Fall Meeting

The NHWPCA is proud to present FALL MEETING, 1996. It's all happening down in beautiful Merrimack, NH.

The Award Winning Merrimack Wastewater Treatment Facility will be hosting us for an exciting morning, with free tours highlighting their Activated Sludge System with Roughing Filters, Retro-fitted Fine Bubble Aeration Diffusers, and In-vessel Composting! In 1995 they received the Outstanding Civil Engineering Achievement Award from the ASCE-NH Chapter. Not satisfied with one award, they also captured the EPA Nationwide BEST IN CATEGORY AWARD!

Coffee and doughnuts will be provided, compliments of Rist-Frost Shunway.

The elegant Merrimack Hotel will then provide a cool environment for Operators to gather and exchange ideas. They will follow the refreshment hour with a Royal Buffet Feast, featuring Chicken Marsalla, Baked Schrodr, tossed salad, and much more!

Fall Meeting — Continued on page 7

THE COLLECTOR
SHARE YOUR THOUGHTS Published Quarterly—Issue #3 Sept. 1996

A New Building — Part of the Henniker Upgrade

Septage and Biosolids Handling Upgrades
HENNIKER, NEW HAMPSHIRE
by Ken Levesque

SEPTEAGE HANDLING
Prior to the installation of a new septage receiving station at the Henniker Wastewater Treatment Facility, the only way to receive septage was directly into the aeration tanks, which resulted in slug loads of septage to the process.

As a result of an increase in the demand for septage disposal and an increase in permit monitoring requirements, a decision was made to eliminate septage receiving at the Henniker facility until improvements in septage handling could be implemented.

Four alternatives to improve septage handling were evaluated. ALTERNATIVE #1 – Consisted of an enclosed mechanical bar screen to be located in a new structure adjacent to the existing headworks building. ALTERNATIVE #2 – Consisted of a package Lakeside Septage Acceptance Plant constructed in the existing sludge dewatering building. ALTERNATIVE #3 – Consisted of a package Lakeside unit constructed in a new structure adjacent to the headworks, with ALTERNATIVE #4 including grit removal integral to the Rotamat unit.

A preliminary cost estimate showed that the added cost to provide grit removal as part of the septage pretreatment process was considerable, this fact, combined with the fact that there were no primary clarifiers, primary sludge pumps, or anaerobic digesters to be adversely impacted by the accumulation of grit, lead to a decision by the town that grit removal not be included as part of pretreatment. This eliminated the most expensive option from further consideration.

From a convenience standpoint, the construction of a new, enclosed septage receiving facility adjacent to the existing building was considered ideal, but the cost of constructing an enclosure was significant. After discussing the options, preference was given to locating the septage receiving facility in the existing structure that houses the sludge dewatering equipment. Although this building is located some distance from the control building, that location eliminated the need of constructing a new enclosure. The reductions in cost obtained by eliminating grit removal and the need to construct an enclosure to house the equipment resulted in the commissioners supporting alternative #2.

Septage and Biosolids — Continued on page 8
NHWPCA Officers

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

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
June 27, 1996

Attendees: Dave Brennan, presiding; Keith Gilbert, Charlie Richard, George Laney, Moe Gauthier, Bill Hall, Doug Steele, Mary Dowse, George Neill and Rich Roy.

Committee Chairs: Tom White, Joe Ducharme, John Bush and Larry Untiet.

1. Approval of last meeting’s minutes with one change.

2. Summer Outing: Rich Roy reported that the outing went well and that we ended up in the black; 185 tickets were sold. In spite of less than wonderful weather, about 170 showed up. A follow-up meeting to discuss the logistics of the outing will be held in the Fall.

3. NEWEA Membership: John Bush discussed the recent increase in NEWEA dues and whether or not NEWEA should offer a “dual membership”, i.e., a lower membership fee for operators to join NEWEA only with no benefits from WEF. John was concerned about the impact such an approach would have on the NH Association; in other words, would members leave us to go to NEWEA for only an extra $10-$15? The general consensus was that lowering NEWEA’s PWOD membership to say $25/yr., wouldn’t necessarily encourage our members to jump ship. We’ll be hearing back from John after the NEWEA Executive Committee meeting next month.

4. Committee Chairs: Due to individual time constraints, the committee chairs were allowed to discuss their respective programs.

a. Newsletter Committee: Tom White discussed the need for more committee members and quality articles. He wants to expand the network of people out in the field; i.e. “Reporters” who will interact with other operators (or whomever) to encourage articles and additional feedback to the Editorial Board. The awarding of CEU’s to contributing writers was discussed in order to encourage participation in the newsletter. Discussion ensued about paying the newsletter printer to directly bulk mail it, thus saving days in turnaround – it was so voted!

b. Public Relations Committee: John Jackman told the board of the available Homepage, through NEWEA, on the Internet. John Currie is willing and able to periodically update this home page. John Jackman handed out hard copies of what has been drafted thus far.

The Public Relations Committee recently met to judge the posters and to discuss the direction of the Committee. Minutes of this meeting were submitted. They’ve been looking out to ascertain the names of environmental editors in various publications so that direct contact can be made to them when various relevant press releases occur. We may be able to get better press this way and to attain a higher profile. Our booth will be travelling to both the Vermont and Maine Trade shows this year to expand our exposure.

c. Education Committee: Joe Ducharme reported that Committee participation remains very good. Members continue to help out a lot by getting speakers and instructors and at times participate in seminars themselves. Joe is looking into getting a display case for the FTC so that announcements can be posted and news can be disseminated. He also brought up the idea of cross training at different WWTF’s, sort of an intrastate exchange program, so that an operator could see various treatment processes and procedures and learn about something different. The details of this program are still being worked out.

d. Scholarship Committee: Keith Gilbert reported that this committee is a little behind schedule. They are about to review and award the two high school student scholarships, each worth $1000.00. They must review 28 applications. Three member scholarships were awarded earlier this year.

e. Biosolids Committee: The next meeting is to take place the following week to discuss state rules and concerns, along with public relations concerns. Doug also mentioned that renowned lecturer, Dr. Rufus Chaney, spoke in Concord the night before on beneficial use of biosolids.

5. NEWEA Update: George Laney gave the board information regarding NEWEA awards. The nominations of which are due in September. Specifically, the Operator of the Year, Al Pelouquin, Safety, and a new Collection Systems award.

• The Operators Challenge was won by our own NH Synergetics at the Spring Meeting! Well done! They kicked buttocks! NEWEA has decided to continue with the two challenge runoffs, one each in northern New England and Southern New England.

• Ken Carlson of NEWEA Public Education Committee would like to meet with directors to discuss the speaker’s bureau. He’ll be invited to our next Director’s meeting.

• George L. asked the directors to donate $200 to help subsidize a dinner for all New England participants in the National Operators Challenge this October in Dallas, Texas. The board voted unanimously in favor.

Directors Meeting — Continued on adjacent page
George W. Burke Jr. Facility Safety Award Application

DESCRIPTION
The WEF George W. Burke, Jr. Facility Safety Award is presented through NEWEA to a selected municipal or industrial wastewater facility in recognition of a documented illustrated safety program and safety record. The award is presented to the selected facility at the annual NEWEA meeting.

PURPOSE
To encourage an active and effective safety program in wastewater facilities and to stimulate the collection and reporting of injury data.

SELECTION
The award applicants are evaluated and selected according to the following criteria. An on-site visit by the NEWEA Safety Committee may be included during the evaluation process.

CRITERIA
The application should be tabbed and organized according to the following criteria. Applications will also be judged on the basis of overall presentation quality:
1. Personal Safety Awareness Program
2. Orientation Program
3. On-going Training Program
4. Inventory of Safety Equipment
5. Injury Occurrence Statistics
6. Personnel Check-off System of Skills
7. Program Which Extends Beyond the Plant
8. Any articles/publications/presentations done by facility workers on safety topics to organizations outside the facility
9. Member Affiliation with WEF
10. An Outstanding Feature
11. Highlights of the current Safety Program
12. Safety Committee Minutes for previous year (1995)
13. Evidence of worker participation in the Safety Program

APPLICATION PROCEDURE
Applications must be contained in a single binder no larger than 4" wide and received by January 15, 1997.

6. Winter Meeting: Doug and Mary have booked the Bedford Wayfarer for Thursday, December 5 for the annual Winter Meeting. Doug asked the board to give input about potential seminar topics. Two major items discussed; municipal safety programs and nutrient removal. Mary will call “workman’s comp” for safety leads and Bill will talk internally with Stems & Wheler to find a speaker on nutrient removal.

7. Treasurer’s Report: Rich Roy reported on the financial status of the Association and that our obligations to the IRS have been met. He also reviewed the final breakdown of the Trade Fair and that we were in the black. He passed around an up-to-date income/expenses balance sheet for review. Much discussion ensued about the future of the Treasurer’s position and how we can streamline the work involved.

Safety Shirt Logo Contest
The New England Water Environment Association Safety Committee is looking for a new logo. The winner of the contest will receive a one night stay at the Annual Meeting and attendance at the Awards Luncheon.
Submission for the contest must meet the following criteria:
• submit 8½" × 11" single color ink and/or computer graphic of logo
• print name, address and phone number on back of submission
• logo must promote safety
• must be original
• extra consideration given for creativity and humor
Submissions must be received by October 15, 1996

Operator Safety Award
DESCRIPTION
This award was established by the NEWEA Safety Committee to recognize a wastewater operator for his/her safety initiative. This type of award is encouraged by WEF and is a portion of the criteria for the WEF National Safety Award. This award is also consistent with the Committee’s goals and purposes to recognize the operators of wastewater systems.

CRITERIA
The nominee must be an operator actively employed by a responsible operating wastewater entity on a facility site or collection system on a daily basis. Recognition is to be given to the operator for his/her safety initiative as demonstrated by improvements to a safety tool, procedure, implementation or policy or training that is now being used by the facility or system.
This award may be given annually as considered appropriate by the Safety Committee. The Safety Committee shall select a nomination for submittal to the NEWEA Special Awards Committee.
Nominations should be no longer than one page in length and should be submitted no later than October 15, 1996.

Forward all Safety Award Applications to:
NEWEA Safety Committee
Victoria Abbey
Town of Exeter
10 Front Street
Exeter, NH 03833

MISCELLANEOUS
Farmington — A new clarifier was put on line in Mid-July. Peripheral feed with full surface skimming. Water & Sewer Supt. Dale Sprague says “Sure beats skimming with a pool net.”
Marc Croteau is leaving Somersworth WPCF after 5 years of service to return to school. Marc added a lively and intense spirit to the facility.
Linda Loder — “new” secretary/lab person at Somersworth.
Thom Hoag has transferred from Rochester Public Works Department to Wastewater. Welcome aboard, Thom!
Patrick Coyne has been a summer intern at the Leachate Treatment Facility at Waste Management of NH’s Turnkey Recycling and Environmental Enterprises. Pat returns this fall to his studies in Environmental Sciences at Allegheny College.
The Truth, the Half Truth, Anything but the Truth

by I. Vino Veritas

Okay! It's your old pal Vinnie Veritas here, with the first installment of a three part series on honesty. Why an article on honesty in THE COLLECTOR? I honestly don't know. Or, maybe I do. THE COLLECTOR is a place for Wastewater Operators to meet and discuss the things that affect us: biosolids, disinfection, Operations Challenge, W.O.W., who is where doing what for whom, and more serious stuff, like who played Santa at the winter meeting.

It seems natural for a topic as important to our personal and professional lives as honesty to rear its head on these pages. The question should be: Why wasn't it here sooner? As Dustin Hoffman and Warren Beatty sang in the movie Ishtar, "Telling the truth is a dangerous business, honest and popular don't go hand-in-hand." It isn't always easy to be honest, especially in a culture that breeds professional liars (candidates), and offers very little support to people who tell the truth.

I lie. You lie. We lie. Everybody lies, so what's the big deal? A recent newspaper article presented some researchers who have concluded that it is healthy and necessary to lie sometimes. They believe that lies told to help another person maintain their self-deception are good, and lies that "don't hurt" anyone build better interpersonal relationships. And that physicians shouldn't necessarily be truthful to patients.

Vinnie disagrees. Over this short series I intend to make us all uncomfortable, and persuade you that ALL lying must stop for us to be truly healthy as individuals and as a society. Anything less leads inevitably to personal sickness and cultural decay.

Since you mention decay, I like the metaphor of tooth cleaning for the need for honesty. Brushing my teeth is not a natural thing: there is no built-in brush in my body. I recognize the need for it, to keep my teeth, so I do it! Twice a day, the brush goes in to remove little rotting food particles from my teeth. And once a day flossing to get the in-betweeners, requires a bit more effort and a higher degree of skill. Twice a year I travel up the road to see the Tooth Doctor, who has better tools to get in where I don't. If he and I do our jobs well, that's it! This year he strongly suggested getting those four impacted wisdom teeth out before they damaged the others around them. The Oral Surgeon went deeper than the Tooth Doctor!

Honesty can be like that: it works best when it is a habit, used regularly. Keeping my mind clear (of the things I need to remember when I lie) and my conscience clear (so I don't need digestive aids to deal with the nasty feeling in my gut) is easy when I regularly wipe away the rotten little lie particles that try to collect there. Against my best efforts they sometimes get caught between the fangs of grey matter in my brain. Then I use friends and family to help me floss: by fessing up to them about lies I've told them, and by letting them mirror my self-deceptions back to me. At times I need outside help, to go after the deep crevices and root problems. Clergy and mental health professionals can be appropriate.

Just like a treatment plant, a lie requires constant maintenance. You've got to know something about the equipment to work on it. So . . . these forays into the caverns of heart and mind will include casting some explosion-proof lighting onto a few areas: why we lie, when we lie, types of lies, how our culture helps keep us lying, and what the difference is between truth and honesty.

So, what about the difference between honesty and truth? Same thing, aren't they? They can be, but don't have to be. Truth can be simple Fact. A truthful person can say, "Yes, I ate your lunch while you were working in that manhole." (They speak the truth, but you wouldn't trust them with your lunch.) Honesty speaks Fact, and is also a way of Being. An honest person says, "No, I didn't eat your lunch while you were working in that manhole." (An honest person wouldn't eat your lunch.) Truth-speakers are not necessarily trustworthy. Honest people are safe to have around.

We all know someone who speaks candidly about most of what he thinks (he in this series is an inclusive pronoun, representing all persons, without regard to gender.) He may shock and surprise, and "feelings" are sometimes hurt. What is not in dispute is that you know what he thinks. There's no guesswork involved. Often when we try to guess what another person is thinking or feeling and base our own actions on it, we are wrong. Still, candid speech does not guarantee an honest person.

What are some types of lies? A lie can be a simple untruth: giving incorrect information. (Gee, I don't know who left that pump on Hand. The check is in the mail. Yes, but I didn't inhale.) It can be a twist or avoidance of the truth. (No, I didn't drink all your beer . . . there was one left. I'm waiting for a call-back with prices on those parts . . . but they probably won't call back before I call and ask for prices.) Probably the most common form of a lie is silence: withholding feelings or information, or not saying anything.

How about you? What do you think about all this? Does it matter if Wastewater Operators are honest in their work? In their reporting? Dealing with Vendors? With the public? At home?

Vinnie's tired now. If you disagree with what I'm saying here, talk to someone about it. A friend, spouse, or co-worker. Heck, you can even talk to those great guys at DES in the Operations Division. (Remember, they're from the Government, they're here to help!) If you agree with what you're reading here, talk to someone about it. Either way, drop me a line, care of THE COLLECTOR and add you two bucks worth (inflation) to the mix.

Well now, time to go. This has been more fun than scrubbing weirs, hasn't it? (Be honest.)

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For Sale

- Netzsch Nemo Progressive Cavity Pump — Model No. NE70A
- Reeves Vari-Speed Motodrive — Size 300 — 5 HP 1750-875 RPM
- Worthington Comminutor — Series “N” Size 12 Type C
- Roediger Lime Storage Hopper
  Model LFS 600 — Capacity 640 Lbs.
  2 – Euro-Drive Variable speed motors
- Roediger Reversible Discharge Screw Conveyor
  3/4 HP Euro-Drive 3 phase Variable speed motor
- Roediger Paddle Mixer
  Model RM 150 — 2 HP Euro-Drive 3 phase Variable speed motor
- Belt Conveyor — 18” x 9’ — 1.5 HP Euro-Drive Motor

May be seen at the Woodsville WWTF, Woodsville, NH.

Call (603) 747-3489 for more information.
Odor Control Improvements at Plymouth WWTF

by Gene Ronikier, Director of Operations

Odors and wastewater plants are not new partners, but the acceptance of these two together is becoming less tolerable by the general public.

Such was the case in the Plymouth Village District.

Although the original primary treatment plant had been nestled along the Pemigewasset River just off of South Main St. since 1968, process changes resulting from the 1991 Secondary upgrade began to highlight its presence, i.e. odors leaving the 10 acre site.

In order to focus in on what new processes were disturbing the commercial business area, an odor complaint form was developed. Both facility and business office personnel recorded the odor complaints on these forms until a clear pattern developed.

Two processes created consistent problems – 1) dewatering of solids by belt filter press and 2) receiving of septage and holding tank wastes. Both problem areas were close to each other thus a single control project was planned to alleviate the nuisance.

As with any sanitary engineering construction project, I requested that plans, specs and bid documents be developed for construction. A proposal was solicited from a reputable engineering firm, but when the Board of Water and Sewer Commissioners saw the $70,000 fee proposed their decision was swift and decisive. Do it ourselves.

An article requesting $50,000 in construction funding was passed at the 1995 Annual District meeting unanimously.

Odor control can be viewed as a 3 phase process. 1) Identify the source(s), 2) Eliminate its creation if possible. 2) Contain and capture the odors. 3) Transport and treat the odor containing airstream in a cost effective manner.

**Problem 1** – The belt press operation has been venting the room air directly to atmosphere and the sludge cake was collected in a dump truck located outside under just a carpert type roof.

**Solution** – Fully enclose the truck bay into an unheated garage, install an exterior pad mounted odor collection fan with 2,000 cfm sufficient to provide 18 room air changes/hour and create a slight negative air pressure in the belt press room, and install an odor neutralization misting system on the belt press to make the interior working environment more pleasant.

**Problem 2** – The 6-10 septic truck offloads per day were received in an exposed bar rack equipped open channel prior to storage in an underground tank. These very pungent odors were carried off site by the winds.

**Solution** – Enclose the channel area with a 3 sided shed type structure also connected to a 2,000 cfm collection fan. This fan is controlled by a 15 min. timer and automatic wafer valve activated by the truck driver.

For simple yet effective odor neutralization we constructed a 1,000 ft underground soil filter consisting of 15" PVC distribution header pipes, 8" PVC laterals, 1.5" PVC crushed stone bed, nylon bug screening fabric barrier, and 32" of 50/50 compost and woodchip media.

The construction process was straightforward. Simple site drawings were done on 11" x 17" paper, equipment and materials were spec’d and bought direct and subcontractors were hired for each phase consisting of building modifications, ventilation ductwork, buried piping, soil filter, fans and electrical supply and control.

Both systems are online and no odor complaints have been received thus far relating to these processes.

By utilizing inhouse construction management techniques the District got what it wanted and saved considerable monies. Final in-place project cost was $38,616. Now onto the next project . . .

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**ATTENTION**

A great training opportunity:

**"ASK THE EXPERTS! LAB CERTIFICATION AND THE BOD PROCEDURE!"**

October 22nd, 1996 @ the Nashua Marriott

Laboratory and operational personnel don’t miss out on this opportunity. A one time event! Dr. James C. Young, known in water/wastewater circles at “the BOD guy”, will be flown in from Penn State University for this one day workshop on certification and the BOD procedure. Dr. Young is a contributing author to Standard Methods For The Examination of Water and Wastewater, and Chairman of the Standard Methods BOD Committee. Questions and discussion will be encouraged. Also find out everything you need to know about Laboratory Certification in New England, National Certification and EPA’s perspective on Lab Certification. Certifying officers from each of the New England States, and Arthur Clark, EPA Region I, will be on hand. Now’s your chance to ask those tough questions. Register early, space is limited, again this is a one-time only workshop, sponsored by the NEWEA Laboratory Practices Committee. (Gain CEUs too!)

For more information or registration please contact:

Therese Bonnet, New England Water Environment Association • Phone # (617) 658-4048
Nancy McAuley-Lesieur, Nashua WTP, NEWEA Lab Practices Committee • Phone # (603) 594-3365
Organic or Inorganic

by Allwynne Hellfach

In this age of recycling we are faced with many avenues to accomplish our goals. As our scientific and technology abilities make advances in the manufacture, production and ability to recycle our products, we, the user and producer of the wastes need to educate ourselves as to the most beneficial way to utilize the end product.

As a Wastewater Treatment Plant Operator and Laboratory Technician, I have first hand experience with a portion of the recycling issue. Treatment Plants work in a number of ways but they all do basically the same thing. By using naturally occurring microorganisms, light, oxygen and photosynthesis these facilities are able to take the sewage, septage and pretreated industrial waste and turn it into a high quality effluent which does not negatively impact the environment.

Unlike in years past when there were no true regulations or guidelines, the recently approved Federal and State sludge regulations and guidelines are very restrictive. All land application sites as well as the sludge itself must pass very stringent tests. Through best management practices we can truly recycle an organic substance, while benefiting our soils and improving the yield per acre.

If you are a farmer you know the importance of Nitrogen, micronutrients, and the trace minerals and metals that are essential to proper growth and development of both animals and humans. Historically, we have used inorganic fertilizers which are not only costly but have other less than beneficial consequences as we have seen over time in the Midwest. One of the problems that have arisen from years of inorganic fertilizer application is the percentage of organic matter decreasing in our soils, this in itself lessens the moisture retention capabilities of the soil causing other problems.

By adding a granular chemical fertilizer that does not have any organic matter, we take the risk of making our soils less able to retain nutrients and moisture making the soil more granular (sandy). Does any one remember the “Dust Bowl Years” in the western part of our country? Inorganic fertilizers are highly soluble, meaning that once you get a couple of good rains the percentage of available nitrogen decreases, therefore having to add more nitrogen when corn plants are ten inches tall, again more costs! The fact that they are more soluble also increases the risks of contamination of our water supply.

The use of biosolids as a fertilizer is an emotionally charged issue. We in the United States have been taught to treat human wastes as dirty, with no beneficial uses. Although, animal wastes have been considered very good and have been utilized to improve our soils. The interesting fact about human wastes and animal wastes is that they are basically the same. The same minerals, vitamins, and micronutrients that animals need for proper growth and reproduction are the same ones that humans need. Incidentally, they are also necessary for all plant growth.

Crops that supply our food and animal needs are grown in soil. In order for growth these plants need fertilization and water. Necessary soil fertilizer nutrients include carbon, hydrogen, oxygen, phosphorus, potassium, nitrogen, sulphur, calcium, iron, magnesium, molybdenum, boron, copper, and zinc. Using these nutrients and sunlight, plants manufacture organic carbon rich foodstuffs such as carbohydrates, fats and proteins.

Have you ever heard the saying, “what you eat is what you are?” Well, what you put down your drain is what’s in sludge! The waste water that leaves your home or place of business is treated at a treatment plant. To maintain a live, viable treatment system some of the solids and microbes must be wasted from the system, this is what “sludge” is. The sludge goes through further treatment, producing quality organic fertilizer that may be used instead of the factory produced inorganic fertilizer. This sludge must pass a battery of tests for pathogens, vector attraction and metals, before approval for land application. The E.P.A. has issued a set of rules and regulations for states to follow. Many states, counties, and towns are adding their own restrictions, some going so far as to ban the application of biosolids to Agricultural land. I fear that these decisions are being made without educational or factual information, by the uninformed or misinformed “Hell Fire and Brimstone” speakers that seem to be very well published.

To all of you that are banning the spreading of Biosolids in your towns, whether you are on a Municipal Sewer system or on your own septic tank and leach field, you the user are ultimately responsible for what goes down your pipes! If you ban it, where do you think you will truck your septic tank pumpings to? Maybe the Treatment Plants will ban the acceptance of your towns pumpings. If you don’t pump your system then it will fail in time and not only cost thousands of dollars, miles of red tape but also potentially may contaminate the local water supply!

In my own state of New Hampshire there is loud controversy against the application of Biosolids. Our only other recourse is to land fill, which has its own problems; the availability of sizeable acreage with appropriate soils, the risks of contamination through overloading of a small area, increased costs of lining, capping and testing of that site for years to come.

Or we could incinerate the sludge, but the costs are extremely prohibitive, with the nearest incineration plant in New York. Dioxins, which seems to be what many people are concerned with, come from the heating of chlorine molecules.

I cannot for the life of me understand why the general public has virtually no problem with farms spreading untreated, untested, acidic animal manure, but raises such loud voices against Biosolids which are tested, documented, regulated and the site is tested. The same minerals, micronutrients, vitamins and additives go into our animal feed as into our food stuffs. The sludge that is finally approved for land application has to pass its own set of tests and then the site must have been tested for soil type, permeability, metals, micronutrient levels and many other physical limitations. So with all these tests, regulations and restrictions on sludge and not on manure, the general public’s attitude is somewhat baffling to me.

The spreading of Biosolids has had a long history of use and corresponding studies in Europe, the Netherlands and other countries where due to lack of land within their countries’ borders, have learned the importance of true recycling!

I call on my fellow horse enthusiasts to educate themselves and others to the importance of pastures and hay fields that provide our horses with the best possible source of nutrition. We must always remember that the equine is a grazing animal and would potentially have less health problems if they could receive all of their nutrition in the manner that their digestion system is designed to work.
How Healthy is Your Budget?

What do small communities and large communities have in common? The answer: Budgeting problems. Every community goes through the process with each department justifying its own budget estimate and scrutinizing each line item to determine if it absolutely needed in this year's budget. For most people involved in municipal budgeting the process is at least frustrating, and for others it can be down right painful. Trying to meet new mandates, address maintenance upgrades, keep pace with inflation, and not raise user rates can become a daunting task. It's no wonder that when the issue of maintaining a reserve fund comes up a predictable response is given such as: “Yes, yes, that sounds prudent and perfectly logical, but we're barely hanging on from day to day. Do you think we have the luxury to plan for the future?”

This weary protest often comes from some of the most conscientious and well intentioned public officials. They simply find themselves between a rock and a hard place when it comes to planning for the future with limited resources. But there's something about the use of the word “luxury” here that is bothersome. Is it a luxury to take reasonable measures now to guard against the inevitable? The inevitable down-time of equipment; the inevitable improvement needs of your community infrastructure; the inevitable need to meet state or federal mandates. When viewing this question many people tend to reflect on their own experience and their own tolerance for risk. Maybe the real question is: “Can a public facility ever afford to view reserve funds as a luxury?”

CASE IN POINT:
When The Lagoon Salesman Says
No Sludge Accumulation, Should You Believe Them

A few years ago, a small community in New England with a lagoon wastewater treatment system was faced with an unexpected and very costly maintenance problem. Sludge had accumulated in the lagoon over its 20 year life to a point where it was affecting the performance of the treatment and the facility began exceeding its NPDES permit limits. Sludge was occupying about 20% of the volume in the lagoon. This volume was not being used for treatment and consequently the treatment efficiency went down. When the plant was designed in the early 1970s, the lagoon salesman conveyed the wisdom of the day, which was that sludge should not be a problem, at least not for a very long time. With this information, no sludge handling facilities were constructed, which was prudent, but also no funds were set aside for the inevitable sludge disposal needs. After all, sludge disposal wasn’t going to be needed for a very long time.

As NPDES permit violations began accumulating, the state and EPA became involved. Upon investigations by the agencies, not only was there considerable sludge accumulation, the aeration system was also inadequate. The EPA and state worked with the community to address the problems, but once permit violations occur the agencies are bound by regulations to address them within a specific amount of time. Consequently, the community was issued an administrative order to remove the sludge and to improve the aeration system according to a schedule. The schedule was set by the agencies according to guidelines. This community was fiscally unprepared to deal with the sludge issue and had been neglecting its aeration system for some time. By waiting until violations occurred, the community put themselves at a disadvantage. In order to meet the schedule the community had to borrow funds. A better route for this community would have been preventative maintenance; either through more periodic care of the aeration system or planning for the eventual upgrade of the aeration system and removal of the sludge.

Could Your Reserve Fund Handle A Major Equipment Replacement?

If your answer is no, you are not alone. An EPA study shows that 37% of wastewater treatment systems are not collecting sufficient funds from user service charges to cover operating costs. You may want to consider taking some steps now to develop a healthy, reliable cash reserve fund as part of your operation and maintenance budget. Here are some guidelines to get you started:

1. First, understand the difference between operating cash reserve and capital reserves. You need both and you need to keep them separate. Operating cash reserves are set-up to handle the day to day exigencies of your facilities cash flow. The capital reserve, on the other hand, requires a somewhat longer-term view of budgeting and is part of a well thought out, multi year capital improvement plan, and should be based on a careful assessment of the vulnerability of major system components. Developing a healthy capital reserve will help minimize the risk of incurring debt obligations when a major breakdown occurs. These two types of cash reserves should be identified as separate line items in your annual O&M budget.

2. So what is a healthy level of reserve funds? Here are a couple of rules of thumb:
   The operating cash reserve should be at least one eighth of the total annual O&M budget. Typically, there is a forty-five day lag between payables and receivables. Forty-five days is one eighth of a year.
   The capital cash reserve should be at least equal to the replacement cost for the most expensive system component that is susceptible to failure in the forseeable future.

3. A cash reserve account could be set up as a simple savings account, as an escrow account, or as a trust fund.

4. Once you have set goals for each reserve fund, you need to plan carefully to build up toward savings goals, and then stay committed to our plans. In some cases, a board resolution may help underscore the commitment to developing reserve funds.

These are some of the basics of municipal financial planning. Staff at your state agency are available to help you work out the details. The lesson bears repeating. Maintaining healthy reserve funds in your budget is by no means a luxury. If the community with the sludge and aeration problems had a healthy capital reserve fund they would have saved money because it is always cheaper to save money than to borrow. Whether the budget is for wastewater treatment, water supply, road maintenance, etc., it should include healthy reserve funds. Rather than being viewed as a luxury, reserve funds should be considered an unavoidable recurring cost, just like any other cost incurred in the business of water supply or wastewater treatment.

Fall Meeting — Continued from page 1

At 1:30pm the NHWPCA Business Meeting will include an enlivening presentation by Chip Chesley, Director of Public Works for Merrimack, and John Scott, of Rist-Frost, on the award winning Compost Operation.

Anheuser-Busch has agreed to host a special tour of their nearby facility for NHWPCA members and guests at 3:00pm, for those who are interested. Visit this excellent facility operated by one of America's leading recyclers of brown glass! See the indoor garage where the beautiful Clydesdales are parked when they're not working.

If you haven't already registered, 'Time's a wastin'.
NHPCA Scholarship Winners

Kristia Parks Essay

Over the past few years I have been greatly concerned about the depletion of our natural resources, primarily those of our oceans, rivers, and streams. For this reason, I have chosen to major in Marine Biology with a minor in Environmental Sciences. This will give me the opportunity to pursue a career in a variety of environmentally related fields.

One of the areas that will be open to me is research as it pertains to fisheries. Pollution of this resource is of general concern. By learning about the water environment and the animals that live there, I hope to be able to help control the annihilation of this important natural resource.

Another career that I could investigate is research biology. I would especially like to be involved in ocean exploration. One special area of this field that I would like to look at is marine ecosystems. Ecosystems are important in maintaining ocean life. Without some types of plants and animals, others die out too. I want to find out how the ecosystems work and what keeps them going.

One more field that I might attempt is water quality control. I could learn how to purify water and make it safe to drink. This is a chief concern of many people today. They want their water to be clean and disease free. I feel that this is an important job in our society.

Finally, I would like to discuss the forestry field. It has to do not only with water sources but to do with wildlife. I am interested in preserving and conserving wildlife resources as well as water ones. If I become a forester or a ranger I could integrate what I learn about water life into my job. Knowing about water and animal conservation, I could really help out the environment.

I truly want to become involved in a career that I can help make a difference in the world around me. The type of career that I choose will be one that I can help give something back to the earth. It needs to be preserved and only the people who live here can help to do this. Education is where it all begins. With my education, I will be able to meet my career goals and help to make this a better world.

Jessica Hebert Essay

As a senior in high school, I have many goals and dreams regarding what my future will hold. Many of the dreams will change as I get older, as will the goals I have for the future. One dream which has stayed in my mind for some time is my dream of a future career that will allow me to do something that I will enjoy.

Beginning at a young age, I have been involved with nature and the environment around me. I have grown with a deep respect for the earth. This ideal is something I attribute very strongly to my dream of my future career.

Since the beginning of high school, I have wanted to be an environmental scientist. At that time I was not aware of the many topics that I was covering in my statement. As I continue through school, this idea has become more and more real to me, although it has changed somewhat from its original form.

Scholarship Winners — Continued on adjacent page

Septage and Biosolids — Continued from page 1

This facility went on line on November 21, 1995. The Henniker wastewater staff now has the ability to receive septage under controlled conditions and feed septage to the process so that the high effluent quality can be maintained.

Lakeside Rotamat — Part of the Henniker WWTF Upgrade

BIOSOLIDS HANDLING AND DISPOSAL

For almost twenty years Henniker disposed of their sludge by burying it in the town landfill. The closing of the landfill in January 1995 made it necessary for the town to decide which of the many disposal options it would utilize. For many years Ultimate Sludge Disposal has been on the minds of the staff of the Henniker Wastewater Facility. Every available option was thoroughly considered, and in the end, composting was the preferred choice. Since Henniker does not produce enough sludge to compost on its own it was decided to haul their sludge to a regional composting facility seventy miles from Henniker.

For a little over a year the town transported the material with their own dump truck, this proved to be not only costly (labor, fuel, maintenance & repairs, etc.) but, also hindered the belt press operation due to the fact that the press could not be run while the truck was in transit.

It was at that point that Henniker decided to pay someone to haul their sludge and utilize a 20–30 yard rolloff to keep transportation cost down. Because of the footprint of the facility, it was necessary to add on a shed style addition of the belt press building to house the rolloff container. At the same time a new 22 foot screw/mixing conveyor and a lime feed/dust collector unit was purchased.

The press can now be run on a daily basis if needed and the rolloff container is shipped once per month, odors are contained with the addition of lime.

The sludge handling upgrade was put into operation in June of this year and has performed well to date.

Portions of this article were excerpted from a paper presented at the NEWEA annual conference Boston, Massachusetts on January 30, 1996.

Titled: "Improving Septage on a Limited Budget" by Edward L. Rushbrook, Jr., P.E. Dufresne Henry Inc. and Kenneth lever-que, Wastewater Superintendent Henniker, New Hampshire.

Thanks Ed!
State of New Hampshire
Septage and Sludge Management Rules
ENV-Ws 800
by Jim Herrick, NHDES

Prior to 1993, sludge and septage were regulated by the Department of Environmental Services (DES). At that time the Water Division issued letters of approval for land application sites and provided oversite. In 1993, the U.S. Environmental Protection Agency (EPA) adopted Part 503 technical standards for wastewater biosolids. As a result of these regulations, DES decided to focus its efforts on education and technical assistance, rather than duplicating EPA's efforts in permitting and compliance.

For the next two years several issues concerning sludge and septage were encountered. These issues centered around 4 major concerns: odor, lack of notification, quality of the sludge and septage, and lack of State oversight and monitoring. To address these issues DES adopted emergency rules on November 22, 1995. Since these rules would expire in 120 days, DES initiated a formal rulemaking process and organized an advisory committee of more than 30 members to review these rules and submit comments to the DES. The culmination of this effort resulted in rules that became effective on March 19, 1996.

The Septage and Sludge

Management rules supplement EPA's 503 regulations and established a permitting system for any person who manages septage or industrial sludge. In an effort to address the public's concerns several changes were made to the department's regulations. Specifically, to address odors:

- No stockpiling of unstabilized sludge is allowed at land application sites;
- Stockpiling of sludge is limited to six months;
- All stockpiles must be covered, if remaining longer than one week;
- Setbacks distances were increased from residences and roads;
- Sludge/Septage vehicles must be covered during transport;
- Sludge must be incorporated within 24 hours of spreading unless used for topdressing; and
- An odor control plan must be in place with detailed procedures as to how to handle odor complaints.

Lack of notification was addressed by requiring managers of sludge and septage activities to notify DES, abutters to the application site, and town officials 30 days in advance of land application activities. In addition public informational meetings or public hearing are also required.

To address concerns of the quality of the sludge and septage, the rules require certification of all sludges prior to land application. The certification process involves conducting a priority pollutant scan and testing for ten metals and nutrients. Oversight and monitoring concerns were addressed by requiring activities to determine metals concentrations and soil characteristics, such as pH, texture, and organic content on a yearly basis. The applicant must also submit an operating plan detailing how the site will be managed as well as agronomic rate calculations for land application sites.

Where to obtain more information

The Septage and Sludge Management Rules, Env-Ws 800, and corresponding application(s) may be obtained by calling DES's public information permitting office at (603) 271-2975 or Mike Rainey or Jim Herrick at (603) 271-2457. Please address written correspondence to the following address:

Water Division
Surface Water Quality Bureau
64 North Main Street, 3rd Floor
Concord, New Hampshire 03301
Attention: Sludge and Septage Section

Scholarship Winners — Continued from previous page

I still want to be involved with the environment but with more of a business aspect involved.

Now, my goals for the future fall in the area of education and preparatory work for my career. I plan to go to college and receive a major in both environmental studies and also in the area of business, more specifically accounting/finance. I am anticipating that these studies will lead me in the right direction to pursue my goals.

Following my formal education, I hope to find and maintain a job as an environmental accountant or a business advisor in an environmental firm. Also, I would like to be able to own and operate my own environmental firm. In this business, I hope to someday work with specific areas that are in ecological trouble. The business would be similar to an environmental reconstruction agency. The primary concern for my business would be to go to places that are suffering damage due to pollution, erosion, or disturbances in the balance of the atmosphere and through a series of studies, be able to correct the problem and bring prosperity and life back to that land.

Throughout the course of my life my interests in the environment has continued to grow and develop. I have educated myself both inside and outside of the classroom and the more I have learned, the more interested I become. Working to improve the conditions of the earth is an area in which I see myself, and one in which I will strive to achieve.
** COURSE ENROLLMENT FORM **

<table>
<thead>
<tr>
<th>Date</th>
<th>Course Description</th>
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<tr>
<td>SEP 18</td>
<td>Fire Extinguisher Safety Training</td>
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<td>SEP 25</td>
<td>Public Relations: How to Communicate Successfully...</td>
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<td>SEP 26</td>
<td>NEIETC - Pathogens Exposure Control Register directly with NEIETC by Sep. 13 on enclosed NEIETC registration form.</td>
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<td>OCT 1</td>
<td>Advanced Lab QA / QC - at Seabrook, NH (Limit 15)</td>
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<td>OCT 2</td>
<td>Soil Treatment Systems (Limit 30)</td>
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<td>OCT 9</td>
<td>Basic Collection Systems Surveying (Limit 20)</td>
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<td>OCT 16</td>
<td>YSI Dissolved Oxygen Msmt. Workshop</td>
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<td>OCT 23</td>
<td>Collaborative Problem Solving and Decision Making</td>
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<td>OCT 30</td>
<td>Advanced Lab QA / QC - at Berlin, NH (Limit 20)</td>
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<td>OCT 29 - NOV 1</td>
<td>NEIETC: Basic Wastewater Treatment Technology (Limit 20)</td>
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<td>NOV 6</td>
<td>Certification Exam Review - All Grades</td>
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<td>NOV 13</td>
<td>Upgrading, Operating and Troubleshooting</td>
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<td>NOV 20</td>
<td>Basic Activated Sludge (Limit 20)</td>
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<td>DEC 4</td>
<td>Applied Wastewater Math Review</td>
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<tr>
<td>DEC 11</td>
<td>** CERTIFICATION EXAMS - ALL GRADES ** Contact the NH DES Wastewater Operations Section at 603-271-2586 for an application.</td>
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NOTE: See course description sheet for cost of each class. No cash accepted!

Make checks payable to: TREASURER - STATE OF NEW HAMPSHIRE

Send enrollment form w/payment to: State of New Hampshire DES, Water Division
ATTN: Wastewater Operations Section
PO Box 95, Concord, NH 03302-0095

Facility Name: __________________________ Facility Supt. __________________________
Facility Phone #: ________________________ Date: __________________________
Facility FAX #: __________________________ Type of Payment: __________________________
NEW ENGLAND WATER ENVIRONMENT ASSOCIATION

Alfred E. Pelquin & Operator of the Year Awards

These awards are given annually to a person involved in the operations of wastewater treatment facilities from each of the six New England states. The awards are presented at each State Operator's Association annual meeting by an officer of the New England Water Environment Association. At NEWEA's annual meeting, the names of the recipients of the awards are announced during the award presentation program. The selection committee for each state shall be comprised as follows:

Chairman - NEWEA Director from the state
Co-chairman - Representative from the state operator's association
Co-chairman - Representative from NEWEA's Plant Operator's Committee

The Chairman of each state selection committee shall be responsible for submitting a written report to the NEWEA Special Awards Committee indicating who the nominees are and the reasons why that person was selected.

NOMINATION CRITERIA

Alfred E. Pelquin Award:

The purpose of this award is to recognize an individual whose personal service has contributed to excellence in plant operations either directly at a treatment plant or indirectly through assistance to plant operations personnel. The following guidelines will be used in the selection of recipients:

1. Can be an operator, maintenance technician, laboratory person, plant manager, state regulatory person, equipment supplier, industrial person, teacher, consulting engineer or public relations person.

2. The person selected must be associated with plant operations in the state in which they are being presented.

3. The recipient does not have to be a member of NEWEA or the state operator's association.

Operator of the Year Award:

1. The nominee will be directly assigned to and routinely involved in the day to day operations, maintenance, laboratory and/or related functions of a wastewater collection, pretreatment or treatment facility.

2. Nominee must be a member of the local state association.

3. The nomination should be current but may be made for work performed within the past three (3) years.

4. One or more of the following areas should be discussed in the nomination form to serve as a basis for selection of the award recipient:

   a. Improvement to the environment  b. Cost effective operations
   c. Public relations  d. Cost effective maintenance procedures
   e. Safety  f. Innovative process controls
   g. Solids handling and disposal  h. Industrial pretreatment
   i. Collection systems/pumping stations  j. Training
   k. Odor control  l. Association contributions

Read over the criteria and please contact:

George Laney
Newmarket WWTF
186 Main St. • Newmarket, NH 03857
(603) 659-8810

if you know a deserving candidate.
Once Again
Good Luck Synergetics in Dallas 1996

NEW HAMPSHIRE SYNERGETICS
(Left - Right) Coach - Victoria Abbey, Mark Bernier, Captain - Ken Lowe, Ken Kessler (w/daughter) and Sharon Ostrander