MARCH 28, 1985
TRADEFAIR

SIXTH ANNUAL WASTEWATER TREATMENT PRODUCTS AND SERVICES TRADEFAIR

Thursday, March 28, 1985
New Hampshire Highway Hotel
Concord, New Hampshire
(at Exit #14 on Route 93)
State and Pierce Convention Rooms

AGENDA

9:00 am - Exhibits of the latest equipment and professional services in the wastewater treatment field will be open for viewing in the State Convention Room. Over 65 exhibitors will be displaying. Everyone welcome - no charge!

11:00 am - Attitude Adjustment Period (cash bar).

12:30 pm - Buffet Luncheon in Pierce Room.

Menu: Steamship round roast beef, salad bar, ham steak, chicken nuggets, baked macaroni and cheese, cold meat platters, veggies, and assorted desserts.

1:30 pm - Association Business Meeting
- Election of incoming officers
- Presentation of awards

1:45 pm - "The Merrimack" - The Merrimack River Watershed Council's excellent slide presentation of the history, water quality improvements and the future of this vital river. President Nate Tufts and New Hampshire Coordinator Greg Smith will introduce the show and be available to answer questions on the efforts of the Council.

PRICE FOR THE BUFFET IS $12.00 PREPAID. PLEASE CONTACT BOB LIVINGSTON (271-3448) IF YOU WANT LUNCHEON RESERVATIONS.

NHWPCA ANNUAL TRADEFAIR

MERRIMACK MEETING

Composting at the Merrimack Wastewater Treatment Facility was the theme of our last Association meeting on December 20. Superintendent Larry Spencer and his operations staff conducted tours of their plant's solids handling equipment and composting facilities, throughout the morning, to a large turnout of over 110 Association members.

At noon, the meeting reconvened at the nearby Merrimack Hilton for Christmas eggnog, a lunch, buffet and a round of liquid refreshments donated by Anderson-Nichols. After lunch, George Carlson and Steve Gilman of A-N, the town's consultant engineer, spoke on the design features and construction details of the recently added composting facility.

Merrimack's Chief Operator, Jim Taylor, gave an informative talk on his composting operation and how it has worked so far (see Dec. issue's feature article). From the many audience questions following the two presentations, sludge handling and composting are popular subjects in New Hampshire. Again, thanks to the operators at Merrimack and Anderson-Nichols for their assistance in making this meeting a success.

Contest ★ ★ ★ Contest

On June 5, 1985, the NHWPCA will start an annual "trivia-type" contest as part of our training effort. All questions are based on treatment plant O & M. The winning plant will receive $50.00 and a plaque.
IMPROVEMENTS TO SOLIDS DEWATERING at the
SOMERSWORTH, N.H. WASTEWATER TREATMENT FACILITY
BY GREG MACK — SUPERINTENDENT

INTRODUCTION
Somersworth is an extended aeration treatment facility with a design capacity of 2.4 MGD. Since there is no primary sludge, sludge dewatering is for waste-activated sludge only. Originally the dewatering equipment consisted of two dissolved air flotation thickeners and two vacuum filters with stainless steel coils using ferric chloride and lime for conditioning.

SLUDGE DEWATERING
A few years ago a concerted effort was undertaken at this facility to reduce total energy costs. It was apparent that sludge dewatering was one of the largest controllable expenses. Over the past six years the staff has tried many different methods of process control to reduce both the volume of waste-activated sludge and the expense of sludge dewatering. Most of these endeavors met with varying degrees of success; however, each carried side effects or undesirable conditions.

Four years ago it was decided to experiment using the secondary clarifiers as gravity sludge thickeners. By programming the return sludge pumps to run only 10 minutes out of each hour, the sludge concentrated by gravity to 3-4% solids. Further efficiency was achieved by plugging a polymer line to the conditioning tank on the coil filters. By bypassing the energy intensive flotation thickeners, the plant saved $2,600 per month in chemicals, electricity and manpower which it took to operate these thickeners. This mode of operation was used successfully from October 1979 to April 1980 during the colder months.

The following year, we converted our process to an extended aeration mode by using both of the aeration basins to handle a flow of 1.5 MGD. Under extended aeration, the plant effluent quality was excellent and sludge production decreased by 1,000 - 1,200 lbs/day. However, use of the clarifiers as thickeners could not be continued because the resulting floc would not concentrate as it did the previous year. In spite of the increased power usage with all six aeration on line, the chemical and energy savings from decreased sludge dewatering resulted in a net savings.

In 1983 it was decided that we were looking at the wrong end of the process. so we started doing cost analysis on our 12 year old dewatering equipment which consisted of 2 - 200 sq. ft. Komline-Sanderson flotation thickeners and 2 - 150 sq. ft. Komline-Sanderson Coilters. After compiling all the information on these units including electrical costs, chemical usage, manpower requirements and sludge output per hour, we looked at alternatives.

From the beginning we were impressed by the belt filter press concept. We contacted several belt filter press manufacturer's representatives who took samples of the sludge we wanted to waste on a belt filter press and told us what they thought their machines could do. As with so many things we have run into in the past, we wanted to see it in action here at our plant since equipment doesn't always perform the way the textbook says it should.

Mark Gauthier, the previous Superintendent, made several trips to see different belt filter presses in operation at other plants and fortunately most manufacturers of these presses have portable machines that can be brought to your site and run under actual plant conditions. Another former Superintendent, Nathan Cooper, now with Metcalf & Eddy, suggested we contact Envirotrode Systems of Camp Hill, Pennsylvania as he had recently seen a demonstration and was impressed with their machine. We were having trouble lining up a demonstration or pilot study with the companies we were dealing with because of their prior commitments, but Envirotrode agreed to come right up. Before we knew it, their trailer-mounted one meter belt press was parked in our backyard. On Monday morning, within three hours, their portable press was hooked to the bottom of our clarifier and began dewatering our sludge to the amazement and delight of all. We ran it all that week under varying conditions and with many different polymer arrangements. Our polymer representative, Chip Lord, from Tannin Corp., guided us through the intricate business of matching polymer rates and dilutions to this new machine. To say we were impressed by the pilot study would be an understatement. Spurred on by the possibilities this machine could make available to us, Mark took on the arduous task of preparing his sales pitch to the City Council. This would be the largest single purchase we had ever made and the first actual modernization of the plant since it was built.

Two options were addressed relative to the belt filter press; outright purchase or leasing. As shown on Option 1, the total capital cost for purchasing was $87,139 and the total yearly savings for manpower, chemicals, and energy was $55,532 which resulted in a payback period of 1.57 years. However, the Somersworth City Council was not interested in this at that time because City expenses and taxes were at a peak.

Option 2 actually consisted of a five year lease from the manufacturer, at which time the City would own the equipment. Spreading the capital purchase over five years with a monthly payment of $1,952 including interest resulted in a monthly operational savings of $4,662. When the City Coun-
cist saw this option was actually a net savings of $2,670 monthly, they gave overwhelming approval to this alternative.

Bids were prepared and sent out, and lo and behold who should be the low bidder but Environ-
dyne Systems, whose machine had impressed us in the pilot study. Arrangemonto were made to
lease a 1.5 meter press. The press was to be
delivered in 3 months time. In the meantime we had
to remove one of the existing colilters, build a
foundation for the new press, and do some plumbing
and electrical work in preparation for the
press's arrival. Some work was contracted out,
most we did ourselves.

**OPTION 1**

**Beltpress Savings By Outright Purchase**

- Yearly Savings in Chemicals and Energy $27,106.00
- Yearly Savings in Manpower & Benefits $24,336.00
- Yearly Savings in City Water for Process $4,000.00

**SAVINGS PER YEAR $55,532.00**

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<th>Cost</th>
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<td>Capital Cost</td>
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<td>Miscellaneous Installation Estimate</td>
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<td>Credit for Pilot Study</td>
<td>$88,900.00</td>
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<td>Payback</td>
<td>$87,139.60</td>
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<tr>
<td></td>
<td>$55,532.00</td>
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</table>

**OPTION 2**

**Beltpress Savings By Leasing**

- Savings per Month $4,822.00
- 60 Month Lease @ $1,952.00
- Monthly Savings $2,670.00
- *Savings After 60 Month Lease $160,200.00

| To Order, 1st and last Payment Required | $3,860.00 |
| Credit for Pilot Study                 | $1,760.40 |
|                                       | $2,099.60 |

**Capital Payoff After Every Year**

<table>
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<th>Years</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>60 Months @ $1,952.00</th>
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<tr>
<td>Percent of Purchase</td>
<td>85%</td>
<td>62%</td>
<td>48%</td>
<td>26%</td>
<td>10%</td>
<td>Capital = $88,900</td>
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<tr>
<td>Amount</td>
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<td>$57,052.00</td>
<td>$40,272.00</td>
<td>$21,814.00</td>
<td>$1,000</td>
<td>Interest = $33,220</td>
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</table>

*Savings all based on 1983 cost figures. Actual savings will increase with inflation.

**TABLE 1**

**SUMMARY & CONCLUSION**

Now with the press fully installed, de-bugged and operational, it’s time to assess the situation and see if our predictions will come true. I will make the following observations about our belt press experience.

1. First, Environdyne was excellent to deal with, very supportive of our project and very responsive to our problems.

2. We are now able to dewater 3,000 pounds of sludge in 3½ hours. It is done in a one step operation from clarifier to truck. Previously it would have taken 8 hours and the sludge had
to go through flotation thickeners first and then through colilters.

3. We are accomplishing this with 6½ hp as compared to previously using 146 hp. Monthly electrical usage has dropped from a norm of 65,000 KWH to 45,000 KWH. Demand has dropped from 200 KW to 135 KW.

4. Chemical costs for dewatering sludge have dropped from $40.00 per ton to $20.00 per ton.

5. The simplicity of operation has allowed us to eliminate 2 full-time positions and 1 part-time position by attrition.

**SUMMARY OF SAVINGS**

- Labor: approximately $40,000 annually (includes benefits)
- Electrical: $19,200 annually
- Chemical Costs: $7,500 annually
- Total: $66,700 annually

**TABLE 2**

**COST OF PRESS & INSTALLATION: $91,000**

APPROXIMATELY 1.4 YEARS PAYBACK

These are only dollar savings. The versatility this adds to the way we can run our plant cannot be estimated in dollars but believe me, it is priceless.
Past Presidents of NHWPCA

1967
Joseph Bruce - Keene
1968
William Finemo - Portsmouth
1969
Donmale Chamberlain - Hanover
1970
Gil Shepard - Nashua
1971
Leavitt Magrath - Hampton
1972
Chandler DuFresne - Pease AFB
1973
Ira Allen - Littleton
1974
Al Richard - Dover
1975
John Wood - Plymouth

1976
James Falls - Salem
1977
Henry Treitel - Derry
1978
William Royce - Kearsarge
1979
Ralph Page - Haverhill
1980
Charles Darrow - Henniker
1981
Mark Gauthier - Suncook
1982
David Beecher - Lebanon
1983
Lorraine Sander - Nashua
1984
Greg MacK - Suncook

New Hampshire Water Pollution Control Association Members

Ackerman, James P.
Allen, Ivan
Allan, Robert H.
Allen, Thomas H.
Andrews, Joseph G. II
April, Joseph O.
Arrey, Dana
Ayers, Daniel
Badcock, Russell H.
Bailey, James A.
Baldwin, Gunnaur
Bartlett, Kevin
Baxter, Carl W.
Beauchamp, Michael
Beauchane, Pamela
Beecher, David
Belanger, Marcel E.
Beliveau, Dennis
Berliner, Kenneth J.
Berry, Wendell
Bertogli, John E.
Best, Scott W.
Bevin, Richard
Bickford, John
Blakes, Paul
Blitodeau, Normand
Blitodeau, Phillip H.
Blissnette, Diane
Blaisdell, Robert
Blaisdell, William
Blake, David K.
Bourque, Robert
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Bradley, Kenneth
Breitrock, David A.
Briggs, Glenford E.
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Brodsgren, Stephen
Brooks, David
Brown, Ronald D.
Brown, Robert
Bruce, Joseph R.
Brunckhorst, William
Bucchi, Joseph
Buffum, David C.
Burelle, Lawrence H.
Bush, John R.
Butard, Jon
Butler, Malcolm
Butzche, Charles
Cabaniss, Joseph C.
Cadarette, Cameron
Caine, John F.
Campbell, Greg A.
Campbell, John G.
Campbell, Terry
Cantu, Ricardo
Cariselli, David
Carlson, George
Caron, John W.
Carroll, Brian
Carter, Raymond P.
Cartier, A.
Casazia, Stephen A.
Casey, Paul
 Cata, Brian
Chamberlain, Donald
Chandler, Thomas H.
Chapman, Thom F.
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Chouinard, Glenn R.
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Churchill, Peter W.
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Clavin, Kevin L.
Clifford, Steven W.
Cloppinger, H. G.
Clough, Stephen
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Collins, Lindsay M.
Collins, Ramce
Conklin, Bruce R.
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Cooper, Nathan R.
Corcoran, Paul A.
Corey, Thomas
Costley, Daniel J.
Crean, Stephen
Croteau, Hank
Croteau, Thomas J.
Cruss, Robert A.
Currie, Richard A.
Currie, Donald
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Dallone, Michael
Dame, Douglas A.
Danour, Charles E.
Dannehy, Stephen J.
Dangie, Donald F.
DeBois, Thomas
Denton, Timothy R.
Descoteaux, Roger D.
Dostrom, Richard F.
Dubois, John F.
Dudley, Steven G.
Donington, G. Keith
Dorval, Jay O.
Durkin, Arthur
Easter, Leonard
Elder, Don E.
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Faulkner, Raymond S., Jr.
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Finn, Alfred G.
Finch, William
Filmin, Alvin C.
Fisher, Wayne C.
Fitzgerald, Charles R.
Fitzgerald, John F.
Fitzgerald, Michael
Flanders, Richard A. Jr.
Fletcher, William L.
Forbes, Eugene
Ford, Ronald H.
Forsman, Albert C.
Frederick, Anthony J.
Freeman, William R.
French, Robert T.
Galbiati, Ken
Gartland, Carroll E.
Gerret, Ernest M. Jr.
Gauthier, Mark S.
Gauthier, Roger
Geothermal Ener. Co.
Glynn, Everett C.
Glynn, Walter R.
Gregory, Lewis
Grossman, Richard P.
Grover, Freeman S.
Grimling, Jay S.
Guerra, Richard J.
Haglund, Herbert E.
Haglund, William H.
Hynes, Richard
Hankinson, Robert B.
Harman, John
Harrington, Brian
Harrell, George O.
Hart, Larry
Hartley, John
Hartman, Conard
Hepburn, Conrad
Heupel, William A.
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Holmes, David
Horst, Catherine A.
Howard, John H.
Hrycyna, John
Hugens, Wayne L.
Hunt, Warren C.
Hunter, Glen O.
Hussey, Kevin P.
Industrial Vac. Co.
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Johnson, Gary C.
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Keith, Edwin H.
Kelly, Brian T.
Kemp, Sandra
Kemp, Amy
Kennedy, Donald F.
Kemp, William G.
Klein, Ralph W.
Kleffner, Burr E.
Knight, Richard
Klingel, William C.
Kudrick, Bruce
Kunz, Gary R.
Labonte, Albert
Lafayette, Martin G.
Laffin, Viki G.
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Lamp, George
Langille, James E.
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Larson, Robert H.
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Lepley, Joseph S.
Little, James A.
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Ludington, George
Loch, Lolo
Loder, Gerald J.
Lukas, Victor
Lundeen, William J.
Lynch, Dana C.
Macfarland, John D.
Mack, Gregory E.
Makej, Stanley
Magrath, Leavitt
Mahan, Alfred D.
Mahony, Francis R. Jr.
Maine WM Cont. Assoc.
Malpin, Anthony
Manci, Dretz G.
Marino, Frank A.
Mates, William B.
Mclnally, Nancy A.
Mclnally, Thomas L.
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McKenney, Robert
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Mehl, Myla D.
Meador, Dean
Messier, Denis A.
Michaud, Steve
Mlecuca, Michael
Moore, John A.
Murphy, James F.
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Neill, George L.
Norris, Walter E.
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Parsons, Jeffery W.
Parton, John A.
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Pelletier, Donald L.
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Pepin, Randall
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Perkins, Wayne V.
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Perry, Charles H.
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Peterson, Philip
Peterson, Robert W.
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Weeks, Dale
Weeks, Thomas W.
Weiss, Dennis W.
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White, Thomas
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Wilson, Wesley E.
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NEWPCA MEETING IN BOSTON

Our unofficial parent organization, the New England Water Pollution Control Association, recently held its largest and most successful meeting at the Mariott Hotel in the Copley Plaza in Boston. Over 60 exhibitors advertised their products or services during the January 28-30 meeting with over 800 registrants viewing these excellent displays.

During the Tuesday morning technical session on solids handling, New Hampshire operators presented talks on local accomplishments in sludge treatment and the resulting cost savings to their municipalities. Ray Carter of Manchester, Greg Mack of Somersworth, and Rick Cantu of Dover highlighted this session which generated many questions from the audience on "how it's done in New Hampshire." Copies of the three papers are available from the Operations Division. Overall, the meeting provides an opportunity for those in all phases of wastewater treatment to become better informed on the latest technological and equipment advancements, and to meet with other professionals in the clean water business.

At the annual business meeting on January 28, Bob Livingston was elected First Vice President of NEWPCA. Under the normal succession, next year Bob will be the first nominee from New Hampshire for the presidency of NEWPCA.

Greg Mack won the annual NEWPCA Plant Operations award in the solids dewatering category. A copy of the award winning paper appears in this issue of the Collector. The award consists of an appropriate plaque and a $100 check.

New Hampshire Water Supply & Pollution Control Commission
Franklin Training Center
SPRING 1985 COURSES

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<td>April 3 (Wed)</td>
<td>Safety</td>
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<td>April 10 (Wed)</td>
<td>Laboratory Troubleshooting</td>
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<td>April 17 (Wed)</td>
<td>Industrial Pretreatment</td>
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<td>April 24 (Wed)</td>
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<td>Basic Laboratory</td>
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<td>May 8 (Wed)</td>
<td>Electrical Maintenance</td>
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<td>May 15 (Wed)</td>
<td>Chlorination</td>
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<td>May 22 (Wed)</td>
<td>Collection Systems</td>
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<td>May 29 (Wed)</td>
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<td>June 5 (Wed)</td>
<td>Plant &quot;Trivia&quot; Contest</td>
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<td>June 12 (Wed)</td>
<td>Certification Exam Review</td>
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<td>June 19 (Wed)</td>
<td>Math Review for Operators</td>
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<td>June 26 (Wed)</td>
<td>Certification Exam</td>
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CERTIFICATION QUIZ NO. 7

Grade I
Centrifugal pumps are classified according to the
A. Direction of liquid flow through the pump's Impeller.
B. Type of power source used to drive the pump.
C. Type of liquid being pumped.
D. Direction of rotation of Impeller.

Grade II
The most commonly used type of pump used in a sludge pumping installation is a
A. Centrifugal pump.
B. Reciprocating pump of the plunger type.
C. Air ejector pump.
D. Multistate centrifugal pump.
E. Screw pump.

Grade III
If you are pumping a flow of 1200 gpm through an 8" diameter by 2400 foot long force main, the average detention time in the pipe is
A. 7.66 seconds.
B. 5.2 minutes.
C. 20.8 minutes.
D. 0.5 hours.
E. 7.66 hours.

Grade IV
A 10 inch sewer line to a WWTF is 4 miles long. If the wastewater is flowing at 2 fps, approximately how long will it take for the WW to reach the plant?
A. 1 hour
B. 2 hours
C. 3 hours
D. 4 hours
E. 5 hours

OPERATOR CERTIFICATION

The following operators passed the certification examinations in December, 1984:

Grade I — OIT
Harry R. Baldoumas
Wayne Danforth
Douglas A. Payne
David Pollock
Paul R. Roy
Harold A. Thomas

Grade II
James A. Cavallaro
Michael T. Dalton
Norman Plourde
John R. Wood, Jr.
Steve Clough

Grade III
James A. Bailey
Jeffrey H. Burke
Carl A. Colburn
Roger W. Hall
Robert R. Legace
Mario C. Leclerc

Grade IV
Brian Cate

CERTIFICATION QUIZ 6 ANSWERS

Grade I Number 1.
Grade II (all)
Grade III 2.5 ft.
Grade IV Number 1. Asiatic cholera and ameobic dysentery
Frances A. Twombly
This issue's profile is on Mr. Donald Chamberlain, Superintendent of the Hanover Wastewater Treatment Plant. Don has been with Hanover for twenty-five years and served as the town's resident inspector in charge of plant and sewer construction.

Since the plant has been on line, Don has been responsible for managing five full-time employees, a $600,000 operating budget and four million dollars worth of collection system improvements.

During this time, he has eliminated the use of fuel oil at the plant and provided research and development support to innovative wastewater treatment systems including an attached film anaerobic system as well as a hydrophobic treatment system.

Don's experience encompasses equipment operation, carpentry, welding, logging and serving as deputy sheriff for Windsor County in Vermont. While in construction, he acted as foreman of general layout and quality control.

Professional association activity has seen Don serving as director of both the New England and New Hampshire Water Pollution Control Associations, as president of the New Hampshire Water Pollution Control Association, and as a recipient of the New England & New Hampshire Water Pollution Control Association's E. Sherman Chase and Leonard Easter Merit Awards, respectively.

Don, while a soldier in the U.S. Army during World War II, received the Silver Star Medal for gallantry in action in Halsdorf and Stockem, Germany.

In the near future, Don will be overseeing the upgrading of the Hanover plant to secondary treatment. Rotating Biological Contractors, RBC's, are the proposed secondary process units. Presently, he is a member of the Value Engineering Team, evaluating the cost effectiveness of the proposed project.

Known as the "Bartering Baron of the Green Mountains," Don has a stockroom of supplies that rivals the better hardware stores of New England.

THANK YOU SPONSORS

We are pleased to publish another listing of sponsors. You have been a great help towards the publication of "The Collector" and we hope that all of our readers and sponsors will continue to support the NHWPCA. Thank you!

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Donald W. Zeaman
603-749-5735

LAISSIER CONTROL SYSTEMS, INC.
Paul Deschenes
802-767-3200

EASTERN EQUIPMENT & SUPPLIES CO.
Doug Hayes
603-880-3733

TRI-STATE PACKING SUPPLY, INC.
Dale Weeks
207-883-5218

CARLON-FERNCO
Bob McDonough
603-868-5176

ANDERSON-NICHOLS, INC.
George F. Carlson, Jr.
603-228-1121

DUFRESNE-HENRY, INC.
Edward L. Rushbrook, Sr.
603-669-8672

COSTELLO, LOMASNEY & deNAPOLI, INC.
Daniel J. Costello, P.E.
603-668-8223

CAMP, DRESSER & McKEE
Al Firmin
617-742-5151

ROY F. WESTON, INC.
Formerly Environmental Engineers, Inc.
Karen A. Johnson-Kimball
603-226-1334

"One of the problems for sewage plants is you never know exactly what's coming down the pipe"
SAFETY CORNER

SAFETY COMMITTEE

The Safety Committee, at its January 31 meeting, completed an outline of a safety course to be offered at the Franklin Training Center on April 3, 1985. Copies of this outline will be available at the Trade Fair in March.

Two films related to safety in the wastewater field are being purchased, and will be available for loan after the April 3 course.

The Committee has joined the NH Safety Council and will have access to materials and new regulations related to the field.

The Committee will have a booth at the trade fair, including hand-outs and safety T-shirts — first time offered. Several T-shirts will be given to the highest scorers on a safety quiz.

Safety Committee Chairman,
Mike Butler

("Hazardous Awareness" and "Accidents Happen")

REMINDER

The "Safety Corner" is looking for original safety materials from its readers. Newspaper clippings, short articles, and safety experiences are needed. This is the opportunity for you to share your experience and knowledge.

Entries should be addressed to Mark Gauthier, NHWS&PCC, P.O. Box 95, Hazen Drive, Concord, NH 03301.

CASPER MAN DIES
AT SEWAGE PLANT

CASPER — The Natrona County Coroner's Office is investigating the death of a 34-year-old construction worker who died at the municipal waste water treatment plant Thursday night.

Robert L. Dewey, Jr., was found dead in a manhole at the sewage treatment plant on Bryan Stock Trail at about 10:30 p.m.

The Casper man was last seen by co-workers who left the plant about 5:30 p.m., police report.

Dewey was employed by Robert Dougan Construction and had been inserting a valve into a pipeline at the time of his death, a spokesman for the treatment plant said.

The manhole is about seven feet deep and was partially filled with liquid debris when Dewey was found, the spokesman said.

County Coroner James Thorpen said the cause of Dewey's death will not be known until the autopsy was complete.

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CLASSIFIED

Used Equipment For Sale
1. Smith and Loveless Sludge Concentrator
   Model 40
   Maximum 38 GPM at 1.0% Solids
   Cake 7.8% Solids
   Perfect condition. For more information, contact Bruce Kudrick, 603-485-7000.

2. Marlow Plunger Pump Model DE-61AZ
   240 volt, single phase, 3Hp, 23-58 GPM
   With control panel — 2 years old. For more information, contact Terry Schaefer, Rochester, VT, 802-767-3347.
Lab Talk

In many educational courses in the wastewater field, method of controlling an activated sludge process is a complex subject. Of the many different parameters that can be used to monitor a system, microbiological evaluation can be very informative. Unfortunately there is not much literature available for an operator to use as a guide. In order to get the benefits from micro-monitoring, the person doing the evaluation should be involved with the plant process. As with any parameter, a trend analysis should be made for an individual plant. Obviously the analysis does not have to be done by a microbiologist, but some basic understandings of microbial principles is very helpful. Another important factor is equipment quality. As a rule, the better the microscope, the easier the evaluation.

The first step as with any procedure is to plan out a sampling program that will provide you with a reliable sample. Any time delay is a serious factor affecting results. The same routine time period should be used to avoid any questionable variables. If possible, a daily observation will give the best results. The next step is for the analyst to become knowledgeable with the test procedure by simple observation. The third step is developing your micro-monitoring parameters. I have broken this category into three that are of interest to me.

I. Floc formation, which is a general description and considers:
   a. Diversity of sludge characteristics.
   b. Clump sizes.
   c. Density of sludge particles.
   d. Color.

II. Activity, an indication of the protozoan micro-population presence and behavior as:
   a. Low, few and inactive.
   b. Moderate and active.
   c. High and extremely active.

III. Bacterial characteristics, which can describe any formations observed such as:
   a. Appearance of and abundance of filamentous types.
   b. Non floc-forming cells.
   c. Rod-shaped or round cells.
   d. Group formations on filaments or clumps.

A notebook should be kept of these observations for study and records. These are general characteristics that can be expanded to include much more information depending on what is desirable. In time the analyst can correlate other plant data with his observations and use micro-monitoring as a spot check to develop effective process control.

Philippe J.G. Maltais

Familiar Faces in new places

Roger Taillefer has left Milford and is now working for M & E Consultants.

Steve Dolloff has been promoted to Chief Operator at Milford

Robert Kilham, formerly of Milford, has taken over the Chief Operator position in Derry

Jim Scafidi has left Salem and is now working for Haddock in Hudson

Mike Dalton of Salem has been promoted to Chief Operator in Salem.

Jerry Holcomb, formerly of Winchester, is now the new Superintendent of the Ashuelot Valley Sewer Authority treatment facility in Keene.

Lorraine Sander of Nashua has been appointed to chair the NEWPCA Plant Operations Committee.

Mark Gauthier of NHWS&PCC has been appointed to the NEWPCA Safety Committee.

George Neill, Director of Operations at NHWS&PCC, has been appointed to the NEWPCA Certification Committee.