

# Operator Facts

TECHNICAL FACTS FOR WASTEWATER TREATMENT PLANT OPERATIONS  
New York State Department of Environmental Conservation

## New Discharge Monitoring Report (DMR) Manual Clarifies Reporting

Earlier this year, a workgroup of DEC staff completed updates and revisions of the *DMR Manual* which provides guidance to SPDES permittees on how to correctly complete their DMR's. In addition, two rounds of training were held statewide to provide training to permittees.

Both the *DMR Manual* and the training were well received and the quality of DMR's submitted to the NYSDEC has noticeably improved. We appreciate the efforts by the individuals completing these forms and we look forward to continued cooperation in fine tuning the process.

Some areas of particular interest during the training are the following:

1. Rounding and Significant Figure Reporting Conventions
2. Calculating the Number of Excursions
3. Frequency of Analysis and Sample Type Reporting
4. Signature Authorization Issues

Rounding and significant figures reporting conventions are areas which needed expansion and clarification in the new *DMR Manual*. To avoid reporting errors, care must be taken in the calculation of reported

values to assure that calculations are performed uniformly and that false excursions/violations are not generated in error. The rules for determining the number of significant figures in reported values (to match the number in permit limits) are now clearly defined in the *DMR Manual* in Section 4.3, Date Reporting Conventions.

The method of calculation of the Number of Excursions has been changed to reflect the number of days that measured values are outside minimum and/or maximum permit limits (limits in the average columns are not counted). There is also a clarification of how to calculate this value when one or more measurements represent a seven-day period. The Number of Excursions should not be confused with "violations", which are determined by DEC's Regional staff. The Number of Excursions gives DEC an idea of the number of days when data used in the calculation of the reported value on the DMR was outside of the permit limits.

The new *DMR Manual* includes two tables, listing the acceptable abbreviations that may be entered under the Frequency of Analysis and Sample Type fields of the DMR. These abbreviations have been standardized to remove duplications and

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## Web Watch... Nitrogen Removal Training

We recently posted the "Nitrogen Removal Training" materials on the Operator Outreach Website.

The package focuses on low-cost operational tools and process control to optimize nitrogen removal at both activated sludge and fixed film WWTPs. Strategies for nitrification and denitrification, as well as troubleshooting, are presented. The five(5) modules can be viewed in PowerPoint or as Adobe Acrobat PDF files. Visit:

[http://www.dec.state.ny.us/website/dow/bwcp/n\\_trainmod.html](http://www.dec.state.ny.us/website/dow/bwcp/n_trainmod.html)

## Future ABC Exam Dates

Applications for ABC exams must be postmarked by the filing deadline. Those people retaking the ABC exam must have their check postmarked by the filing deadline. Applicants who miss the deadline will be scheduled for the next exam.

<u>Exam Date</u>	<u>Filing</u>	<u>Deadline</u>
August 27, 2003	July 16, 2003	
February 25, 2004	January 14, 2004	
August 25, 2004	July 14, 2004	

Winter Issue

## Operator Facts

The purpose of this technical bulletin is to inform wastewater operators about various operational practices, problem-solving approaches, technical developments and certification and training issues.

The bulletin is produced by:

Bureau of Water  
Compliance Programs,  
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Phillip T. Smith, P.E.,  
Chief, FOAS  
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Coordinator

You are invited to submit technical articles or other information of interest to operators for publication in *Operator Facts*.

Be sure to notify us of a change of address if you wish to continue to receive *Operator Facts* and Training Notices. Please include your certificate number.

The mention of any product or listing of any company's seminar is not an endorsement by this Department.

Send all correspondence to: *Operator Facts*, NYSDEC, 625 Broadway, Albany, New York, 12233-3506, Phone (518)402-8177 or Fax (518) 402-8082. Visit our website at: [http://www.dec.state.ny.us/website/dow/bwcp/foas\\_main.html](http://www.dec.state.ny.us/website/dow/bwcp/foas_main.html)



## New DMR Manual (continued from Page 1)

to enable consistent data entry information on the DMR.

Guidelines detailing who can legally sign the DMR are provided in the *DMR Manual* and a Signature Authorization form is provided in Appendix G. This authorization may be delegated by the permittee to another individual who is responsible for the operation of the wastewater treatment system. We encourage permittees to have two or more individuals authorized to sign DMR's in order to address situations where the primary signer is unable to sign the DMR. These authorizations must take place prior to submission of the DMR.

There is also a *DMR Manual* website which can be accessed at <http://www.dec.state.ny.us/website/dow/bwcp/dmrmanual.html> It contains a Frequently Asked Questions section which clarifies some of the issues that came up during the training and via email. This section will be updated as new questions are asked. The site also includes a training schedule, files of applicable laws and regulations, forms used in reporting, and a list of NELAP certified labs. A table of DEC contacts is also provided.

If you have questions, you should send an email to them at: [spdesdmr@gw.dec.state.ny.us](mailto:spdesdmr@gw.dec.state.ny.us) To obtain a copy of the *DMR Manual*, call the SPDES Compliance Information Section at (518) 402-8177.

## Wastewater Plant Websites

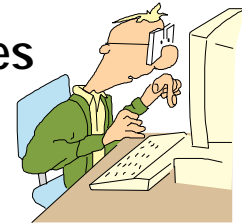
Thinking about having a website for your wastewater treatment plant? A website is a powerful business tool for providing information to the public and improving overall customer service.

"How to Build a Website for Your Treatment Plant" has a good discussion and many practical tips for website design.

Visit <http://members.aol.com/ronwater1/build.htm> for the complete article. Keeping the website small and making it informative and interesting without too much technical jargon are key. Building a website is not difficult and is not expensive e.g., see "Website Now" at: <http://www.websitenow.com>

Here are some things that you could have on the website...

- Mission Statement
- Photo Tour of Plant



- Programs
- Services & Departments
- Odor Hot Line
- Awards
- Contacts, Phone Numbers, & Emergencies
- Annual Report
- Adopt-a-School Program
- Capital Improvement Projects
- Removals & Efficiencies

Check out these New York wastewater plant websites to get more ideas.

Albany County Sewer District  
<http://www.albanycounty.com/departments/sewerdistrict/welcome.htm>

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## Considerations for Chlorine Handling and Storage

Disinfection of wastewater is essential to protect public health, and chlorine has proven to be an effective disinfectant. However, chlorine gas is a hazardous chemical that can cause severe injury or death if released to the atmosphere. When exposed to normal atmospheric pressure and temperature, liquid chlorine vaporizes to chlorine gas. In shipping containers, it is a liquified gas under pressure. Neither the gas nor the liquid is explosive or flammable; both react chemically with many substances. Chlorine is only slightly soluble in water. The gas has a characteristic odor and a greenish yellow color and is about two and one-half times as heavy as air.

Due to the highly hazardous characteristics of chlorine, each utility should maximize the security measures of its storage and handling to minimize the opportunity for intentional release of the gas. Each utility should ensure that the procedures described below are implemented.

- Know the schedule for chlorine delivery to the facility and have a clear line of communication with the supplier in the event of a change in a schedule.
- Store chlorine cylinders and ton containers, full or empty, in areas that are secure, clean, well ventilated, fire resistant, and sheltered. Do not store near elevators, gangways or ventilation systems, and avoid subsurface storage areas.

- Storage temperatures should not exceed 130°F. Segregate chlorine cylinders from other compressed gas containers. Do not store near turpentine, ether, hydrocarbons, other flammable materials, a hydrous ammonia or finely divided metals. Keep area free of trash to avoid fire hazards.
- Store full containers so that access, daily inspection, removal, etc. can be accomplished with a minimum of handling. Keep full and empty containers separated.
- Use care in handling all chlorine containers. Avoid all situations which will cause them to drop or be struck with force by any object. Never move chlorine containers without valve outlet cap(s) and protective hood in place.
- Make sure that the local police and fire department know where chlorine storage tanks are located so that they can respond appropriately in the event of an emergency.
- Have a chlorine emergency repair kit and emergency breathing apparatus on-site.

*This article came from EPA's Water Protection Task Force Notice #VII: Wastewater Systems (11-21-01).*

## 30<sup>th</sup> Anniversary of the Clean Water Act

Wastewater treatment plant operations, maintenance, and laboratory personnel can take great pride as we celebrated the 30<sup>th</sup> Anniversary of the Clean Water Act in October 2002.

From the early days of the New York State Pure Waters Program, less than 50% of the municipal wastewater plants were at secondary treatment. Now, we talk about how the local stream or lake is so much better.

Wastewater professionals have played a crucial role in enhancing water quality and protecting the \$13 billion capital investment that has gone into infrastructure improvements since the early 1970s. These water pollution control plants are complex facilities with advanced levels of treatment. The dedicated operators who run these wastewater plants need continued training and need the full support of the local community.

Support your wastewater treatment plant operator...the front-line defenders against water pollution!



# RENEWAL TRAINING & UPCOMING MEETINGS



## News and Events

NYWEA, Inc.  
126 North Salina Street - Suite 200  
Syracuse, NY 13202  
(315) 422-7811  
<http://www.nywea.org>

### National Events

WEFTEC  
Los Angeles Convention Center  
Los Angeles, CA  
October 11-15, 2003

### State Events

Legislative Forum  
Albany, NY  
May 6, 2003

Spring Technical Conference  
\*Operators Day on June 5th\*  
Saratoga Springs, NY  
June 4-6, 2003

### Western Chapter

Greater Buffalo Environmental  
Conference  
Buffalo, NY  
May 12-13, 2003

### Collection System Personnel

NYWEA has adopted a voluntary collection system certification program. The goal of the program is to promote the employment of properly trained and experienced personnel for the operation of public and industrial wastewater collection systems. This certification will be available to all people working or supervising sewer operation and maintenance.

More information on the certification requirements and exam schedule will be posted on the NYWEA web site (<http://www.nywea.org>) over the next few months and can also be found in future issues of *Operator Facts*.

## EPA Technology Transfer Publications

The National Risk Management Research Laboratory of EPA's Office of Research and Development has a 'Product List & Order Form' that is available from:

ORD Publications, USEPA, NSCEP, PO Box 42419, Cincinnati, Ohio 45242-0419

Products can also be ordered, free of charge, by visiting <http://www.epa.gov/ttbnrml>



The Village of Mt. Morris has a new digester gas mixing system by Envirex Products (US Filter Co.) for sale. The Pearth System components include the following:

- 1 Perth Rotary Valve Housing with rotary valve system mounted and piped inside
- 1 Rotary Valve Control Panel, explosion proof
- 1 Compressor Assembly, Nash positive displacement unit with 15 hp explosion proof motor, separator and appurtenances
- 1 Compressor Control panel
- 5 Discharge Wells and Lances (316 stainless steel)

Plus a lot of piping accessories, valves and fittings. For information, contact Chet Canary at (585) 658-2910 or Rob Sciarrone at 381-9250.

March 18, 2003

### *Treatment of Dairy Processing Wastewater*

Location: SUNY Delhi

Cost: \$45

Contact: Bob Wither, NYSDEC @ (518) 402-8097

April 8, 2003

### **Laboratory QA/QC** presented by NEIWPCC

Location: Holiday Inn, Kingston

Cost: \$75

Contact: Tim Miller, NYSDEC @ (518) 402-8106

April 9, 2003

### **Managers Forum** presented by NEIWPCC

Location: Holiday Inn, Kingston

Cost: \$75

Contact: Tim Miller, NYSDEC @ (518) 402-8106

July 23-24, 2003

### **Math and Exam Review** presented by NEIWPCC

Location: Albany Co. North WWTP

Cost: \$95

Contact: Tim Miller, NYSDEC @ (518) 402-8106

August 13, 2003

### **Septic Tank Sand Filter**

Co-Sponsored by NYWEA Central Chapter

Location: Sackets Harbor Municipal Building

Cost: \$25

Contact: Tim Miller, NYSDEC @ (518) 402-8106

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**Wastewater Plant Websites**

Chemung County Sewer District, [www.chemungcounty.com/sewer.html](http://www.chemungcounty.com/sewer.html)

Gloversville-Johnstown WWTP, [www.g-jwastewater.com](http://www.g-jwastewater.com)

New York City Department of Environmental Protection, [www.nyc.gov/html/dep/html/drainage.html](http://www.nyc.gov/html/dep/html/drainage.html)

Onondaga County Sewer Districts, [www.lake.onondage.ny.us](http://www.lake.onondage.ny.us)

The Frank E. Van Lare (Rochester) W T F , [www.history.rochester.edu/class/vanlare/home.htm](http://www.history.rochester.edu/class/vanlare/home.htm)

Town of Riverhead, [www.riverheadli.com/rsewer.html](http://www.riverheadli.com/rsewer.html)

Village of Cobleskill WWTP, [www.cobleskill.org/waste.htm](http://www.cobleskill.org/waste.htm)

Or, visit the Water Environment Federation's website at: [http://www.wef.org/Links/treatment\\_plants.html](http://www.wef.org/Links/treatment_plants.html) to tour plants around the world.

Think Website!

## Employment



Wanted: Engineer I

The Rockland County Sewer District #1 seeks an engineer who will perform field inspection and supervision of construction and rehabilitation projects, assist senior engineers (engineering staff of eight engineers) in preparation of contract specifications and drawings and design assignments utilizing AutoCAD, subdivision reviews, I and I surveys, etc. Minimum requirement is a BS degree in Engineering (Civil, Sanitary Environmental or Chemical) which included at least 15 credits in Civil Engineering or related courses.

Permanent position, to be filled on a provisional basis. Full (CSEA) civil service benefits. Starting salary \$47,257. Contact: Bob Dworkin, Public Works Administrator, Rockland County Sewer District #1, 4 Route 340, Orangeburg, NY 10962. Phone (845) 365-6111, (fax) 365-6686 or e mail [dworkinb@co.rockland.ny.us](mailto:dworkinb@co.rockland.ny.us).

## sew • er (sōō'ər)n.

Webster defines sewer as...“An artificial, usually underground conduit for carrying off sewage or rainwater.”

Years ago, London's sewers were open ditches sloped slightly to drain human wastes toward the River Thames, and ultimately into the sea. Sewer ditches quickly filled with garbage and human wastes, which overflowed onto streets, into houses and marketplaces throughout London.

Sewer means “seaward” in Old English. For “A Glimpse into London's Early Sewers,” visit <http://www.swopnet.com/engr/londonsewers/londontext1.html>

You can also find the “Wastewater Treatment Plant World History” at <http://members.aol.com/erikschiiff/history2.htm> for a discussion of where the wastewater “profession” really started.

## Certification Courses

### Basic Operations

May 5-16, 2003  
SUNY at Morrisville  
(315) 684-6082

March 17-28, 2003  
Great Lakes Laboratory - Buffalo  
(716) 878-5422

### Basic Laboratory

March 31 - April 4, 2003  
SUNY at Morrisville  
(315) 684-6082

### Activated Sludge

To Follow Basic Operations Course  
Hudson Valley Community College  
(518) 629-4830

April 2003  
NYCDEP  
(212) 860-9316

April 7-10, 2003  
Great Lakes Laboratory - Buffalo  
(716) 878-5422

April 14-17, 2003  
SUNY at Morrisville  
(315) 684-6082

April 28 - May 28, 2003  
Ulster Community College  
(845) 687-5173

### Supervision and Technical Operations Course

April 18 - May 2, 2003  
Great Lakes Laboratory - Buffalo  
(716) 878-5422

### Management Course

April 28-30, 2003  
SUNY at Morrisville  
(315) 684-6082

May 12-16, 2003  
Great Lakes Laboratory - Buffalo  
(716) 878-5422

## Oldies, but Goodies...

### EPA Publications

Here are some good publications that should be on your bookshelf at the plant.

- *Aerobic Biological Wastewater Treatment Facilities: Process Control Manual*, Order #430/9-77-006
- *Chemical Aids Manual for Wastewater Treatment Facilities*, Order #430/9-79-018
- *Handbook: Retrofitting POTWs*, July 1989, Order #625/689-020
- *Manual: Nitrogen Control*, September 1993, Order #625/R-93-010
- *Project Summary: Wastewater Treatment Plant Instrumentation Handbook*, November 1985, Order #600/S2-85-026
- *Summary Report: The Causes and Control of Activated Sludge Bulking and Foaming*, July 1987, Order #625/8-87-012



*Wastewater Treatment Ponds*, March 1975, Order #430/9-74-001

These publications can be ordered from:

USEPA Educational Resources Information Center (ERIC) at (800) 276-0462 or visit their website at: <http://www.ericse.org/index.html>

National Technical Information Service (NTIS) at (800) 553-6847, or you may email them at: [orders@ntis.fedworld.gov](mailto:orders@ntis.fedworld.gov)

Better idea...

Go online to <http://www.epa.gov/clariton/clhtml/pubtitle.html> and click on the "National Environmental Publications Internet Site" to download entire manuals!

You can find a complete list of the "EPA Treatment Publications" at: <http://www.epa.gov/OW-OWM.html/sectre.htm>

## Study Hall for ABC Exam

Check out the DEC's Operator Outreach website at: <http://www.dec.state.ny.us/website/dow/bwcp/certexam.html> to find various materials to help prepare for the ABC exam. This section has useful references, lists the exam topics, and also shows what sections of the Sacramento manuals to study for each exam category.

The Water Environment Federation (WEF) recently released the *Wastewater Operator's Guide to Preparing for the Certification Examination*. This new edition, which was revised and expanded, includes 240 questions based on validated need-to-know criteria for Grades I-IV (same as in New York).

The guide includes suggested topics to study and sample questions that are referenced to specific technical sources. The price is \$38 for Members and \$54 for Non-Members and can be ordered by calling WEF at: (800) 666-0206, or you can email them at: <http://www.wef.org>

WEF also has an "Operations Central" website which offers a Wastewater Operations Glossary, Conversions, Constants, Formulas, and Chemical Information, as well as Wastewater Operator Certification and Operations Training Products. The site can be found at: <http://www.wef.org/OperationsCentral/>

Also helpful is WEF's "Skill Tester" which includes practice questions in various categories and skill levels and can be found at: <http://www.wef.org.skillstester>



## New WEF Activated Sludge Manual

The Water Environment Federation (WEF) has just released *Activated Sludge Manual of Practice - 2002*.

This second edition of *Activated Sludge, MOP OM-9*, represents the most complete information source for the activated sludge process. Despite the advances, poor process performance can still present problems for many plants. The ob-

jective of this manual is to help wastewater professionals acquire a greater knowledge of the process, solve performance problems, and improve operations.

You can order the manual, Order # MM 2023 by calling the Water Environment Federation at (800) 666-0206, or you can email them at: <http://www.wef.org>

## Announcing the Middle and High School Poster Contest

"The Importance of a Wastewater Treatment Plant" provides the theme for DEC's new poster contest for Middle and High School students.

We hope that public education efforts like this contest, which involves young people, will generate an interest in the wastewater profession as a career.

Posters should show how wastewater treatment plants protect our waters. The informational flyer on the rules, judging procedures, and poster requirements can be found at

<http://www.dec.state.ny.us/website/dow/bwcp/postercon.html>

The deadline for receipt of posters is May 16, 2003.

Middle and High School winners will be chosen at the USEPA's National Trainer's Conference in Buffalo on June 8-11, 2003. Both winning posters will be printed and distributed to municipal plants across New York State. Each participant will receive a certificate of appreciation.

Here's how we need your help to make this a success. We are asking that operators across the state contact their local schools and get the contest information flyer to them! Give the school the contest website address! Offer them a plant tour!

For more information, or if you have any questions, contact Joe Brillling at (518) 402-8183, or you may e mail Joe at:

[jbbrilli@dec.state.ny.us](mailto:jbbrilli@dec.state.ny.us)



## Fixed Film and Lagoon Poster Troubleshooting Guides

There are three excellent posters that are available from the National Environmental Training Center for Small Communities (NETCSC). The posters are set up with various observations, probable causes, what to check or monitor, and solutions.

To order:

- Troubleshooting Guide for Rotating Biological Contactors, Item # TRPSOM09, \$2.15 each
- Troubleshooting Guide for

Trickling Filters, Item # TRPSOM15, \$2.60 each

- Troubleshooting Guide for Lagoons, Item # TRPSOM08, \$3.05 each

The posters can be obtained from: NETCSC (West Virginia University) at (800) 624-8301, or you can email them at: <http://www.netc.wvu.edu>

## 20th Annual Wastewater Operator Trainers' Conference

The 20th Annual Wastewater Operator Trainers' Conference will be held from June 8-11, 2003 in Buffalo, New York.

The host hotel will be the Adam's Mark. For reservations, contact the hotel at (716) 845-5100, or you can visit their website at [www.adamsmark.com/buffalo/index.asp](http://www.adamsmark.com/buffalo/index.asp)

This site will also provide you with other useful material regarding the Buffalo-Niagara area, such as maps and general information.

The National Wastewater Operator Trainers' Conference, otherwise known as the National 104(g) Conference brings together the state, federal, and regional personnel responsible for providing an adequate supply of trained personnel to operate and maintain existing and future wastewater treatment works. The conference is typically well attended by operators.

The four-day program will include: Preconference Workshop on Microbiology, a full-day Workshop on Advanced Activated Sludge Troubleshooting, Poster Session on O&M Success Stories, Public Education Approaches, selection of the winners of the Middle & High School Poster Contest, and a bus trip to Niagara Falls, which flows at 44 millions gallons per minute!

For more information on the conference, contact Robin Yasinsac at (518) 402-8089, or you can email Robin at: [rmyasins@dec.state.ny.us](mailto:rmyasins@dec.state.ny.us)

## Free Vulnerability Assessment Software

USEPA is encouraging wastewater plants to perform vulnerability assessments and will provide free software entitled "Vulnerability Security Assessment Tool - VSAT."

The VSAT software is a comprehensive tool for wastewater utility professionals seeking to assess their utility's vulnerabilities, develop priorities based on cost and feasibility of remediation, and determine potential solutions for the prioritized vulnerabilities.

VSAT software is an adjunct to the Association of Metropolitan Sewage Agencies (AMSA) *Asset-Based Vulnerability Checklist for Waste-*

*water Utilities*, a publication designed to help utility personnel identify and evaluate a range of vulnerabilities that could put their assets (physical plant, employees, knowledge base, information technology, and customers) in jeopardy.

The checklist may be downloaded from AMSA's website at: <http://www.amsa-cleanwater.org/pubs/2002avcheck.pdf>, or you may also purchase at hard copy from AMSA.



VSAT is available free of charge to all public wastewater utilities. Visit AMSA's site at: <http://www.amsa-cleanwater.org/about/about.cfm> to request a copy. For technical assistance regarding the software, visit [www.VSATusers.net](http://www.VSATusers.net) or call (888) 340-8830.

You may also visit DEC's "Wastewater Infrastructure Security" website at: [http://www.dec.state.ny.us/website/dow/bwcp/sec\\_main.html](http://www.dec.state.ny.us/website/dow/bwcp/sec_main.html) for checklists, links, training, and articles on plant security.

**Visit FOAS's  
Website at: [http://www.dec.state.ny.us/website/dow/bwcp/foas\\_main.html](http://www.dec.state.ny.us/website/dow/bwcp/foas_main.html)**

New York State DEC  
Facility Operations Assistance Section  
625 Broadway - 4th Floor  
Albany, New York 12233-3506

Visit FOAS' Website:  
[http://www.dec.state.ny.us/website/dow/bwcp/foas\\_main.html](http://www.dec.state.ny.us/website/dow/bwcp/foas_main.html)

