

**office of water programs
csus foundation**



**CALIFORNIA STATE UNIVERSITY,
SACRAMENTO**

**ANNUAL REPORT
1999-2000**

July 1, 2000

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Office of Water Programs California State University, Sacramento Foundation

MISSION STATEMENT

To provide the best possible operator training programs and operation and maintenance training manuals and videos at the lowest possible cost

The Office of Water Programs, California State University, provides resource training materials and operator training programs for operators, supervisors, and administrators of drinking water distribution and treatment facilities and wastewater collection and treatment facilities. In addition, we are continuing to do further research in these areas and to develop new training materials with the help of grants and contracts with US EPA and State Agencies.

Highlights of the 1999-2000 fiscal year include:

- β *Stormwater Programs* – the Office of Water Programs (OWP) and Caltrans Stormwater Programs have expanded their activities during the past year. Project teams are researching and studying stormwater runoff to advance knowledge and to anticipate, prevent, and/or control any adverse effects of the runoff. These unprecedented research and monitoring programs include study in the areas of erosion control and soil stabilization; gross pollutants (litter); Best Management Practices (BMP) evaluation; vegetation management practices; watershed (river loading TMDLs); drain inlet cleaning; pathogens, disinfection, and toxicity; data management; and information dissemination.

On behalf of the California Department of Transportation (Caltrans), the Office of Water Programs has assembled a team of research engineers, scientists, and faculty to provide technical guidance and management services supporting Caltrans stormwater research. In this endeavor, OWP is a partner with the University of California, Davis (UCD). OWP, UCD and Caltrans personnel work literally side by side administering research, including planning projects, overseeing the conduct of the work, evaluating the results, and disseminating the information. Most projects are executed in the lab or field by private consulting firms or groups at other CSU and UC campuses. Based on research results, the OWP team also provides technical input for Caltrans policy development in this field.

Journal publications

Johnston, J., H. Yamaguchi, and A. Frankel, "Caltrans Statewide Storm Water Management Program", accepted for publication in *Transportation Research Record*.

Conference proceedings and presentations

Currier, B. and G. Moeller, "Lessons Learned: The Caltrans Storm Water Best Management Practice (BMP) Retrofit Pilot Study", Proceedings of the California Water Environment Association Statewide Conference, Sacramento, CA, April 2000.



Johnston, J., H. Yamaguchi, and A. Frankel, "Caltrans Statewide Storm Water Management Program" Proceedings of the Transportation Research Board Annual Meeting, Washington, DC, January 2000.

Lippner, G., R. Churchwell, R. Allison, G. Moeller, and J. Johnston, "A Scientific Approach to Evaluating Storm Water Best Management Practices for Litter", Proceedings of the California Water Environment Association Statewide Conference, Sacramento, CA, April 2000.

Conference presentations (only)

Singh, A., "Caltrans Water Quality Standards Inventory Database", presented at the California Water Environment Association Statewide Conference, Sacramento, CA, April 2000.

Submitted abstracts

Allison, R., K. Walter, D. Marx, G. Lippner, R. Churchwell, "A Method For Monitoring And Analyzing Litter In Freeway Runoff As Part Of The Caltrans Litter Management Pilot Study", submitted to American Society of Civil Engineers for publication and presentation at their Joint Conference on Water Resources Engineering and Water Resources Planning and Management in Minneapolis, MN.

Kayhanian, M., and K. Murphy, "Characteristic of Storm Water Runoff from Highway Construction Sites in California", submitted to the Transportation Research Board for publication and presentation at their Annual Conference in Washington D.C.

Lippner, G., J. Johnston, and S. Combs, "Results of the Caltrans Litter Management Pilot Study", submitted to the Transportation Research Board for publication and presentation at their Annual Conference in Washington D.C.

Moeller, G., and G. Lippner, "Practicability of Detention Basins for Treatment of Caltrans Highway Runoff Based on a Maximum Extent Practicable Evaluation", submitted to the Transportation Research Board for publication and presentation at their Annual Conference in Washington D.C.

Quasebarth, T., D. Schroeder, R. Chappell, R. Churchwell, and G. Lippner, "An Investigation of Factors Influencing Solids Transport and Deposition Into Highway Drain Inlets", submitted to the Transportation Research Board for publication and presentation at the Annual Meeting.

Reports

"Caltrans Storm Water Management Plan", contributing authors include: Johnston, J., and G. Moeller.

"Caltrans Storm Water Guidance Manual", contributing authors include: Johnston, J., and G. Moeller.

"Load Assessment", delivered to the State Water Resources Control Board in November 1999 to fulfill the annual reporting requirement in the Caltrans Storm Water Management Plan. Contributing authors include: Moeller, G., Singh, A., and Meyer, S.



“Receiving Water Limitation Assessment”, delivered to the State Water Resources Control Board in November 1999 to fulfill the annual reporting requirement in the Caltrans Storm Water Management Plan. Contributing authors include: Moeller, G., Singh, A., and Meyer, S.

Website development

Singh, A., Water Quality Planning Tool. Designed and developed a web-based database/tool to assist environmental planners and managers in their efforts to comply with water quality standards. Tool is available at <http://stormwater.water-programs.com>.

- β **SMALL WATER SYSTEM OPERATION AND MAINTENANCE INFORMATION VIDEOS** (US EPA grant) – the Office of Water Programs continues devoting a major effort to developing training videos for very small water system operators, managers, owners, and elected officials. It is anticipated that the work in progress can be completed in the next twelve months. A new web page with chat room capability is projected to be completed by the end of this summer.
- β <http://www.owp.csus.edu> – the OWP website informs our customers of the availability of training courses and materials, program or price changes, and ordering and enrollment procedures. It is estimated that an average of 200 users visit the site daily and an average of 25 orders per week are placed over the web.
- β *Activity* – during this fiscal year, more than 15,500 orders were received and processed. In addition, for the first time, promotional items were developed and have been very well received.
- β *CD-ROM Development* – OWP is developing a CD-ROM version of **OPERATION OF WASTEWATER TREATMENT PLANTS, Volume I**. A prototype for the first four chapters has been completed and is being reviewed internally. This project will also include investigating the feasibility of on-line testing. This project will continue to develop CD-ROM versions of all OWP manuals.
- β **NEW!** *OPERACIÓN Y MANTENIMIENTO DE SISTEMAS DE RECOLECCIÓN DE AGUAS RESIDUALES* – a customized Spanish translation of portions of the operator training manuals, *OPERATION AND MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS*, Volumes I and II – became available during this fiscal year. Collection system operators in Baja California assisted with the preparation and translation of this training material.

The Office of Water Programs sells 17 different manuals and two sets of operator training videos. From 1972 to June 30, 2000, more than 725,000 manuals and over 182,000 enrollments were purchased. Materials have been shipped to 88 foreign countries. Tests graded exceed 750,000 and more than 107,000 people have successfully completed our programs.

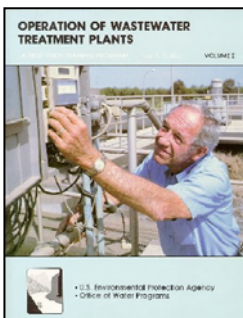


SUMMARIES BY TITLES



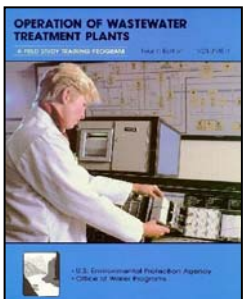
Small Wastewater System Operation and Maintenance Volume I (1997)

To date, 2,181 copies have been sold, 838 students have been enrolled, and 417 have successfully completed this training program. More than 29 colleges and universities use this manual as a textbook. Individuals and/or companies in Canada and 19 other countries have purchased manuals and enrollments.



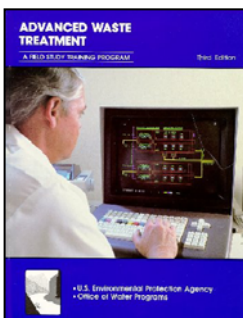
Operation of Wastewater Treatment Plants Volume I (1980)

Now in its Fourth Edition, sales exceed 157,080 manuals and 48,271 enrollments in the United States, Canada, and 48 foreign countries. Successful course completions total more than 28,000. About 415 colleges and universities are using this manual as a textbook.



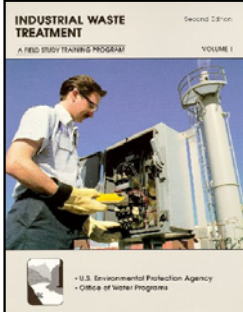
Operation of Wastewater Treatment Plants Volume II (1980)

Also in its Fourth Edition, Volume II has sales of more than 113,600 manuals and 24,700 enrollments. Successful completions total 14,317 and 372 colleges and universities use this manual. People throughout the United States, Canada, and 52 foreign countries have purchased this book.



Advanced Waste Treatment (1987)

Statistics at the end of this fiscal year show that there were 44,000 copies purchased, 10,000 people enrolled, and 6,384 certificates of completion sent. Now in its Third Edition, the manual is available in 44 foreign countries and has been purchased for classes at 224 colleges and universities.



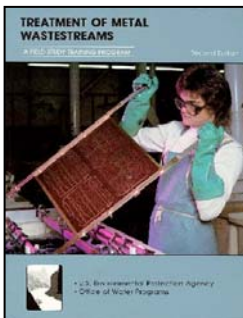
Industrial Waste Treatment
Volume I (1994)

Since 1994, more than 19,484 Volume I, ***Industrial Waste Treatment***, manuals have been sold and 3,710 enrollments have been purchased. Completions total 1,955. This manual is being used in 45 foreign countries, the United States, and Canada, and in 151 colleges and universities.



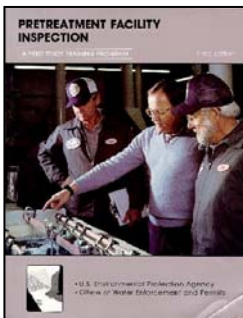
Industrial Waste Treatment
Volume II (1995)

One hundred and sixteen colleges and universities have adopted this textbook. More than 10,246 manuals have been sold, 1,395 people have enrolled in the home-study course, and 765 of them have successfully completed their coursework. This book is sold through the United States, Canada, and in 41 foreign countries.



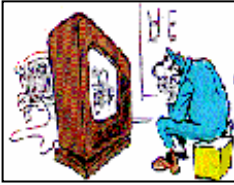
Treatment of Metal Wastestreams
(1986)

One of our more specialized textbooks, this manual is being used in 41 foreign countries as well as in the United States and Canada. Enrollments total more than 6,400 and completions number more than 5,200. One hundred and twenty-eight colleges and universities sell this manual in their bookstores.

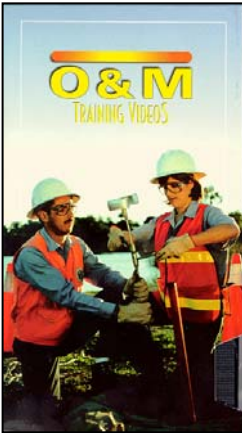


Pretreatment Facility Inspection
(1988)

This training manual has sales totaling over 13,300 to 102 colleges and universities and to individuals in the United States, Canada, and 36 foreign countries. Total enrollments exceed 5,029 and more than 3,200 people have been awarded certificates of completion.



In the summer of 1998, a five-video set of training videos was produced to complement the operator training course, ***Pretreatment Facility Inspection***. These videos are designed to train inspectors to use safe and efficient procedures when inspecting industrial pretreatment facilities. To date, 816 sets of these videos have been purchased.



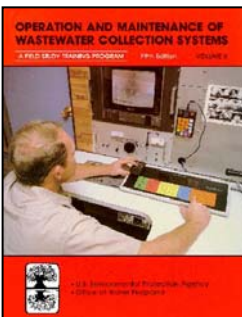
Wastewater Collection System O & M Training Videos

OWP’s first set of training videos (1997) were created for operators of wastewater collection systems. They are suitable for training potential, new, and experienced collection system operators to safely operate and maintain their systems. Over 750 of these six-video sets are being used throughout the United States, Canada, and several foreign countries.



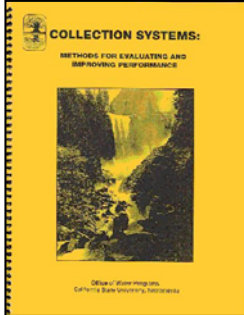
Operation & Maintenance of Wastewater Collection Systems
Volume I (1987)

Cumulative statistics for this course show a total of over 43,000 manuals sold, more than 9,000 enrollments purchased, and over 6,200 successful completions. One hundred and fifty-seven colleges and universities sell this manual and we distribute this manual to 43 foreign countries.



Operation & Maintenance of Wastewater Collection Systems
Volume II (1987)

This manual is being used throughout the United States, Canada, and in 41 foreign countries. One hundred and fifty colleges and universities use it as a textbook. The total number of manuals sold exceeds 31,600. Overall figures for this course show totals of more than 4,700 enrollments and over 3,200 successful completions.



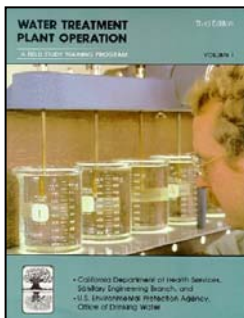
Collection Systems: Methods for Evaluating and Improving Performance (1998)

A total of 949 copies of this useful manual have been sold throughout the United States and Canada, in 12 foreign countries, and to 17 colleges and universities. This is an additional resource for collection system operators that is designed to assist them in studying the adequacy and effectiveness of their O & M program.



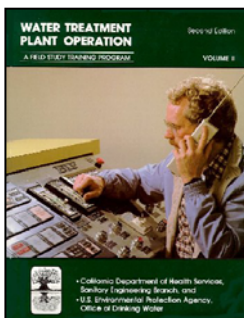
Operación y Mantenimiento de Sistemas de Recolección de Aguas Residuales (1999)

Collection system operators in Baja California assisted with customizing and translating into Spanish portions of the operator training manuals, Volumes I and II, ***Operation and Maintenance of Wastewater Collection Systems***. Thirty-eight copies have been sold to date.



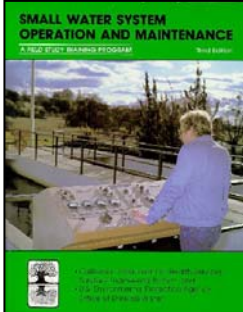
Water Treatment Plant Operation
Volume I (1983)

More than 94,300 copies of this training manual are in circulation throughout the United States and Canada and in 57 foreign countries. Enrollments total more than 30,100 and successful completions now number over 15,700. Three hundred and one colleges and universities provide this manual to students.



Water Treatment Plant Operation
Volume II (1983)

Now in its Third Edition, this manual has been sold to 261 colleges and universities, in 46 foreign countries, the United States, and Canada. Of the 13,900 enrollments purchased, more than 8,000 people have successfully completed this program. Sales of this manual sold totals more than 58,700.



Small Water System Operation and Maintenance
(1997)

In its Fourth Edition, this manual's sales total more than 44,000 worldwide – throughout the United States and Canada and in 50 foreign countries. Enrollments total over 9,300 and more than 4,800 people have completed their coursework to date. One hundred and eighty-five colleges and universities purchase and use this manual.



Water Distribution System Operation and Maintenance
(1987)

A new Fourth Edition came out this year and its sales bring the total sold to more than 63,300 since 1987. These manuals have been purchased by 195 colleges and universities and by people throughout the United States and Canada, and in 51 foreign countries. Enrollments total 13,000 and successful completions stand at 7,300.



Utility Management
(1998)

We have sold 3,929 copies of this manual, enrolled 1,772 people, and sent Certificates of Completion to 1,181 people. More than 25 colleges and universities have adopted this manual and we have received orders from 22 foreign countries as well as from the United States and Canada.



The next few pages provide the following information:

Figure 1 - a summary for the fiscal years 1998, 1999, and 2000 of the

- ✧ Number of manuals sold,
- ✧ Number of students enrolling,
- ✧ Number of students receiving academic credit,
- ✧ Number of students successfully completing,
- ✧ Number of students dropping, and
- ✧ Number of tests graded.

Figure 2 is a summary of the number of colleges and universities that have used our manuals during this same period, and Figure 3 shows a summary of the total number of foreign countries that have purchased our manuals since the programs began.



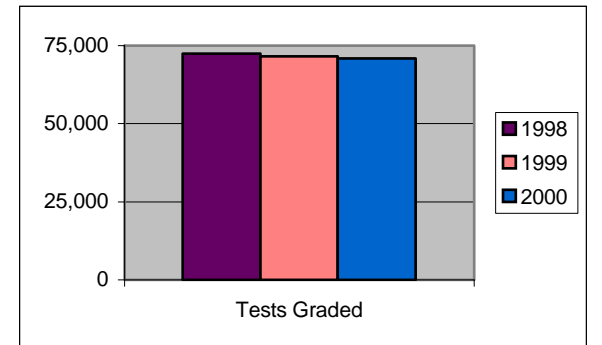
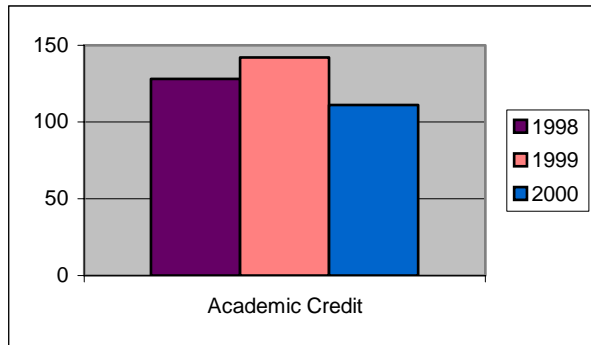
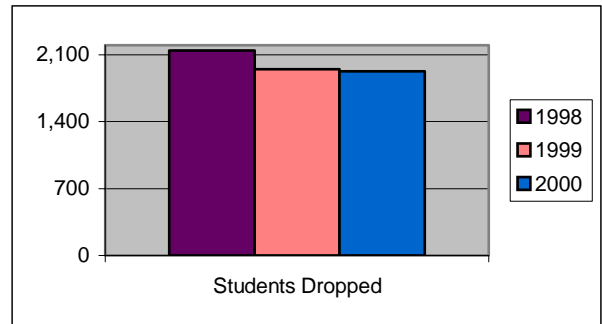
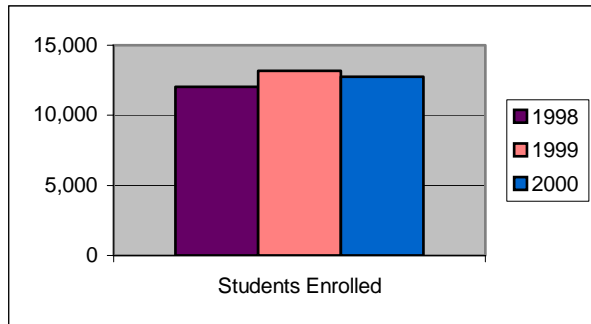
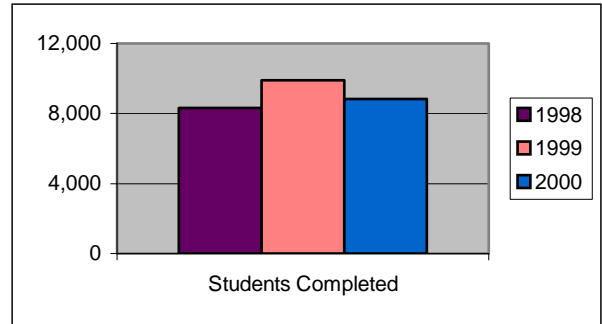
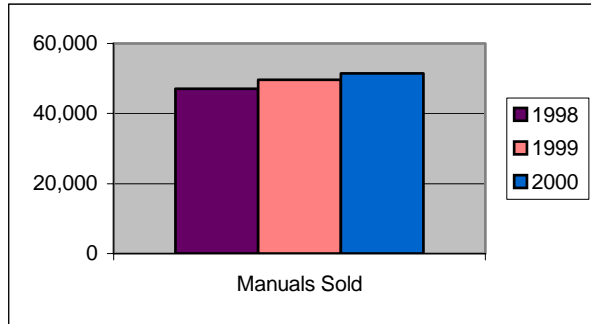


Figure 1: THREE-YEAR SUMMARY OF STATISTICS FOR OFFICE OF WATER PROGRAMS

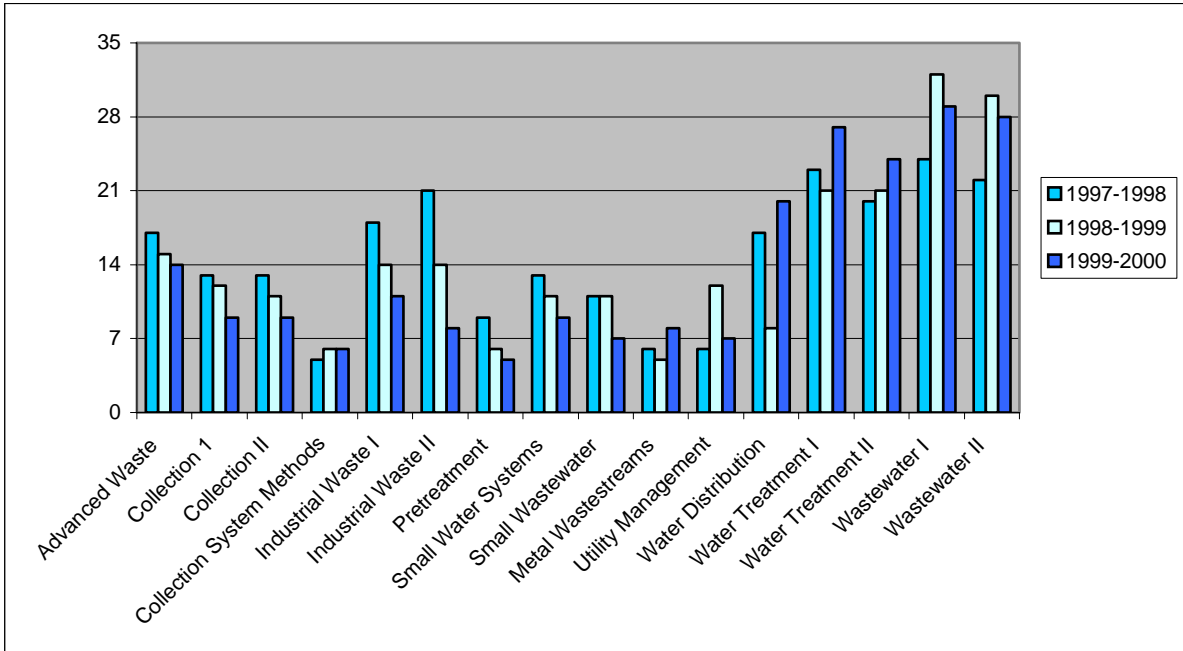


Figure 2. THREE-YEAR SUMMARY OF NUMBER OF COLLEGES/UNIVERSITIES THAT USED OUR MANUALS AS TEXTBOOKS

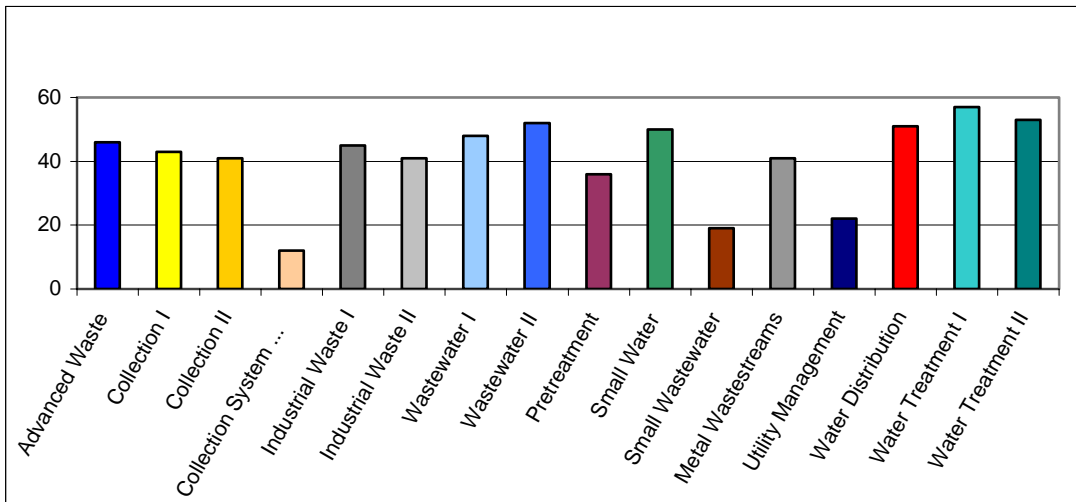


Figure 3. SUMMARY OF NUMBER OF FOREIGN COUNTRIES PURCHASING MANUALS



CURRENT EDITIONS OF OPERATOR TRAINING MANUALS

SMALL WASTEWATER SYSTEM OPERATION AND MAINTENANCE

Volume I – 1st Edition, First Printing, 1997

OPERATION OF WASTEWATER TREATMENT PLANTS

Volume I – 4th Edition, First Printing, 1992; Second Printing, 1994; Third Printing, 1998

Volume II – 4th Edition, First Printing, 1993; Second Printing, 1996; Third Printing, 1999

ADVANCED WASTE TREATMENT

3^d Edition, First Printing, 1995; Second Printing, 1998

INDUSTRIAL WASTE TREATMENT

Volume I – 2nd Edition, First Printing, 1994; Second Printing, 1996; Third Printing, 1999

Volume II – 2nd Edition, First Printing, 1995; Second Printing, 1997

OPERATION & MAINTENANCE OF WASTEWATER COLLECTION SYSTEMS

Volume I – 5th Edition, First Printing, 1996; Second Printing, 1999

Volume II – 5th Edition, First Printing, 1995; Second Printing, 1998

NEW! SPANISH COLLECTION SYSTEM OPERATOR TRAINING MANUAL

1st Edition, First Printing, 1999

COLLECTION SYSTEMS:

METHODS FOR EVALUATING AND IMPROVING PERFORMANCE

1st Edition, First Printing, 1998

TREATMENT OF METAL WASTESTREAMS

2nd Edition, First Printing, 1993; Second Printing, 1995

PRETREATMENT FACILITY INSPECTION

3^d Edition, First Printing, 1996

WATER TREATMENT PLANT OPERATION

NEW! *Volume I – 4th Edition, First Printing, 1999*

Volume II – 3^d Edition, First Printing, 1998

SMALL WATER SYSTEM OPERATION AND MAINTENANCE

4th Edition, First Printing, 1999

WATER DISTRIBUTION SYSTEM OPERATION AND MAINTENANCE

NEW! *4th Edition, First Printing, 2000*

UTILITY MANAGEMENT

1st Edition, First Printing, 1998

*Note: Only latest editions and printings are available for purchase.