted to move the meeting to the new date. Notification will appear in The Collector and post card reminders will be sent to vendors.  

The board is looking for ways to bolster interest in the Trade Fair and Business Meeting. Bill brought forth a consultants point of view about feelings somewhat out of place at a trade fair for operators. A committee was formed to explore ways to improve the Trade Fair with Mike Sullivan, Bill, Doug and Moe serving on that committee.  

There will be a guest speaker invited to speak at the Trade Fair. If that person declines, there will not be a guest speaker. The Raffle will be held following the Business Meeting.  

Mike Sullivan is looking for volunteers for the Speakers Bureau. Mike Butler felt that the Association does well enough getting speakers and felt that we need not get involved with the Speakers Bureau.  

Mike B. reported to the Board about the Biosolids Committee meeting held on October 11, 1996.  

Discussion concerning the Associations data bases, notices through the mail, graphics capabilities to produce those notices, and support to the various committees was taken up. It is time to explore more efficient means to deal with these issues.  

Dave will ask for budget requests from committee chairs to be presented at the December 19, 1996 Board meeting on the budget.  

Mark Your Calendars!  
NHWPCA Annual Trade Fair will be held on  
TUESDAY, APRIL 1, 1997  

Synergetics performing the "Pump Event" in Dallas. They missed 1st place by a few seconds.  

New Faces in Different Places  

Mike Gootee — has left Newmarket to help out Vicki Abbey in Exeter.  

Paul Roy — has been cited working for OMI in Dover. March-On Paul.
Operations Challenge 1996 - Year Four

The national Operations Challenge event was held on October 7 & 8, 1996 in Dallas, Texas. This was the fourth time that the New Hampshire team (Synergetics) was one of the representatives from the New England region.

Thirty-eight teams assembled for the competition. There were familiar faces among the teams that have made multiple appearances at the nationals but most were new teams. Still the overwhelming impression is the magnitude of the whole convention, the competition area, and the number of teams. It is all very big and what better place to have such an event but in TEXAS.

The events were all the same as last year with one exception. The Safety event was new in 1996. There were similarities with last year's safety event involving a rescue tripod and manhole atmosphere testing but this year, two team members had to put on self contained breathing apparatus and perform an equipment repair. It is a significant tangle of hoses, harnesses, and fall protection cables. This event is entertaining for spectators but a mad scramble for contestants.

The team had high hopes and confidence this year. Last year yielded a third place standing for the Synergetics among all the teams and we felt that there was definitely room for improved performance. However, it was not meant to be. The team made some mistakes which are so common during a competitive engagement. There is no good explanation why these slips occur but they happen and the result does not accurately reflect the proficiency that was developed in practice. It all indicated that pressure alters an individual's capacity to perform.

The results were not catastrophic. Our placement was seventh among Division I teams. This is very respectable and an accomplishment of which we can be proud. A seconde place finish in the pump event (we were just 1.7 seconds behind the first place team) gave us a trophy that we have been coveting for years. This discrepancy enters because we had hoped to do significantly better than this.

The benefit of the whole experience truly lay in the camaraderie established among the team members and all of those that have been such loyal supporters. Many hours of practice together and the stress of competition made a special sense of humor evolve and also made us strong together. It was another quality experience which translates into the ultimate victory. Thanks to all Synergetics members and all the interested and very helpful followers for another great Operations Challenge season.

1996 Operators Exchange Program

by Thomas Burt

Hello! My name is Thomas Burt. I am employed at the Henniker Wastewater Treatment Facility and have been working in the Wastewater Field for a year and a half. I have my grade I operators and grade I collections systems licenses.

I was recently selected by the New Hampshire Water Pollution Control Association to take part in the Operators Exchange Program. This was quite an experience, one that I hope you will all at one time or another have. This program gives an operator of any level an opportunity to visit another State and tour some of their plants as that States guest. Our Association gave me money so I would not have any out of pocket expenses. I left New Hampshire on Wednesday, September 11, 1996 and arrived at Willowdale Golf Course in Scarborough, Maine that same day. Tee time was 11:30 am and the weather was picture perfect. This week also happened to be the Maine Wastewater Control Association Fall Convention. After a full day of golf and awards I found my way to the Radisson Hotel in Portland where I ended my day. The next morning I met Mark Lorello (my host) in the lobby at 7:00 am for attendees registration. We toured the exhibits until 9:00 am, then I took the technical session on Process Control Indicators by Don Albert, ME-DEP and Steve Broadbent, Wright-Pierce. The rest of the day consisted of lunch at the business meeting and the poster awards. They have the school childs winning poster made into calendars. It is a neat way to acknowledge the child, water pollution control and the paper company that donated the paper.

While I was golfing I met Mike Green, the Portland Plant Manager. I mentioned I would be touring his plant and South Portland's plant, and Mike had everything ready for me when I got there. Mike Conley gave me the tour. He has been with the plant since 1979, and was real educational as he has seen a lot of changes in the time he has been there. The Portland plant is an activated sludge system. In 1972 the plant was designed to process 15.2 millions gallons per day of wastewater, and the effluent from the plant goes to Casco Bay. Next, I toured the South Portland plant. Jim Jones, the treatment systems manager, had Mike Peabey (a grade II Operator) give me the tour. The South Portland plant is about 20 years old and has a design flow of about 9.3 million gallons per day. This plant underwent a computer upgrade about two years ago. They also are an activated sludge system.

The last plant I toured was Kittery, Maine. John Tuttle (a grade II Operator), gave me a tour of their Sequential Batch Reactor Plant. They have a design flow of 5 million gallons per day.

As a new operator, the more I see other operations the better understanding I get of the different ways of treating wastewater. If any of you get the chance to participate in the operators exchange program, take it! I'm sure you will enjoy it as I did.
Nitrification/Denitrification at the Milford, NH Wastewater Treatment Facility

by Steve Hodge, Chief Operator

DESCRIPTION
The Town of Milford Wastewater Treatment Facility is an advanced secondary treatment plant constructed in 1982 to serve the communities of Milford and Wilton. The plant is designed to treat an average daily flow of 2.15 million gallons per day (MGD). Peak design flow is 6.45 MGD. The plant is designed to remove ammonia nitrogen using a single stage activated sludge nitrification process. Wastewater enters the plant through the main pumping station in which a bar screen, flow measurement equipment and three 60 horse power variable speed influent pumps are located. From there it is pumped to two 45 foot primary clarifiers. Primary effluent is conveyed to two three-celled aeration basins, each fitted with fine bubble diffusers. Mixed liquor from the aeration basins is conveyed to two 55 foot diameter secondary clarifiers. Secondary effluent passes through an ultra-violet disinfection system and is then discharged to the Souhegan River.

Primary sludge and secondary waste sludge are blended in primary clarifiers and thickened in gravity thickeners. The thickened sludge is dewatered using a belt filter press and then composted on-site.

PERMIT LIMITATIONS
As is the case with other wastewater facilities throughout the state of New Hampshire, the Milford NPDES permit has become quite stringent. When the facility went on-line in 1982, permit limits for TSS, BOD and ammonia nitrogen were as follows:

<table>
<thead>
<tr>
<th></th>
<th>Monthly Average</th>
<th>Weekly Average</th>
<th>Maximum Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSS</td>
<td>30 MG/L</td>
<td>45 MG/L</td>
<td>50 MG/L</td>
</tr>
<tr>
<td></td>
<td>538 Lbs/Day</td>
<td>807 Lbs/Day</td>
<td></td>
</tr>
<tr>
<td>BOD₅</td>
<td>20 MG/L</td>
<td>25 MG/L</td>
<td>25 MG/L</td>
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<tr>
<td></td>
<td>359 Lbs/Day</td>
<td>448 Lbs/Day</td>
<td></td>
</tr>
<tr>
<td>Ammonia Nitrogen</td>
<td>1 MG/L</td>
<td></td>
<td></td>
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</tbody>
</table>

By comparison, present permit limitations for the Milford facility are as follows:

<table>
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<th></th>
<th>Monthly Average</th>
<th>Weekly Average</th>
<th>Maximum Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSS</td>
<td>15 MG/L</td>
<td>25 MG/L</td>
<td>30 MG/L</td>
</tr>
<tr>
<td></td>
<td>269 Lbs/Day</td>
<td>448 Lbs/Day</td>
<td>538 Lbs/Day</td>
</tr>
<tr>
<td>BOD₅</td>
<td>7 MG/L</td>
<td>14 MG/L</td>
<td>16 MG/L</td>
</tr>
<tr>
<td></td>
<td>126 Lbs/Day</td>
<td>251 LBS/Day</td>
<td>287 Lbs/Day</td>
</tr>
<tr>
<td>Ammonia Nitrogen</td>
<td>1 MG/L</td>
<td></td>
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<tr>
<td></td>
<td>269 Lbs/Day</td>
<td>538 Lbs/Day</td>
<td>628 Lbs/Day</td>
</tr>
<tr>
<td>BOD₅</td>
<td>10 MG/L</td>
<td>23 MG/L</td>
<td>25 MG/L</td>
</tr>
<tr>
<td></td>
<td>179 Lbs/Day</td>
<td>412 LBS/Day</td>
<td>448 Lbs/Day</td>
</tr>
<tr>
<td>Ammonia Nitrogen</td>
<td>6.5 MG/L</td>
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NITROGEN REMOVAL
As can be seen by the permit limits (bottom, left), the Milford facility is required to remove ammonia nitrogen on a year-round basis. A few of the reasons for ammonia removal include:

a) Ammonia is toxic to fish and other aquatic life, even in low concentrations
b) Ammonia imposes a high oxygen demand on the receiving stream
c) Ammonia of course is a nutrient which will stimulate the growth of algae
d) Ammonia may inhibit some facilities from passing toxicity testing

Biological nitrification is a two-stage process. In the first step, the micro-organism nitrosomonas convert ammonia to nitrite. In the second step, the micro-organism nitrobacter converts nitrite to nitrate. It is important to keep in mind that ammonia nitrogen is not removed from the wastewater, it is simply converted from ammonia to less toxic nitrate.

Denitrification, on the other hand, is a one-step biological reaction which converts nitrate to nitrogen gas under low or no dissolved oxygen conditions. Anoxic Conditions. The nitrogen gas leaves the wastewater as gas bubbles. I had researched the denitrification process for some time and decided to implement the process during the summer of '96. Some would ask "why undertake such a project if a facility is not experiencing process problems and/or permit violations?" Here are a few of my reasons:

a) It would be a learning experience for myself and others at the Milford facility
b) Nitrate nitrogen is a nutrient which can adversely impact the receiving stream, much like ammonia nitrogen but to a lesser degree
c) The nitrification reaction consumes 7.2 pounds of alkalinity for every pound of ammonia that is converted to nitrate. The alkalinity consumed during the nitrification process is counteracted at the Milford Facility by adding magnesium hydroxide as a buffer. The denitrification reaction produces 3.6 pounds of alkalinity per pound of nitrate converted to nitrogen gas. Obvious chemical savings could be incurred.
d) During the denitrification process bacteria utilize oxygen contained in the nitrate nitrogen to break down BOD (carbonaceous organics) rather than oxygen supplied by the plants diffused aeration system. This could result in power savings because less air and thus power would be needed to drive the aeration process.

The benefits of running a biological nitrification/denitrification process are clear. The question was: could the facility maintain permit compliance for ammonia, BOD and TSS while implementing such a process?
THE PLAN

On a couple of occasions, I had discussed the idea of implementing an anoxic zone with Tom White of the Department of Environmental Services. Tom and I met with representatives from the Town's engineering firm to discuss possible options. The main option discussed was to return two times the Q of nitrified mixed liquor from the effluent end of the aerobic zone back to the influent end of the anoxic zone. Some of this flow would be returned with two 4 HP submersible pumps which we had on hand at the plant. The remainder of the flow would be returned using the existing return activated sludge pumps. Because this excess flow would considerably shorten the hydraulic retention time of the aeration system, four aeration tanks (and possibly as many as six tanks) would be needed to maintain the nitrification/denitrification process. Baffles would also have to be constructed in two of the six tanks (tanks 3 & 4) to separate the anoxic zones from the aerobic zones. I considered this option an ideal way to run a nitrification/denitrification system, but it would be time consuming to wire two pumps, install discharge piping back to the head end of the anoxic zone for those pumps and to install two baffles. After some thought, I decided to dedicate aeration tank #3 as the anoxic zone for denitrification and, of course, tanks #1 and #2 the aerobic zones for nitrification. I knew that this option would probably not convert as much nitrate as the first option mentioned, but felt it was worthy of at least an attempt.

![Diagram of 3 Tank Configuration](image)

The 3 Tank configuration used at Milford WWTF.

PLANT/PROCESS MODIFICATIONS

As mentioned, aeration tank #3 would be used as the anoxic zone. Mixing would be needed to keep the solids in suspension. To accomplish this a steel beam longer than the tank width was purchased. The beam was placed in the middle, across the tank. One of the four-inch submersible pumps mentioned earlier was suspended from the beam into the anoxic basin. The air to the anoxic zone was turned off and the submersible pump turned on. The mixing action being done by the influent flow to the tank and the pump kept the first two-thirds of the tank mixed well, but there was not much movement in the last portion of the tank. To compensate for this, the air was turned on to that portion of the basin. Just enough air was added to keep the mixed liquor in suspension. The dissolved oxygen was monitored very closely and kept at .2 MG/L or less in this portion of the tank.

Milford WWTF Chief Operator Steve Hodge surveying the "Anoxic Zone" with mixer submerged and supported by the I beam.

With the air off to the first portion of the tank, it was very clear that a short circulating problem existed. The primary effluent RAS mixture drops into the tank from the aeration tank D-Box near the tank sidewall. The energy created caused short-circuiting along the length of the wall. Plant personnel constructed and installed a baffle to alleviate this problem.

Only one process change was made to convert to a denitrification mode. The return-activated sludge was increased by approximately 26%. MRCT and other process parameters remained as they would have been when we were just running the nitrification process. It is important to emphasize that no internal recycle is being used as with other denitrification processes. It must also be noted that since a carbon source is needed to trigger the denitrification reaction many facilities that run this type of process will add a carbon source such as methanol or sugar. The Milford facility relied on primary effluent as its sole source of carbon.

THE RESULTS

On July 2nd, modifications made to the anoxic zone process were in place and sampling could begin. Sampling and testing for nitrate, TKN, Ammonia and Alkalinity were carried out. Sample locations included raw influent, primary effluent, anoxic zone influent, anoxic zone effluent and final effluent. On July 3rd, the secondary effluent nitrate (grab sample) was 7.1 MG/L. This was more than a 50% reduction compared to the previous month's average of 15 MG/L. An effluent ammonia nitrogen test (composite sample) result was .335 MG/L. Knowing now that denitrification was occurring and an alkalinity kickback would be seen, the magnesium hydroxide chemical feed system was turned off. The anoxic zone was on-line from July 2nd until the first of October. During this time period, the pH of the aeration tank aerobic zone and the pH of the secondary effluent remained at levels normally seen with magnesium hydroxide addition. Effluent alkalinitities also remained within normal process ranges with an average of 62 MG/L during the three month period. Calculations were

Nitrification — Continued on next page
Nitrification — Continued from previous page
performed on primary effluent alkalinity versus primary effluent ammonia nitrogen. As I had found in the past, there simply was not enough alkalinity entering the plant to support the nitrification process. Knowing that nitrification was taking place, I can only assume that alkalinity was being produced within the process.

There was not a significant amount of testing completed on primary effluent and effluent TKN, but the testing that was completed showed removals that averaged 90%. Secondary effluent ammonia nitrogen averaged .415 MG/L during the month of July, .367 MG/L during the month of August and 1.22 MG/L during the month of September. There were four ammonia violations during the month of September, only two of which were process related. It must be noted that secondary effluent TSS and CBOD limits were not violated. During the three month period, secondary effluent TSS averaged 11 MG/L while secondary effluent BOD averaged 3 MG/L.

CONCLUSIONS
Overall, the results achieved implementing a biological nitrification/denitrification process were pleasing. First and foremost, the facility saved $4,000 in chemical costs over the three month period. Because the facility utilizes only one blower for aeration, power savings (if any) were minimal. The nitrification/denitrification process was no more difficult to control than the nitrification process itself. Even though major savings were not incurred, the operation of the denitrification process required no capital investment and only minor process changes. TKN leaving the facility was very low as can be seen in graph #2.

Sampling Techniques and Holding Times — considering the micro-biological activity occurring in most samples taken during this study we recommend the following: 1) Alkalinity—run on grab samples—ASAP. 2) Nitrate—preserve samples on any samples with M.L.S.S. in them.

Next summer the Milford Facility will again implement the nitrification/denitrification process. A few changes will be incorporated into next year’s process, including:
1) The installation of a submersible mixer in the anoxic zone. This will greatly simplify the mixing process.
2) Primary clarification will be partially or fully bypassed to increase the carbon/nitrogen ratio within the anoxic zone. This should lead to more nitrate conversion.
3) BOD reduction through the anoxic zone will be researched.

I would like to thank Tom White of the Department of Environmental Services and the following Milford Wastewater Treatment Facility staff members: Tom Neforas, Lab Supervisor; Larry Anderson, Operator; and Earl Potter, Maintenance Mechanic for their support and input on this project.

GRAPH #1
ALKALINITY PROFILE MILFORD WWTF

GRAPH #2
MILFORD WWTF
TKN REMOVAL 1996

The Homemade Baffle at the Anoxic Zone Influent
The Littleton Wastewater Treatment Facility

by Maurice Lambert and David Sircle — Woodard & Curran

The Littleton Wastewater Treatment System, located in Littleton, New Hampshire, is owned and was originally operated by the Town of Littleton. Built in 1965, its original construction consisted of a primary clarifier, sludge disposal operations, and chlorine for disinfection. In 1989 the facility was upgraded to include a carousel activated sludge system, ultraviolet disinfection, sludge thickening, and dewatering equipment, and provisions for an extensive odor control system. With this design, the system has the capability of removing up to 95 percent of pollutants prior to discharging effluent to the Ammonoosuc River. The Littleton facility was turned over to contract operations approximately 15 years ago.

With the depth of support offered by contract operations, on-site managers and operators are fully supported by a team of process and design control experts, engineers, and scientists. Some issues that were identified, addressed, and resolved include the following:

- **Measure of Effluent:** A safety issue was raised regarding measurement of the crest of a v-notch weir. The plant staff developed a system called “tee handle”. The tee handle has two pivot points that go from one side of the effluent channel to the other, and a long center that extends to the crest of the water. A yard stick was attached to the long extension so that the bottom of the yard stick was equal to the bottom of the v-notch. A pin is set into one of the pivot points to keep the tee vertical for a measurement. At this point, accuracy is verified against the flow meter. The system was implemented to minimize the health and safety risk of personnel extending over railings to measure weirs.

- **UV Test Unit:** Facility personnel built a UV test unit designed to bench test individual rebuilt UV tubes prior to placing them into service. A spare UV rack was placed in line with a 20 amp single pole switch for each tube. The power cord was replaced and a ground fault circuit interrupter (GFCI) is used to protect plant personnel. As a result of this process change, UV tubes can now be tested prior to installation, thus minimizing plant personnel contact with transporting UV tubes, which are susceptible to breakage, around the plant.

- **New Grit Container:** As the local landfill was closing, plant personnel and Town officials needed a new idea to handle the grit and rags at the plant. The existing system used two carts that would be filled over the course of several weeks, after which the staff would remove them with a two-ton hoist and load them into a 5-ton truck and transport them to the local landfill. Along with the Client, the staff designed a system whereby a new grit container was built with a two-door hatch entry. The right side of the container receives grit automatically, and a ramp on the left side allows the container to be loaded with a wheelbarrow from the bar rack. When the container is full, it is easily picked up and transported to a lined landfill.

- **Direct Drive versus Varigear:** After five years of operation, the Varigear units on the RAS pumps started to fail. Working with the Town Engineer, the plant staff researched different options for these drives. The options were to replace parts or install a completely different system. After investigating the options and with the help of the Town Engineer, the decision was made to replace the Varigear drive with an AC direct drive unit. By changing this drive unit, the horsepower (HP) requirements were reduced from 25 to 7.5 HP. With this change, the ability to return sludge back to the aeration ditches was only reduced a small amount. Additionally, with this change, there will be a substantial power savings without jeopardizing the operations of the plant.

As evidenced by the above tested improvements, a highly skilled Contract operations staff, working closely with the Public Works Superintendent, Town Engineer, Town Manager, and Selectmen, can coordinate repairs, replacements, and process improvements while keeping the facility in compliance and keeping the Client informed of how their dollars are being spent.

The above noted changes, in conjunction with in-house training of staff, has enhanced the overall operation and maintenance of the facility while stabilizing costs. Over the past 12 months, Littleton effluent removal for BOD and TSS was 98.0% and 97.2%, respectively, which far exceeds the 85% permit requirement. The plant has had no effluent violations and is currently in the process of implementing an industrial pretreatment program scheduled to go into effect in early 1997.
Biosolids Bulletin

As you may already know, the NHWPCA formed a Biosolids Committee about one year ago to address some of the hot issues surrounding biosolids use and disposal in New Hampshire. To date there have been over twenty different Association members who have attended committee meetings and have been involved with projects including a review of the new state sludge and septage rules, testifying to the legislature about wastewater treatment and biosolids utilization programs, participating in County educational forums, hosting WWTF tours, and developing handouts for the public about biosolids quality and production.

The Committee is gearing up to review Round II of the NHDES sludge and septage rules which are due out in the early part of December. These rules are likely to remain fundamentally the same as the first set published on March 19, 1996, with some changes. Based on feedback from NH-DES the areas being considered for change are metal limits (for arsenic, cadmium and mercury), requiring site permits for biosolids landspreading sites, and inclusion of soil criteria for landspreading sites. Some other areas of concern which the Association would like to see addressed include the $1/wet ton annual fee (change to dry ton basis), some of the setbacks, and that mixing on a site not require a facility permit.

The Committee is developing a strategy to address some of the research needs identified for biosolids issues. Some topics considered for research include dioxin levels in NH biosolids, pathogen destruction especially as it relates to anaerobic digestion, metal movement in soils and groundwater looking at a worse case scenario, forest spreading, and odor control. Collaborative efforts are underway with the NHDES to identify funding sources.

Public education and outreach continue to be the most important avenues for the Association to teach concerned citizens about biosolids production and utilization. The Association needs to be even more active in this area as the "anti-sludge" groups are receiving a great deal of press coverage, while the positive biosolids stories remain unknown. It is imperative that every Association member take the initiative to get a story in your local newspaper about the success of wastewater treatment and the need for reasonable recycling options for the biosolids. It is likely that many more communities will consider local ordinances or regulations restricting biosolids utilization, or even banning this activity for town meeting. Please try to meet with your local officials and educate them about the benefits of biosolids recycling.

The Biosolids Committee is open to any Association members who would like to participate in the issues outlined above. If you would like more information contact Shelagh Connelly, Chair of the Committee at White Mountain Resource Management, Inc. at (603) 253-8418.