ICR Water Utility
Database System Users' Guide
Release 1.1

by

EPA Systems Development Center
(A Contractor Operated Facility)
Science Applications International Corporation
200 North Glebe Road, Suite 300
Arlington, VA 22203

Contract No. 68-W1-0055
Delivery Order No. 083

Delivery Order Project Officer

Cynthia Shetley-McCauley
Office of Ground Water and Drinking Water
U.S. Environmental Protection Agency
Washington, DC 20460

Technical Support Center
Office of Ground Water and Drinking Water
U.S. Environmental Protection Agency
Cincinnati, OH 45268
Production Release

The attached pages in the ICR Water Utility Database System Users’ Guide have been revised to address changes made to Release 1.1 of the application. Please replace the pages as described below:

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contents</td>
<td>i through iv</td>
</tr>
<tr>
<td>Preface</td>
<td>1 through 4</td>
</tr>
<tr>
<td>Chapter 2: Getting Started</td>
<td>11 and 12</td>
</tr>
<tr>
<td>Chapter 5: Initial Sampling Plan</td>
<td>79 and 80</td>
</tr>
<tr>
<td>Chapter 7: Monthly Sampling Results</td>
<td>131-132</td>
</tr>
<tr>
<td>Appendix C: Release 1.1</td>
<td>213-214</td>
</tr>
<tr>
<td>Index</td>
<td>215-220</td>
</tr>
</tbody>
</table>

The attached diskettes contain the Release 1.1 update to the ICR Water Utility Database System. Release 1.1 is an incremental update to the application. It enhances Release 1.0, but does not replace it. Please refer to Installing Release 1.1 on revised page 12.
CHAPTER 4: WATER SYSTEM AND LABORATORY IDENTIFICATION
Overview ................................................................. 37
Water System Identification ........................................... 37
Laboratory Identification ................................................. 38

CHAPTER 5: INITIAL SAMPLING PLAN
Overview ........................................................................ 41
Sampling Plan Dates ........................................................ 42
Treatment Plants ............................................................ 42
Basic Plant Information ..................................................... 46
Water Resource/Intake Information ..................................... 46
Influent Information ........................................................ 48
Process Train Information ............................................... 49
Unit Process Information .................................................. 53
Finished Water Information .............................................. 61
Hypochlorite Stock Information ........................................ 62
Distribution System Entry Point/Simulated Distribution System (SDS)
Sample Locations .......................................................... 64
Defining Entry Point/SDS Sample Locations ......................... 64
Distribution System ....................................................... 68
Wholesale Information .................................................... 71
ICR Samples .................................................................... 71
Sample Identification Numbers ......................................... 71
Sample Location Numbers ............................................... 72
Defining a Sample ............................................................ 74
Defining and Copying a List of Samples ................................. 76
Reviewing Your Completed Initial Sampling Plan ................... 78
Generating an Initial Sampling Plan Report ......................... 78
Sending Your Initial Sampling Plan to EPA ......................... 79
Generating a Data Transfer Diskette and Report .................... 80
EPA Reviews Initial Sampling Plan .................................... 81

CHAPTER 6: MONTHLY SAMPLING
Overview .......................................................................... 83
Developing a Monthly Sampling Plan ................................... 83
Selecting a Sampling Period .............................................. 84
Copying Data ................................................................... 86
Manual vs. Electronic Planning ........................................... 87
Modifying Your Monthly Sampling Plan ............................... 88
Reviewing Your Monthly Sampling Plan .............................. 90
Generating Data Collection Forms ...................................... 91
Collecting Samples and Operating Information ...................... 93
Entering Operating Information .......................................... 93
Population and Flow Rate ............................................... 93
Treatment Plants ........................................................... 94
Distribution System Entry Point/SDS Sample Locations ........................................ 98
Distribution System ................................................................................................. 98
Wholesale Information ............................................................................................. 99
Entering Sample Collection Information ................................................................. 99
Deleting Information After You Have Entered Sample Collection Data .................. 100
Sample Quality Assurance (QA) Codes and Comments ........................................... 101
Particle Size Count Samples .................................................................................... 102
Chlorine Residual Samples ....................................................................................... 103
Water Quality Parameter Samples ............................................................................ 103
Verifying Your Monthly Sampling Data ..................................................................... 103

CHAPTER 7: MONTHLY SAMPLING RESULTS
Overview ...................................................................................................................... 107
Entering Monthly Sampling Results ......................................................................... 108
General Water Quality Analyses .............................................................................. 111
Disinfectant Residuals Analyses .............................................................................. 114
Chlorine Demand Analyses ...................................................................................... 114
DBP, TOC, UV, Br, TOX Analyses ........................................................................... 115
AOC/BDOC Analyses ............................................................................................... 117
Microbiological Analyses .......................................................................................... 120
Hypochlorite Analyses .............................................................................................. 126
Deleting Samples with Sample Analytical Results ...................................................... 126
Completing Your Sample Analytical Results .............................................................. 127
Reviewing Completed Monthly Sampling Results ..................................................... 127
Generating a Monthly Sampling Results Report ......................................................... 131
Sending Your Monthly Reporting Package to EPA .................................................... 131
Generating a Data Transfer Diskette and Report ......................................................... 132

CHAPTER 8: FINAL DESIGN
Overview ...................................................................................................................... 135
Copying Data ............................................................................................................. 135
Treatment Plants ........................................................................................................ 136
Distribution System Entry Point/SDS Sample Locations ........................................... 136
Distribution System .................................................................................................. 137
Wholesale Information ............................................................................................. 137
Reviewing Your Completed Final Design ................................................................... 137
Generating a Final Design Report .............................................................................. 137
Sending Your Final Design Data to EPA ................................................................... 137
Generating a Data Transfer Diskette and Report ......................................................... 138
Archiving ICR Data .................................................................................................... 139
# Contents

## CHAPTER 9: REPORTS
- Overview ................................................................. 141
- Initial Sampling Plan .................................................. 142
- Monthly Sampling ...................................................... 143
- Monthly Sampling Results .......................................... 146
- Final Design ............................................................ 147
- Generating a Report .................................................. 148
- Data Transfer ........................................................... 149

## CHAPTER 10: SYSTEM ADMINISTRATION
- Overview ................................................................. 151
- Backing Up Data ....................................................... 151
- Restoring Data ........................................................ 152
- ICR Tips ................................................................. 153
- EPA Utility Identifier ................................................ 153
- Data Analysis .......................................................... 154

## APPENDIX A: WINDOW HIERARCHY ................................. 155

## APPENDIX B: DATA ENTRY WORKSHEETS .......................... 173

## APPENDIX C: RELEASE 1.1 ........................................... 213

## INDEX ......................................................................... 215

---

ICR Water Utility Database System
for use with Microsoft® Windows™

**Licenses and Trademarks**

Microsoft, Access, Excel, and MS-DOS are registered trademarks, and Windows and Windows 95 are trademarks of Microsoft Corporation.

IBM is a registered trademark of International Business Machines.

1-2-3 is a registered trademark of Lotus Development Corporation.

LapLink is a trademark of Traveling Software.

Pentium is a registered trademark of Intel Corporation.

Zip Drive is a registered trademark of Iomega.

Other product and corporate names may be trademarks of other companies, and are used only for explanation, without intent to infringe.
PREFACE: BEFORE YOU START

What is the Information Collection Rule (ICR) Water Utility Database System?

The ICR Water Utility Database System is a Personal Computer (PC) -based Microsoft® Access™ runtime application developed to enable large water utilities to meet the requirements of the ICR. It is distributed by the United States Environmental Protection Agency (EPA). The application will help you:

- Record and review data you are required to report under the ICR.
- Verify that the data you send to EPA are correct and complete.
- Report your data in the format specified by EPA.

The ICR Water Utility Database System is part of the overall ICR Data Management System (DMS), an information system that captures treatment process, water resource, and sample data from approximately 350 public water systems. EPA and the water industry will use this data to evaluate the quality of drinking water in the United States, identify the most effective water treatment technologies currently in use, and develop future drinking water regulations.

WARNING: You must use Release 1.1 of the ICR Water Utility Database System to report data to EPA. You cannot use Release 1.0 or an Alpha, Beta, or other test release. If you have assembled ICR data using a test release, print out your Initial Sampling Plan reports and use them as worksheets to enter data into Release 1.1. If you have entered data into Release 1.0, you will not have to re-enter any information. For detailed instructions on installing Release 1.1, see Appendix C.

If you have not yet installed Release 1.0 on your computer, you must do so before you install Release 1.1. Release 1.1 is an update to the ICR Water Utility Database System. It is not a standalone application.

What is the ICR Water Utility Database System Users' Guide?

The ICR Water Utility Database System Users' Guide is provided with the ICR Water Utility Database System to help you use the application. The guide describes the information to be entered into the application. It also contains detailed instructions for using the application, including how to install and start the software, how and when to enter data into the system, how to generate reports on the data in the system, and how to submit data to EPA.

Any rule language, guidance, or notifications you receive from EPA regarding the rule supersede the instructions and suggestions included in the guide.
How is the ICR Water Utility Database System Users' Guide Organized?

The ICR Water Utility Database System Users' Guide is organized in the same way that data and activities flow through the ICR information gathering process. The guide starts with an overview of ICR data collection, moves on to describe the tasks you will perform before you begin sampling, continues with the activities necessary to record treatment process and sample collection information, progresses to the tasks related to cataloging the analytical results you receive from the laboratory, and concludes with final reporting requirements. Each chapter in the body of the guide consists of a set of activities performed at a public water utility, progressing through a description of the information you will enter into the application and culminating in an explanation of how you will send the information to EPA.

- Chapter 1 introduces the ICR, the ICR DMS, and the ICR Water Utility Database System.
- Chapter 2 explains how to install the software on your computer and describes the basic mechanical features of the application.
- Chapter 3 outlines the process of entering data into the ICR Water Utility Database System and summarizes the overall ICR data and activity flows.
- Chapter 4 explains how to enter basic water system and laboratory identification information into the system.
- Chapter 5 tells how to enter water system design and other data into the application to develop an Initial Sampling Plan.
- Chapter 6 outlines how to plan for monthly sampling under the rule and record plant operating and sample collection data.
- Chapter 7 shows how to enter sample analytical results from the laboratory into the system and submit monthly data to EPA.
- Chapter 8 explains how to prepare and submit final design data.
- Chapter 9 summarizes the reports generated by the ICR Water Utility Database System.
- Chapter 10 provides general data integrity and system administration information.

Before You Begin

You will find it much easier to use the ICR Water Utility Database System if you collect the information you need before you begin working with the application.

You should first respond to the Notice of Applicability you received from EPA. The Agency will use your response to confirm that the ICR applies to your utility. EPA will then send you a Notice of Final ICR Applicability Determination, which lists the treatment plants in your public water system that are included in the ICR and provides a general
outline of the information you are required to report for each plant. Both notices include an ICR Treatment Plant Identification Number for each treatment plant. You cannot enter data for a treatment plant into the application until you have obtained an ICR Identification Number for the plant.

Once you have confirmed that you are subject to the rule, review and make any necessary changes to the water system and treatment plant schematics provided by American Water Works Association’s (AWWA) Assistance Team (A-Team). The schematics are intended to illustrate conditions in your water system and interpret your specific ICR sampling requirements.

After you have reviewed the schematics, you should begin collecting your treatment process data. Appendix B, Data Entry Worksheets, includes blank forms you can use to help gather the data. Photocopy a set of blank forms for your water system according to the following instructions:

- One copy of Worksheet 1: Public Water System.
- One copy of Worksheet 2: Treatment Plant for each plant at your utility that is subject to ICR monitoring.
- One copy of Worksheet 3: Water Resources and Intakes for each intake that feeds a monitored treatment plant.
- One copy of Worksheet 4: Process Train for each process train in a treatment plant that is subject to ICR monitoring.
- One Unit Process Worksheet (4.1 through 4.22) for each unit process included in a process train in a treatment plant that is subject to ICR monitoring.

For the purposes of the ICR, your unit processes include any disinfectants or additional water you add in the process train.

- One copy of Worksheet 5: Distribution System Entry Point/Simulated Distribution System (SDS) Sample Locations for each plant subject to ICR monitoring.
- If you sell finished water to other public water systems, one copy of Worksheet 6: Wholesale Information.

You may want to make extra copies of Worksheet 6, depending upon how many wholesale customers you have.

- One copy of the Distribution System worksheets (7 and 7.1).

You may want to make extra copies of Worksheet 7.1, depending upon how many sample locations you are required to establish in the distribution system under the ICR.

Complete the left-hand (Initial Sampling Plan) side of the forms before you sit down at the computer to use the ICR Water Utility Database System. If you have a question about any item listed on the forms, start the application and use the Search function in the ICR Water Utility Database On-Line Help System to obtain a definition and source of the information.
CHAPTER 2: GETTING STARTED

Introduction

The Information Collection Rule (ICR) Water Utility Database System is a tool for public water systems to report ICR data. You must enter all the ICR data for your water system into a single copy of the application and report all your data on one set of diskettes for each reporting period. If you are recording data from multiple treatment plants, enter the data from all the plants into one copy of your ICR database.

If you would like to have multiple users or users at different facilities enter ICR data, you may consider the options listed below.

WARNING: These options have not been tested under operating conditions at a utility. If you employ any of these options, you may run a risk of corrupting your data.

WARNING: If you use options 2, 3, or 4, be very careful to keep track of the active copy of your ICR database. You cannot copy parts of a database from one copy of the application to another.

1. Load the application on to a laptop computer and move the computer from location to location.

2. Use a commercial bulk file transfer application (such as LapLink™), to transfer files from one machine to another.

3. Install the application and data files on a mass storage device, such as a Zip Drive™, and move the device from one machine to another.

   If you use this option, you must copy the application and data files onto a drive specified as the C:/ drive in order to generate a data transfer diskette.

4. Install the application on multiple computers. Back up the data from one computer, and restore it to the second. Instructions for backing up and restoring are on pages 151 through 153.

The system settings on the two machines must be identical in order for this process to work. See the ICR Help Topic "System Information Window" for a list of system settings.

Installing the Application

The installation instructions on the following page assume you have a basic knowledge of Windows. If you need assistance, refer to the Microsoft® Windows™ users' guide that came with your copy of Windows™.
Installing the Application on a Standalone Personal Computer (PC)

1. Start Windows™.

2. Check your hard disk to ensure that you have enough space to run the application. The ICR Water Utility Database System requires at least 40 megabytes (MB) of free space on your hard drive for the application and data files.

3. Insert the diskette labeled “ICR Water Utility Database System Disk 1” into a floppy disk drive on your PC.

4. Choose Run from the File menu in Program Manager. To do this, use your mouse to point to the word "File" at the top of the Program Manager window. Click and hold down the mouse button. A menu will appear immediately below your mouse pointer. Move the pointer until the word “Run” is highlighted. Release the mouse button. Windows will display the Run dialog box.

5. Type setup in the Run dialog box. (Type b:setup if your diskette is in the B: \ drive.)

6. Press Enter or choose OK on the dialog box with your mouse.

7. Follow the setup instructions that appear on the screen.

The setup instructions will give you the option of installing the application in any directory on your computer. If you are recording information for one public water system, use the default (C:\ICRPROD) directory.

Installing the Application on a Local Area Network (LAN)

The ICR Water Utility Database System was not designed to run on a LAN. If your water utility has a LAN, install the application directly on your hard drive according to the directions above. Do not install it on your file server.

Installing Release 1.1

Once you have installed Release 1.0 (the six diskettes included with your original Users’ Guide, you must install the Release 1.1 update. For detailed instructions on installing the update, see Appendix C.

Recording Data for More than One Public Water System

The ICR Water Utility Database System was designed to capture data for only one utility. However, you may install multiple copies of the application (one for each public water system for which you are entering data) on one PC if you follow these guidelines:

• Create a separate subdirectory for each copy of the application according to the instructions in your Windows™ Manual. Do not use the name C:\ICRPROD for any of the separate subdirectories.

• Install the application separately into each subdirectory. When you install, set the defaults so that the database files in the correct subdirectory will open when you start the application from the designated program group. Instructions for setting defaults are included in the installation prompts. You should also give each program group a new name.

Release 1.1 September 1996
You cannot make changes to the data from a report preview. You must go back in to the data entry windows to modify the information.

When you have finished printing reports, return to the Initial Sampling Plan menu by clicking the Prev button.

Sending Your Initial Sampling Plan to EPA

**WARNING:** You must use Release 1.0 of the ICR Water Utility Database System to report data to EPA. If you have assembled your ICR data using an Alpha, Beta, Gamma or other test release, print out your Initial Sampling Plan reports and use them to enter data into Release 1.0.

Your Initial Sampling Plan includes the following elements:

- A transmittal letter identifying any deviations from rule requirements that are included in your Initial Sampling Plan.
- A schematic diagram of your water system that includes all your treatment plants and your distribution system.
- A detailed schematic diagram of each treatment plant.
- A diskette containing your Initial Sampling Plan data.
- An Initial Sampling Plan Summary Report to help EPA verify that the data you sent the Agency are the data it received. This report will be printed out automatically as part of the data transfer process.

The summary report identifies your water system and serves as formal notice that you have sent your Initial Sampling Plan to EPA. For more information on the transmittal letter and schematics, see the ICR Sampling Manual.

You will need the following items to complete a data transfer package for EPA:

- Several blank, formatted 3.5" diskettes.

**NOTE:** Do not use 5.25" diskettes to send ICR data to EPA.

- Diskette labels (printed or typed) listing:
  - The PWS ID and name of your Public Water System.
  - The sampling period for which the data were collected (the sampling period for the Initial Sampling Plan is Design).
  - The date you generated the diskette.
  - The name and telephone number of the ICR Technical Contact for your water system.

- A diskette mailer addressed to:

  USEPA (ICR4600)
  ICR Data Center
  Room 1111 East Tower
  401 M Street, S.W.
  Washington, DC 20460
Generating a Data Transfer Diskette and Report

To generate your diskette and report:

1. Turn on or connect to your printer.

2. Click the Transfer button on the Initial Sampling Plan menu to open the Data Transfer Menu.

NOTE: If you would like to check your data without making a transfer diskette, select the Preliminary Data Completeness Check button from the Transfer Initial Sampling Plan menu. The preliminary checks are identical to the Data Transfer Completeness Checks described below.

3. Check to make sure you have not already generated a transfer diskette for the Initial Sampling Plan by clicking the Data Transfer History button. If you need to resubmit your Initial Sampling Plan, contact the ICR Data Management System (DMS) Hotline at (703) 908-2155 before you generate the second transfer diskette.

4. Select the Data Transfer button from the Data Transfer Menu to open the Data Transfer window. The application will first check your data to determine whether they meet the minimum requirements for completeness. For a list of completeness checks, see the sidebar on page 82 or the ICR Help topic “Know My Initial Sampling Plan is Complete.”

5. If your data are incomplete, the application will print out an Initial Sampling Plan Data Transfer Completeness Check Report. Use the report to go back into your data and complete the missing information, then repeat Steps 1, 2, and 4 of the data transfer process.

WARNING: The Data Transfer Completeness Checks do not ensure that you have entered all the data necessary for the utility to comply with ICR requirements. For example, if you neglect to identify a required sample, the checks will not catch the error. They will, however, help you identify some gaps in your data.

6. Once your data has passed the transfer checks, the Initial Sampling Plan Data Transfer window will open. Insert the first blank diskette in a floppy drive, select the letter of the drive, and click OK to begin data transfer.

You must use 3.5” diskettes to send ICR data to EPA. Do not use 5.25” diskettes.

The Data Transfer in Progress dialog box will open. Unless you are otherwise prompted by the application, do not click the mouse or use the keyboard while the box is open.

A status line will appear at the bottom of the window, telling you what part of the transfer is in process. During data transfer, the application extracts the data from your database, compresses the data, copies it on to the floppy disk, and generates a printed report. The process normally takes several minutes.
F.4 Precursors - Monthly Analyte Results Matrix—Validate the results of DBP precursor samples taken for a single sampling period.

F.5 Microbials - Monthly Analyte Results Matrix—Validate the results of microbiological samples taken for a single sampling period.

F.6 Hypochlorite Stock - Monthly Analyte Results Matrix—Validate the results of samples taken from hypochlorite stock for a single sampling period.

**Generating a Monthly Sampling Results Report**

Generate the Monthly Sampling Results reports just as you did the Initial Sampling Plan and Monthly Sampling reports you used earlier. To generate the report:

1. Choose Reports from the Monthly Sampling Reports Menu to open the Report Selection List.
2. Turn on your printer, select the report, and click the Print button.

When you have finished printing reports, return to the Monthly Sampling Results menu by clicking the Prev button.

**Sending Your Monthly Reporting Package to EPA**

You will send the Agency a diskette containing your Monthly Data, which includes treatment process, sample collection, and sample analytical result information, and a summary report to help EPA verify that the data you sent the Agency are the data it received. The summary report identifies your water system and serves as formal notice that you have sent your Monthly Reporting Package to EPA.

You will need the following items to complete a data transfer package for EPA:

- Several blank, formatted 3.5" diskettes.
  
  **NOTE:** Do not use 5.25" diskettes to send ICR data to EPA.

- Diskette labels (printed or typed) listing:
  - The PWS ID and name of your Public Water System.
  - The Monthly Sampling Period for which the data were collected.
  - The date you generated the diskette.
  - The name and telephone number of the ICR Technical Contact for your water system.
Monthly Sampling Results

- A diskette mailer addressed to:
  
  USEPA (ICR4600)
  ICR Data Center
  Room 1111 East Tower
  401 M Street, SW.
  Washington, DC 20460

Generating a Data Transfer Diskette and Report

To generate your diskette and report:

1. Turn on or connect to your printer.

2. Click the Transfer button on the Monthly Sampling Results menu to open the Data Transfer Menu.

NOTE: If you would like to check your data without generating a data transfer diskette, select the Preliminary Data Completeness Check button from the Transfer Monthly Sampling Results Menu. The preliminary checks are identical to the Data Transfer Completeness Checks described below.

3. Check to make sure you have not already generated a transfer diskette for the Monthly Sampling Period by clicking the Data Transfer History button. If you need to resubmit your Monthly Reporting Package, contact the ICR Data Management System (DMS) Hotline at (703) 908-2155 before you generate the second transfer diskette.

4. Select the Data Transfer button from the Data Transfer Menu to open the Data Transfer window. The application will first check your data to determine whether they meet the minimum requirements for completeness. For a list of completeness checks, see the sidebar on page 134 or the ICR Help topic "Know My Monthly Sampling Results are Complete."

5. If your data are incomplete, the application will print out a data transfer completeness check report for the appropriate reporting event. Using the report, go back in to your data, complete the missing information, and repeat Steps 1, 2, and 4 of the data transfer process.

WARNING: The Data Transfer Completeness Checks do not ensure that you have entered all the data necessary for the utility to comply with ICR requirements. For example, if you neglect to identify a required sample, the checks will not catch the error. They will, however, help you identify some gaps in your data.

6. Once your data has passed the transfer checks, the Initial Sampling Plan Data Transfer window will open. Insert the first blank diskette in a floppy drive, select the letter of the drive, and click OK to begin data transfer.
Appendix C: Release 1.1

Release 1.1 of the ICR Water Utility Database System is an update to Release 1.0 of the application. It is not a standalone database application. Release 1.1 includes modifications to Minimum Reporting Levels (MRL) for optional haloacetic acids, additions to the list of the ICR-approved analytical methods for some water quality parameters, and corrections to the reports and on-line Help text.

Note: Any information you entered into the database using Release 1.0 will not be affected by Release 1.1. You will not need to re-enter any data after you install the update.

You must use Release 1.1 of the application to report data to EPA. To install the release:

1. Install Release 1.0 of the Water Utility Database System according to the instructions on page 12 of the Users’ Guide.

Warning: If you have already installed Release 1.0 on your computer, do not do so again. If you reinstall Release 1.0 and do not have a current backup, you will lose all the data you have entered into the application.

2. Insert the diskette labeled “ICR Water Utility Database System Release 1.1 Disk 1” into a floppy disk drive on your PC.

3. Choose Run from the File menu in Program Manager.

4. Type a:setup in the Run dialog box. (Type b:setup if your diskette is in the B:\ drive.)

5. Press Enter or choose OK on the dialog box with your mouse.

6. Follow the setup instructions that appear on the screen.

The setup instructions will give you the option of installing the application in any directory on your computer. You must install Release 1.1 in the same subdirectory in which you installed Release 1.0.

If you have installed multiple copies of Release 1.0 on your computer, you must repeat this process for each copy of the original application.

Once you have installed Release 1.1, please insert the installation instructions and diskettes in the back of the ICR Water Utility Database System Users’ Guide.
INDEX

Symbols

<DL Indicator 119  
<MRL Indicator 116

A

Add, Definition of 17
Adding a Unit Process 59
   Creating a Unit Process 59
   Inserting the Unit Process in the Process Train 60
Additional Water Source 53
Additional Water Source Sampling Point 53
Adsorption Clarifier 55
Air Stripping 55
Analysis Date 113
Analyte 41, 73
   Optional 117
Analyte Group 73
Analytical Method 113
AOC Quality Control 117
Application Basics 15–18
Archiving Data 139
Average Detention Time 68
AWWA Services 8–9

B

Back Up Data 151
Background for the ICR DMS 5
BDOC Quality Control 119
Before You Begin 2
Blending 66–67
   Blending Treatment Plants 66–67
   Sample Locations 63
   Sampling Requirements 65, 69–70
Button 17–18
   Check Box 17
   Push 17
   Radio 17

C

Cancel, Definition of 17
Clearwell 55
Coagulation/Sedimentation/Softening 45
Complex Parallel Train Softening 45
Confidence Interval
   Lower 95% 123
   Upper 95% 123
Confidence Level, in Distribution System 70
Contact Time from Effluent 64, 70
Conventional Filtration 44

Copy Data 86–87
   Copy Official Contact 38
   Initial to Final Design 135–136
   List of Samples 77
   Monthly Sampling 86

D

Data
   Analysis 154
   Backup 151
   Collection Process 25
   Copy 86
   Design 24, 83
   Flows 23–34
   Operational 83
      Collecting 93
   Restore 152
Data Completeness Check 149
   Final Design 139
   Initial Sampling Plan 82
   Monthly Sampling Results 134
Data Entry 15
Data Entry Window 15
Data Entry Worksheets 3, 173–212
Data Review Letter 24
Data Transfer
   Generating 80, 132, 138
   Initial Sampling Plan 79
   Monthly Sampling Results 132
Defaults
   Laboratory ICR Identification Number 76
   Method 113
   Process Train 51
   Result QA Code 110
   Sample Analysis Date 113
   Sample Analytical Result 113
   Sampling Period 86
Delete, Definition of 17
Dialog Box 15
Diatomaceous Earth Filter 55
Dilution Factor 125
Direct Filtration 44
Disinfectant Addition 55, 59
Disinfectants 54
Disinfection Contact Basin 55
Disinfection of Purchased Finished Water 45
Disinfection Only/Groundwater 45
Dissolved Air Flotation 55
ICR Samples 71
  Defining a Sample 74
  Defining and Copying a List of Samples 76
  Sample Identification Numbers 71
  Sample Location Numbers 72–74
Overview 41–42
Reports 78, 142–143
Review 78
Sampling Plan Dates 42
Sending to EPA 79
Treatment Plant
  Basic Information 46
  Hypochlorite Stock 62
  Influent 48–49
  Intakes 46–48
  Process Train 49–53
  Unit Processes 53–61
  Water Resources 46
Wholesale Information 71
  Adding a Customer 71
  Changing Customer Information 71
  Deleting a Customer 71
Installation 11–14
  Installing the Application on a Standalone PC 12
    On a Local Area Network 12
    With Backup 13
    Without Backup 13
  Installed Sludge Handling Capacity 46
  Intake 46, 95
  Ion Exchange 57
K
  Keyboard Shortcuts 21
L
Laboratory
  Identification 38
    Laboratory ICR Identification Number 38
  Laboratory Approval 39
  Laboratory ICR Identification Number 112
List Box 16
M
  Main Menu 18–19, 37
  Maximum Detention Time 68
  Measurement Formula 54
  Membrane 57
    Membrane Treatment 45
Menu Window 15
Method 113
Monthly Reporting Package 107
Monthly Sample Tracking Checklist 93
Monthly Sampling 30, 77, 83–104
Copying Data 86
Develop Monthly Sampling Plan 83–93
Distribution System 98
Distribution System Entry Point/SDS Sample Location 98
Entering Operating Information 93–99
Generating Data Collection Forms 91
Manual vs. Electronic Planning 87
Overview 83
Plan 83–91
  Modifying Samples 88
  Modifying Unit Processes 88
  Modifying Water Resources and Intakes 88
  Reviewing 90
Population and Flow Rate 93–94
Samples 93
Selecting a Sampling Period 84–85
Summary 92
Treatment Plant 94–98
  Basic Plant Information 95
  Finished Water 98
  Hypochlorite Stock 98
  Influent 96
  Intakes 96
  Process Train 96–97
  Unit Process 97–98
  Water Resource and Intake Inform 95
Verification 103
Wholesale Information 99
Monthly Sampling Results 32, 107–134
Completing 127
Data Transfer Completeness Checks 134
Deleting 126
Entering 108
  AOC/BDOC 117
  Chlorine Demand 114
  Clostridium Analyses 124
  Coliform 122
  Coliphage 124
  DBP, TOC, UV, Br, TOX 115
  Disinfectant Residuals 114
  General Water Quality 111
  Hypochlorite Stock 126
  Microbiological 120–125
  Particle Count 125
  Protozoan 120
  Virus 123
Overview 107–108
Reports 130–131, 146–147
Generating 131
Review 127
Sending to EPA 131–132

217

Release 1.1 September 1996
Index

N
Near First Customer 68
Notice of Applicability 2, 5, 23, 26
Notice of Final ICR Applicability Determination 2, 26

O
Official Contact 37
OK 18
Open List Box 20
Operating Information, Entering 93–99
Optional Treatment Plant PWS ID 46
Other Category of Treatment Plant 45
Other Groundwater 45
Other Treatment Process 57
Ozone Chamber 56, 57
Ozone Contactors 56, 57

P
Particle Counter 102
Particle Size Count 102
Pick List 16
Population 93
Retail 93
Wholesale 93
Preliminary Activities 26
Presedimentation 57
Previous 18
Process Train 49–50, 96
Adding 50
Category 51
Default 52
Deleting 61
Split and Parallel Process Trains 49
Summary 50
Public Water System Identification Number 37

Q
Qualitative Result Code 121
Quality Assurance (QA) Code
Result 107, 109, 110
Sample 101, 107, 109
Quality Assurance (QA) Comment
Result 107, 110
Sample 101, 107, 109
Quarterly Sampling 77

R
Rapid Mix 57
Read Me File 14
Recarbonation Basin 58
Recording Data for Multiple Public Water Systems 12

References 10
Repairing and Compacting 14
Reports 141–150
  Data Collection (Monthly) 91, 145
  Chemical Data Collection Form 91, 145
  Process Data Collection Form 91, 145
  Sample Data Collection Form 91, 145
Data Transfer 80–81, 149
  Data Transfer History Report 150
  Final Design Data Transfer Completeness 149
  Final Design Summary Report 150
  Initial Sampling Plan Data Transfer Completeness 149
  Initial Sampling Plan Summary Report 150
  Monthly Sampling Results Data Transfer Completeness 149
  Monthly Sampling Results Summary Report 150
Final Design 147
  Design Distribution System Information 137, 147
  Final Design Plant Chemical Parameters 137, 147
  Final Design Plant Parameters 137, 147
Generating 78, 131, 137, 148
Initial Sampling Plan 78, 142
  Data Completeness Check 82
  Design Distribution System Information 78, 142
  Design Plant Chemical Parameters 78, 142
  Design Plant Parameters 78, 142
  Design Water System Information 78, 143
  Initial Sampling Plan by Location 78, 142
Laboratory Shipping (Monthly) 146
  Sample Allocation to Laboratories 146
  Sample Tracking Checklist 146
Monthly Distribution System Information 144
  Monthly Sample Data Verification Report 146
Monthly Sampling 143, 146
  Monthly Distribution System Information 90
  Monthly Plant Chemical Parameters 90, 144
  Monthly Plant Parameters 90, 144
  Monthly Sample Tracking Checklist 93
  Monthly Sampling Matrix Plan 91, 145
  Monthly Sampling Plan by Location 90, 143
  Monthly Water System Information 90, 145
  Sample Allocation to Laboratories 93
Monthly Sampling Results 127–131, 146
  Monthly Analyte Results by Laboratory 130, 146
  Monthly Verification of Sampling Data 146

218 Release 1.1 September 1996
Overview 141
Through Plant Analysis (Monthly) 130, 147
  Disinfectant Residuals 130, 147
  Disinfection By-Products 130, 147
  General Water Quality Parameters 130, 147
  Hypochlorite Stock 131, 147
  Microbials 131, 147
  Precursors 131, 147
Restore Data 152
Result 113
Result QA Code 107, 109, 110
Result QA Comment 107, 109, 110

S
Sample 71–77, 93
  Chlorine Residual 103
  Collecting 93
  Collection Data 100
    Required 104–105
  Defining a Sample 74–76
  Defining and Copying a List of Samples 76–77
  Deleting 126
  Identification Number 72
  List
    Add 76
    Copy 77
    Monthly 77
    Monthly Versus Quarterly Sampling 77
    Particle Size Count 102–103
    Quality Assurance (QA) Code 101, 107, 109
    Quality Assurance (QA) Comment
      101, 107, 109
    Quarterly 77
    Recording 99
  Water Quality Parameter 103
Sample Analytical Result 107–134
  <DL Indicator 119
  <MRL Indicator 116
  AOC/BDOC Analyses 117
  Chlorine Demand Analyses 114
  Clostridium Analyses 124
  Coliform Analyses 122
  Coliphage Analyses 124
  Completing 127
  DBP, TOC, UV, Br, TOX Analyses 115
  Dilution Factor 125
  Disinfectant Residuals Analyses 114
  Entering a 111
  General Water Quality Analyses 111
  Hypochlorite Analyses 126
  Information by Analyte Group 128–130
  Microbiological Analyses 120–125
  Particle Count Analyses 125
  Protozoan Analyses 120
  Qualitative Result Code 121
  Quality Assurance (QA) Code
    107, 109, 110, 113
    Blank 116
  Quality Assurance (QA) Comment
    107, 109, 110, 113
    Blank 116
  Reviewing 127
  Virus Analyses 123
Sample Collection Data 99–103
Sample Collection Information 99–103
Sample Collection List 20, 101, 109
Sample ID Selection List 111, 115
Sample Identification Number 71, 72
Sample Location 72–74
  Average Detention Time 68
  Distribution System 63, 72
    Add 69
    Distribution System Entry Point 63, 72
    Sampling Requirements 65
    Distribution System Entry Point/SDS
      Add 64–69
      Delete 68
    Distribution System Entry Point/SDS Sample
      Location 64–68
    Distribution System Equivalent 68
    Finished Water 63
    Maximum Detention Time 68
    Near First Customer 68
    Plant Influent 72
    Simulated Distribution System 63
    Unit Process 72
  Sample Location Number 72–74
  Sampling Month 84
  Sampling Period 84
    Sampling Period Dates 84
  Sampling Plan Dates 42
  Scroll Bar, Definition of 16
  Sedimentation 58
  Selection List Window 15
  Simulated Distribution System 64, 98, 136
  Slow Sand Filtration 44, 58
  Softening 44
  Solids Contact Clarifier 58
  Split Treatment/Softening 45
  State Approved Plant Capacity 46
System Administration 151–154
  Backing Up Data 151–152
  Data Analysis 154
  EPA Utility Identifier 153–154
  ICR Tips 153
  Overview 151
  Restoring Data 152–153

219  Release 1.1 September 1996
Index

T
Title Bar 15
Treatment Plant 42, 42-48, 94-95, 136
  Basic Plant Information 95
  Blending 66-67
Category 44
  Coagulation/Sedimentation/Softening 45
  Complex Parallel Train Softening 45
  Convensional Filtration 44
  Direct Filtration 46
  Disinfection of Purchased Finished Water 45
  Disinfection Only/Groundwater 45
  In-Line Filtration 44
  Membrane Treatment 65
  Other 45
  Other Groundwater 45
  Slow Sand Filtration 44
  Softening 44
  Split Treatment/Softening 45
Two Stage Softening 45
Unfiltered Surface Water 45
Delete 46
Edit 46
ICN Treatment Plant ID Number 43
Treatment Plant Name 43
Two Stage Softening 45

U
Unfiltered Surface Water 45
Unit Process 53-56, 97-98
  Add 59-61
  Additional Water Source 53
  Additional Water Source Sampling Point 53
  Adsorption Clarifier 55
  Air Stripping 55
  Clearwell 55
  Diatomaceous Earth Filter 55
  Disinfectant Addition 55
  Disinfection Contact Basin 55
  Dissolved Air Flotation 55
  Edit 60
  Filtration 57
  Flocculation Basin 56, 57
  Granular Activated Carbon 57
  Ion Exchange 57
  Membrane 57
  Move 60
  Other Treatment Process 57
  Ozone Chamber 57
  Ozone Contactor 56, 57
  Preliminary Sedimentation 57
  Rapid Mix 57
  Recarbonation Basin 58
Remove 60
Sedimentation 58
Slow Sand Filtration 58
Solids Contact Clarifier 58
Update 97
Washwater Return 53, 58
Washwater Return Sampling Point 53, 58
Unit Process Complete 52

W
Washwater Return 53, 58
Washwater Return Sampling Point 53, 58
Water Resource 46-48, 95
  Ground Water Resource 47
  Purchased Water Resource 47
  Surface Water Resource 47
Water System Identification 37
Wholesale Information 71, 99, 137
  Adding a Customer 71
  Changing Customer Information 71
  Deleting a Customer 71
Window, Definition of 15
Window Hierarchy 19