Presidents Address

To the members of the NHWPCA:

As the new President of the NHWPCA, I would like to share some thoughts our Association should consider in the upcoming year. Our Association's membership continues to be lower than years ago, and I have asked myself why this is occurring. We have Committees in our Association which are no longer active. We did not have an Operations Challenge team compete last year. We as an Association are facing extremely important issues which will affect our profession in years to come, such as Biosolids. You the membership need to voice your thoughts and opinions on where you want your Association to go. Do we need new and different committees? Do we need to have different types of meetings? Do we need to sponsor more training? Do we want to become involved in political issues which affect our industry? You, the membership need to assist your Board of Directors in making our Association what you want it to be. All of the Directors are a phone call away to listen to any comments or thoughts you would like to contribute. Our Association will only be as good as the members are willing to make it. I know this membership has the ability to make this an even better Association. I'm looking forward to a year of reestablishing some of the committees and groups which have become inactive, a year of reorganization, and a year of having a good time. I can not urge you enough to become involved, and to share your thoughts and input with your Directors.

Thank you,
Douglas W. Steele, II
President

Ammonia Chomper
Scientific Name: Nitrosomonas europaea

Nitrosomonas europaea is an “ammonia-powered” microbe that uses ammonia as a fuel to live and grow. Power generating membranes (long, thin tubes inside the cell) use electrons from ammonia’s nitrogen atom to produce energy. The dark lines circling much of the interior of the cell are the power generating membranes that process the ammonia.

Nitrosomonas europaea can obtain the carbon that it needs to grow by getting it from the atmosphere in a process known as “carbon fixation”. Carbon fixation is the process of converting carbon in a gaseous form into carbon bound up in organic molecules. This bacterium contains “carboxysomes” (dark spots which can be seen scattered throughout the cell), which store the enzymes used to fix carbon dioxide for cell carbon. You may recall that plants can fix carbon, that is, they can convert carbon dioxide into sugar, using the energy from photosynthesis. This strange bacterium can also fix carbon, but instead of photosynthesis for its energy it uses the energy produced by “burning” ammonia with oxygen. N. europaea must consume large amounts of ammonia before it will divide, and cell division may take up to several days. This microbe, which does not like being exposed to light, will cover itself in slime and form clumps with other microbes to avoid it.

Some ammonia-chomping microbes can live in the walls of buildings and on the surfaces of monuments, especially in polluted areas where air contains high levels of nitrogen compounds. When these microbes use ammonia for the air, they produce nitric acid. The acid can dissolve some stone and other construction materials found on statues and in buildings.
NHPCA OFFICERS

President Doug Steele  
Vice President Mary Dowse  
Secretary George Neill  
Treasurer Mike Hanscom  
State Director Victoria Abbey  
Past President Moe Gauthier

Newsletter Committee: Dana Clement, Beverly Drouin, Steve Hodge, Harvey King, Charlie Richard, Dave Sircle, Editor – Tom White

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

NHPCA Directors’ Meeting  
April 3, 1998

Attendees: Mike Hanscom, Mary Dowse, Bill Hall, Mike Sullivan, Steve Hodge, Doug Steele, George Neill, Dave Brennan, Alwynne Helfach and Shelagh Connelly of the Biosolids Committee; and Moe Gauthier presiding.

1. Minutes from the last meeting were read and accepted.

2. Biosolids Committee: The Biosolids Committee Chair, Shelagh Connelly, asked the Board for an opportunity to address the directors regarding pertinent, current issues. Director Doug Steele, who sits on this Committee, initiated discussion. The Biosolids Committee (B.C.) wishes to have formal meetings with the following groups:
   (1) DES, including the Commissioner, Assistant Commissioner, and the Water Division Director;
   (2) the Environment & Agriculture Committee of the Legislature;
   (3) the Environmental Committee of the Senate; and
   (4) the Joint Legislative Committee of Administrative Rulemaking.

The B.C. would like the opportunity to establish a dialogue regarding proposed rules, legislation and policy at the State government level. The B.C. also wants to draft public education brochures to be included in communities billing notices that would discuss beneficial reuse and biosolids management.

Doug asked that consideration be given to allow two individuals to briefly discuss current biosolids issues during the business meeting at the Trade Fair. Specifically, Ned Beecher will discuss the newly established organization NEBRA and Bruce Kudric will present pertinent issues. The Board agreed to this.

Shelagh presented a draft letter that discussed a suggested policy that would bring some pressure to bear on communities that ban land spreading by shutting that community off from septage disposal at a WWTF and/or charging an extra fee to A discussion ensued regarding the four proposed meetings, as discussed above. Three Board members and four additional Association members, including B.C. members, will participate in these meetings. It was voted by the Board to get this endeavor rolling. Moe will draft an agenda for review by the B.C. and the Board prior to finalization. Moe will then set up the first meeting.

The Directors discussed the idea of a public education pamphlet and agreed to ask the B.C. to direct such a publication and to get the Board a cost estimate to print and distribute these.

The Board discussed passing out a questionnaire at the upcoming Trade Fair that would deal with the Biosolids Committee and their role with the association. It will ask for input regarding how the B.C. can better help Association members. Additionally, the Board will ask that they draft a fact sheet to hand out that will discuss how best to locally deal with biosolids issues.

3. Trade Fair: Doug Steele reported that 55 tables have been reserved to date and that some non-profit groups will be given tables. He asked that the Board call around to drum up additional support within the next two weeks. Doug and George will sit down in two weeks and plan the booth layout which must be forwarded to the Center of New Hampshire in Manchester, NH.

4. Other Business: George Neill handed out the most recent listing of the status of pertinent legislation. Discussion ensued over how much effort the Association should put into lobbying at the legislative level. More discussion will ensue at a later date.

George also mentioned that the Groundwater Protection Bureau of NHDES has established a Source Water Assessment Program Advisory Committee and would like a representative of our Association to participate on that group. They will establish a policy concerning water supply protection and public education. Dave Brennan and Bill Hall are both considering volunteering to serve on this committee.

Next Meeting: The next Directors' Meeting is scheduled to be held at the Franklin Training Center on May 14, 1998 at 9:00 a.m.

Henniker, NH Looking for  
Operator for WWTF

Full Time, applicant must be 18 years or older, valid NH drivers license, ability to obtain Gr. 1 NH Operator License within 1 year of hire. Pick up application at Henniker Selectmen's Office, 2 Depot Hill Rd., Henniker, NH 03242. Deadline for application: Friday, June 19th.

Public Relations Committee

The NHPCA Public Relations Committee is looking for people willing to assist in the tasks this committee is involved with. The chairman of the Public Relations Committee is Ed Rushbrook and he can be reached at 669-8672 for details. Please give him a call.
PLANT PROFILE

Superintendent – Lou Gregory  Operator – Ray Cormier
These two operators have considerable years of experience between them and produce a quality plant effluent.

Jaffrey WWTF
Jaffrey, NH

Aerated Faculative Lagoons

3 Cells, 30 day D.T. at Design Q  
Tubing — fine bubble aeration system
Design Q – 1.2 MGD, able to store 12 days flow during low Contoocook River flow conditions
Avg. Daily Q = .6 MGD  
UV disinfection

The staff, Lou and Ray, at the Jaffrey WWTF have produced a quality effluent for years. The effluent T.S.S. and B.O.D.'s are generally less than 12 mg/l year round and often in the single numbers. The facility still has the original aeration tubing system with gas cleaning capabilities.

It would seem that all is well, but not so. A Contoocook River Waste Load Allocation Study several years ago determined that this W.W.T.F. must remove Ammonia. Over the past several years considerable effort, money and time have been spent on experiments to attempt to achieve Ammonia removal after the lagoon treatment. Rapid Sand Filtration and Solar Aquatics are two technologies studied at this facility with small scale plants being constructed. The jury is still out on an affordable method of removing Ammonia in Aerated Lagoons facilities.

Lou and Ray are very interested in investigating what's out there that might work.

Oh, by the way, these guys are also responsible for 6 pump stations, the routine lab work, QA/QC programs, emergency response programs for the pump stations, etc, etc, etc.

It appears to be a calm out of the way aerated lagoon facility but in actuality can be very challenging to operate to meet the new requirements. Good luck to Lou and Ray.

Getting to Know Your Bugs:  
The Microlife Explained

Did you know that filamentous bacteria may be seeding your biological treatment system through sources such as I/I, biofilm growth in sewers, or pretreatment systems, or that amoebas have the unique ability to stick to the sides of the sample container, possibly resulting in an underestimate of their quantities when viewing your mixed liquor sample under the microscope.

These are only a few of the many interesting facts which were presented at the recently held Penn State training seminar entitled The Microlife. Michael H. Gerardi, nationally recognized author and instructor, provided approximately 100 operators from throughout New England with seven fact filled hours of microbiological know-how. For example, when doing a protozoan count for a large colony of stalked ciliates, count only the number of heads on the outside of the colony, and then multiply by 1.5. The resulting number should give you a good approximation of the total number of ciliates in that particular colony. Filamentous bacteria and control methods were also discussed at length, including concepts of the latest European philosophies.

This program was made possible entirely through the support of our Association and the Department of Environmental Services. Working together to train operators and solve problems.

Incidentally, you must gently bubble air along the sides of your sample container in order to dislodge those pesky amoebas.

1998 Deadline for Underground Storage Tanks

EPA WILL NOT EXTEND THE DECEMBER 1998 DEADLINE FOR UPGRADEING, REPLACING, OR CLOSING UNDERGROUND STORAGE TANKS. UNDER REGULATIONS THAT EPA ISSUED IN 1988, OWNERS AND OPERATORS OF UNDERGROUND STORAGE TANKS (USTs) STORING PETROLEUM AND HAZARDOUS SUBSTANCES HAVE UNTIL DECEMBER 22, 1998 TO CHANGE USTs THAT DO NOT MEET FEDERAL REQUIREMENTS FOR PROTECTION AGAINST SPILLS, OVERFILLS, AND CORROSION. THESE REQUIREMENTS ARE A KEY ELEMENT IN STATE AND EPA EFFORTS TO PREVENT GROUNDWATER CONTAMINATION. EPA AND STATES WILL CONTINUE TO WORK WITH UST OWNERS AND OPERATORS TO ENCOURAGE COMPLIANCE IN ADVANCE OF THE 1998 DEADLINE. FOR MORE INFORMATION CALL EPA'S UST HELPLINE AT 1-800-424-9346.
Confined Space Entry — Yuck!!!

by Harvey King — Woodward and Curran, Inc.

My feeling about Confined Space Entry (CSE) is primarily that it is a pain-in-the-neck! If I had witnessed a CSE fatality or injury, I’m sure that I’d feel differently.

The truth is, I myself have entered confined spaces without proper and sensible precautions. One big reason was because of fear of unspoken ridicule by others. Other reasons were often feeling pressed for time (who doesn’t), and a genuine desire to get things done.

Enough of the editorializing; how to deal with the reality of this pain-in-the-neck called CSE? One suggestion is to **Modify** (rhymes with **Identify** and **Codify**, also worthwhile).

**Modify**: change the physical layout of the equipment in your CS so that you do not have to enter; i.e. make Engineering changes — the method of choice since once done is long completed.

These changes don’t necessarily need to be expensive. Some examples are the following.

**KEEFE Site**

**Meter Pits:**

- 5 feed deep, one manhole opening. Need to read flow meters and totalizers on a weekly basis. Need to get water samples monthly. Need to adjust flow. Even with measurement using a multi-gas meter, two people, a retrieval system, and appropriate paper work had to be filled out.

**Solution:** a) Repipe sample ports (using HDPE tubing and ball valves) to be within reach of the manhole opening. b) Attach a small window wiper to the end of an 8’ rod to wipe condensation from the faces of the flow meters and allow them to be read from outside the pit. c) Install ball valves with an oversize hole drilled in the handle. With a rod bent at a 90-degree angle (an Allen wrench in our case) attached to the opposite end of the wiper pole, the valves can be adjusted from outside the manhole.

**Benefits:** No CSE necessary! Saves the need for a second person as lookout and communication with a third party as backup, saves the need for retrieval equipment, air monitoring equipment and CSE permit preparation.

**Wet Well Sump:**

- 10’ deep, one manhole opening. Had a valve for adjusting flow and a 1/4 Hp submersible pump for emptying the manhole. Also float switches for controlling the pump. Need to do monthly maintenance checks and occasionally replace the pump.

**Solution:** Install a pitless adapter (typically for artesian wells) on the discharge pipe and install a pipe brace so that the adapter was near the vertical plane of the manhole opening. Attach the second part of the pitless adapter — and the valve to control flow — to the vertical discharge pipe of the sump pump. It now takes one person to remove the pump instead of two and flow can be adjusted using the pole with a hook on one end. After initial setup there has been no further CSE!

**Backwash Sump:**

- with a 3’ x 3’ hatch for access. (8’ deep and no access ladder). The problem was that solids would end up collecting in the sump from each filter backwash and eventually effect level float operation, preventing pump shutoff at low level. Cleaning out sediment was a time consuming and dirty task and of course involved CSE!

**Solution:** Repipe backwash from filters to the sludge storage tank, (SST) and then by overflow to the backwash sump. Supernatant from the SST is normally decanted anyway after solids from other sources, chiefly the lamella thickener, settle out. Solids from the backwash (especially any filter media) also settle out in the large volume and reduced velocity of the SST. Results are significantly reduced solids in the backwash sump and significantly less CSE time, trouble, and risk.

**Underground Water Storage Tank:**

Problem: The foot valve inside this tank tended to get stuck open. This resulted in the plant water system losing its prime, cavitating, etc. It also meant that a CSE procedure was needed to repeatedly enter the tank and clean or replace the foot valve. Because the storage tank was underground, access to the foot valve was only possible from inside the tank.

**Solution:** The water tank entrance was sealed semi-permanently. Then an inverted trap was used to preferentially direct flow to the water tank keeping it full at all times. This resulted in the plant water system being in a flooded suction condition.

**Result:** No more priming problems, no more foot valve problems (the existing one was left in place) and, best of all, no more CSEs!

**Allenstown WWTP**

**Grit Room:**

Potentially toxic and/or flammable atmosphere along with the need for two staff (CSE) and 1 to 3 man-hours per week of labor to both run the grit removal system and get daily influent grab.

**Solution:** Set up a timer for running the grit removal system at 5 a.m. and 5 p.m. when little else was running in the plant. Used a window to view the status of the buckets without entering. Also moved the composite sampler outside the grit room and ran the sample tube through the wall to the influent channel. Daily grabs are now obtained by running the sampler in manual. Hands-on cleanup and inspection of the grit removal system is done once a week.

**Benefits:** Decreased CSE man-hours and exposure and decreased monthly electrical demand charge but continued maintenance and visual inspection.

**Chlorine Room, One Ton Cylinders:**

Obviously has a potential for highly toxic atmosphere. Daily entrance to read scales presented frequent exposure and CSE man-hour/paperwork demands.

**Solution:** Read the scales through the window room. Simple!

**Benefits:** Significant decrease in CSE related man-hours.
Oxidation Ditch Performance Evaluation

by Joe Ducharme

Of the 85 municipal wastewater facilities in New Hampshire, 21 facilities operate as extended aeration activated sludge with 11 of those configured as oxidation ditches. Over the past few years several of these oxidation ditch facilities have experienced recurring process upsets. Working with the plant operators, the NH DES Operations Section staff has been searching for common “threads” among this group of facilities. Among the problems observed are insufficient dissolved oxygen D.O. available, filamentous bacteria growth leading to sludge bulking, insufficient mixing in the ditch and inadequate sludge removal/disposal capabilities.

The design of extended aeration facilities typically has no flow equalization or primary clarification. Multiple aeration tanks or ditches are used along with secondary clarification. Sludge dewatering and disposal processes are generally much smaller than for conventional activated sludge. The theory being that extended aeration will achieve significant solids reduction using longer MCRT’s in aeration. Experience has shown that the solids reductions are far less than originally thought, creating a solids “backlog” at several of these facilities. Ultimately, these facilities are faced with costly upgrades to their solids handling process.

Field measurements of dissolved oxygen and flow velocity at six oxidation ditch facilities were initiated in March 1998 to assess aeration and mixing within the ditches. Three of the ditches had rectangular shapes with chamfered corners while the remaining three were proportionally distinct ovals. In general, the oval ditches exhibited better mixing with higher flow velocities (ranging from 1.0 to 1.5 feet per second). Two of the rectangular ditches had average velocities less than 0.5 feet per second which allowed solids settling throughout the ditch.

With many facilities operating their aeration equipment on timers, much of the settled mixed liquor is not adequately re-suspended and degraded. This cyclic aeration along with the constant influent and RAS loads leads to a dissolved oxygen deficit bordering on septicity. With the aeration equipment unable to provide adequate D.O., we have observed a proliferation of low D.O. filamentous growth. The end result is a subsequent loss of solids leading to permit violations of the effluent TSS limit.

Five of the six facilities have fixed “brush rotor” aerators, the sixth uses aspirating surface aerators. Typical design standards call for aeration motor horsepower in the range of 0.75 to 1.5 HP per 1000 ft.\(^3\) of tank volume. The three most problematic plants fall below the low end of this range. Subsequently, the current equipment is unable to provide the D.O. and mixing. These plants may need to add supplemental mixing and aeration, particularly as they approach 80% of design capacity.

Two other field studies are ongoing at the oxidation ditch facilities. One involves the use of a selector to control filamentous bulking, the other incorporates an anoxic zone while running two ditches in series.

Selectors are small, short hydraulic retention time tanks located immediately before the main aeration basin(s). Within a selector, environmental conditions favor growth of floc forming bacteria in the RAS to high concentrations of soluble BOD which is then absorbed by the floc formers at a rate faster than the filaments can absorb. Whichever gets to the food first will predominate. Filaments are also less competitive under anoxic or anaerobic conditions. An anoxic selector was installed at one oxidation ditch facility with minimal success. This pilot test was promising although complete, continuous mixing (which was not provided in the pilot test) appears to be the key to achieving predictable results.

The use of anoxic zones for nutrient reduction is widely applied at conventional activated sludge facilities. Recently, flow modifications were made at one oxidation ditch facility to allow series operation of the ditches. Raw influent and RAS are input to the first ditch which has a single aerator running on timed 30 minute off-on cycle. This, in effect, creates an extensive anoxic zone in the primary ditch. The short on-off cycle keeps enough oxygen in the ditch to prevent septicity. This process experiment is ongoing with the anticipated benefit being nutrient reductions, effluent pH control and reduction of filamentous growth.

In conclusion, each oxidation ditch plant exhibits distinct characteristics—meaning what works for one plant may not apply to another. Additional field measurements, pilot studies and data collection will be necessary to assist the operators in addressing the many challenges facing them. Many thanks to these operators who have been very receptive to our technical assistance efforts.

Confined Space – Continued from previous page

hazard, and paperwork. Entry into the chlorine room is now only required an average of 2 times per year for tank change out (the chlorinator is in a separate room). Visual inspection on a daily basis continues.

Pump Stations:

Previously used to inspect both the wet-well side and the dry side on a daily basis. Obviously required, to be safe and responsible, atmospheric testing, two operators plus telephone backup and CSE paperwork.

Solution: Inspect the dry side on a daily basis, get readings and check for normal operation but inspect the wet-well side only once a week. More frequent wet-well entry is carried out for problem stations and during seasonal trouble prone times.

Benefits: Overall man-hours are saved, exposure to potentially toxic, flammable, or oxygen deficient atmospheres is reduced, and pump station oversight is maintained.

A brief summary of ideas and gadgets that have been referred to above are as follows:

• Extensions on valve handles
• Pumps that disconnect and pull out without tools
• Use of pipeless adapters for piping connections (same as above)
• Binoculars
• Wiper, flashlight, and/or hook on pole to clean & read meter faces and manipulate valves
• Rewiring/repiping and moving existing readouts near the CS entrance
• Adding hoses/pipes with a valve on the end to allow remote sampling
• Use mirrors to make gauges/counters readable
The 9th Annual NHWPCA Golf Tournament will be held at the Bretwood Golf Club on August 21, 1998. This course (actually, there are two) features beautiful scenery as well as great layouts and they are also well maintained. I am sure you will not be disappointed! This year, as last, we will be having a shotgun start at 9:00 a.m. sharp. I would ask all of you to arrive at least one hour early so that we may get teams organized and hole assignments handed out. This year we will be having a chicken and steak BBQ. The cost of this years tournament is $55.00 per person (members and sponsors) and $65.00 for non-members. There will be a late fee of $10.00 for entry's received after August 7, 1998. The other big change this year is the format. We always have done the four man scramble, however, I have been getting more and more requests for people to play together and it is getting harder and harder to even out the teams. Hopefully, by using the Calloway scoring system we will be able to accommodate everyone who wants to play together. I must ask everyone who signs up to play to submit either a handicap or an average score. I am sure, as always, the prizes will be great, and we will all have a good time! I am also looking for a couple of new people to help out with the tournament. If you are interested give me a call at (603) 594-3365; ask for Leo. I look forward to seeing all of you on August 21, 1998. Thanks . . .
Bacteria grow in a wide variety of habitats and conditions. When most people think of bacteria, they think of disease-causing organisms. While pathogenic bacteria are notorious for such diseases as cholera, tuberculosis, and gonorrhea, such disease-causing species are a comparatively tiny fraction of the bacteria as a whole.

Bacteria are so widespread that it is possible only to make the most general statements about their life history and ecology. They may be found on the tops of mountains, the bottom of the deepest oceans, in the guts of animals, and even in the frozen rocks and ice of Antarctica. One feature that has enabled them to spread so far, and last so long is their ability to go dormant for an extended period.

Bacteria have a wide range of environmental and nutritive requirements.

Most bacteria may be placed into one of three groups based on their response to gaseous oxygen. Aerobic bacteria thrive in the presence of oxygen and require it for their continued growth and existence. Other bacteria are anaerobic, and cannot tolerate gaseous oxygen, such as those bacteria which live in deep underwater sediments, or those which cause bacterial food poisoning. The third group are the facultative anaerobes, which prefer growing in the presence of oxygen, but can continue to grow without it.

Bacteria may also be classified both by the mode by which they obtain their energy. Classified by the source of their energy, bacteria fall into two categories: heterotrophs and autotrophs. Heterotrophs derive energy from breaking down complex organic compounds that they must take in from the environment — this includes saprobic bacteria found in decaying material, as well as those that rely on fermentation or respiration.

The other group, the autotrophs, fix carbon dioxide to make their own food source; this may be fueled by light energy (photoautotrophic), or by oxidation of nitrogen, sulfur, or other elements (chemoautotrophic). While chemoautotrophs are uncommon, photoautotrophs are common and quite diverse. They include the cyanobacteria, green sulfur bacteria, purple sulfur bacteria, and purple nonsulfur bacteria. The sulfur bacteria are particularly interesting, since they use hydrogen sulfide as hydrogen donor, instead of water like most other photosynthetic organisms, including cyanobacteria.

The cycling of nitrogen in another important activity of bacteria. Plants rely on nitrogen from the soil for their health and growth, and cannot acquire it from the gaseous nitrogen in the atmosphere. The primary way in which nitrogen becomes available to them is through nitrogen fixation by bacteria such as Rhizobium, and by cyanobacteria such as Anabaena, Nostoc, and Spirulina, shown at right. These bacteria convert gaseous nitrogen into nitrates or nitrites as part of their metabolism, and the resulting products are released into the environment. Some plants, such as liverworts, cycads, and legumes have taken special advantage of this process by modifying their structure to house the bacteria in their own tissues. Other denitrifying bacteria metabolize in the reverse direction, turning nitrates into nitrogen gas or nitrous oxide. When colonies of these bacteria occur on croplands, they may deplete the soil nutrients, and make it difficult for crops to grow.
The NHWPCA 9th Annual Golf Tournament

At the Bretwood golf club Keene N.H
Friday, August 21, 1998 - Rain or Shine !!!

DONATION: $55.00 per/ person member and sponsor. $65.00 non member

To include the following: Cart and greens fees, prizes, and a chicken and steak BBQ.

This year will feature a shotgun start. Tee time is at 9:00 am sharp. Please plan on arriving
at least one half hour before the tee time so that we may get things organized.

PLEASE NOTE: THERE WILL BE A LATE FEE OF $10.00 FOR ENTRY'S RECEIVED
AFTER AUG. 7, 1998

FORMAT: Calloway scoring system. You must include a handicap or average score. You may
make up your own teams.

NOTE: Sponsors are needed for prizes, both new and old - as always! Any
help your company could provide us is greatly appreciated!!

I am looking for people to assist me with the tournament. If you are
interested please contact me at the number below.

Please mail form below to: Leo Gaudette, c/o Nashua WTF, Sawmill Road, Nashua, NH
03060. Should you have any questions, please call me at 603-594-3365. FAX 603-594-
3474

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Name: ______________________________ Address: ______________________________

Phone: __________________________ Handicap or Avg Score: __________

Please make checks payable to: NHWPCA - THANK YOU!!

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