PrecisionView AMR 2.0

Advanced Material Reporting

User Guide

309218
Rev. B

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SECTION

1

Introduction

Installation and Setup Overview

The following steps are an overview of the process of installing and configuring the PrecisionView application. Each step is explained in more detail in the procedures on the following pages. Hardware and software installation procedures are in the *PrecisionView AMR 2.0 Installation Guide*

<table>
<tr><th colspan="3">Steps</th></tr>
<tr><td colspan="3">1. Select Units of Measure (page 34) and configure the fluids in the following order:
a. Hazardous Air Pollutants (HAP) Table (page 35)
b. Master Fluid List (page 36)
c. PrecisionMix Recipes Table (page 41)</td></tr>
<tr><td colspan="3">2. Configure PrecisionView network, folders and stations in Network Overview (page 46).
a. Configure Serial and/or TCP/IP Networks (page 50).
b. Add Stations (page 56) and configure general properties.
c. Group related Stations in Folders (page 55) if desired.</td></tr>
<tr><td colspan="3">3. Configure PrecisionMix and ProBatch Stations.</td></tr>
<tr><td></td><td>PrecisionMix (page 66)</td><td>ProBatch (page 68)</td></tr>
<tr><td></td><td>• Link recipes from Recipe List with PrecisionMix station recipe numbers (page 66).
• Synchronize Clocks (page 104).</td><td>• Select Station System Parameters (page 74).
• Configure fluids (page 76).
• Configure recipes (page 78).
• Synchronize configuration of ProBatch station and PrecisionView application. (page 68)
• Synchronize Clocks (page 104).</td></tr>
<tr><td colspan="3">4. Lock material and recipe configuration (page 44).</td></tr>
<tr><td colspan="3">5. Backup PrecisionView software configuration (page 21).</td></tr>
</table>

Conventions Used in this Manual

Warnings, Cautions, and Notes

The warning symbol alerts you to the possibility of serious injury or death if you do not follow the instructions.

The caution symbol alerts you to the possibility of equipment or property damage or operation errors if you do not follow the instructions.

The pencil symbol is used to call your attention to additional important or helpful information.

References

Numbers and letters in parentheses in the text, such as (A) or (7), refer to reference numbers and letters in the figures.

Wherever the PrecisionMix® name is mentioned, the information pertains to both the PrecisionMix II 2-K station and the PrecisionMix II 3-K station, unless otherwise specified.

“Station” refers to both:

- physical devices (such as an Informer station) connected to the PrecisionView application
- stations you create and configure with the application in the Network Overview.

Menu Selections

To complete a task using a menu command or submenu, the ➤ symbol is used to show selections. For example, “Select Edit ➤ Master Fluid List.”

For More Information

Technical Support

In the main PrecisionView application window, click Help About ➤ PrecisionView AMR, then click the Technical Support button. If the Technical Support information has been filled in, the distributor support information should display.

If you need help identifying the Graco authorized distributor closest to you, call: **1-800-367-4023 Toll Free**

If no data is entered into Technical Support information, the dialog box will display each time the application is launched until at least one field of information is entered.

Training Programs

For information on available training courses, contact your distributor.

Instruction Manuals

Depending on which devices are part of your network, you may need to refer to the following manuals for additional information.

Manual No.	Description
309102	Informer Package Manual
308916	PrecisionMix II 2-K System Manual
309107	PrecisionMix II 3-K System Manual
309300	ProBatch System Manual
196938	PrecisionView AMR 2.0 Installation Guide
309366	Interface Box Manual

To order additional PrecisionView AMR 2.0 User Guides (this manual), order part number 196936

Online Documentation

This instruction manual and the *PrecisionView AMR 2.0 Installation Guide* are included on the PrecisionView AMR 2.0 CD in the “Manuals” directory (pdf files). You need Acrobat™ Reader to view the manuals. Install Acrobat Reader from the PrecisionView AMR 2.0 CD if it is not already installed on your computer.

The blue text in the online manuals is “hot text”. Clicking on the text will take you to the information referred to. Use the “Go to Previous View” button ➤➤ in Acrobat Reader to return to the previous page in the manual.

PrecisionView Software Licensing

License Levels

The software is licensed through a hardware license key that plugs into your computer parallel port. One group of licenses (simple) is for use with Informer stations only. The other group of licenses (complex) is for use with any Graco PrecisionView compatible equipment.

The following PrecisionView software licenses are available:

Part No.	Type of station(s)	Number of stations
244107	**Simple:** Informer only	Single station
244108		Five stations
244109		Network - up to 31 stations
243377	**Complex:** Informer, PrecisionMix II, PrecisionMix II 3K or ProBatch	Single station
243378		Five stations
243379		Network - up to 31 stations

The license level of the hardware key overrides any settings made with the PrecisionView application. To display the license information:

1. Select Help ➤ About PrecisionView AMR 2.0 from the menu.

2. Click the License Information button in the dialog box. License Information shows the number of enabled stations by category and the license type. These values are read-only.

3. Click OK to close the dialog box.

Demo Mode

When no hardware key is present, the application will function in demonstration mode. During the first two hours of demo mode, you are able to commuicate with a single station and test out the functionality of the application.

After the two hour period, the communication between the station and PrecisionView application is terminated. You can still configure the application, regardless of the license status. This allows you to set up the application as desired even if you do not initially have a valid license. When you obtain a valid license key, the application begins functioning with the established configuration.

PrecisionView AMR 2.0 Application

The PrecisionView application provides process monitoring and advanced reporting capabilities for Graco PrecisionView AMR 2.0 compatible proportioning and fluid measurement equipment.

Monitoring capabilities include:

- Remote viewing of the active processes on all networked stations
- Graphical displays of ratio performance, flow performance, and month-to-date volatile organic compound (VOC) emissions
- Text displays of all production information

PrecisionView AMR reporting capabilities include:

- Automatic data collection into Microsoft® Access 2000 database
- Pre-defined reporting of production information, batch and grand totalizer information, complete alarm and event history, volatile organic compound (VOC) emissions, hazardous air pollutant (HAP) usage, and PrecisionView setup information
- Manual and automatic report generation
- Open database connectivity compliance (ODBC)

What's New in PrecisionView AMR 2.0

Multiple device support: added support for Informer, ProBatch, and PrecisionMix II 3-K station types.

Cross-device reporting capabilities: custom material report is available to generate a detailed or summarized history of fluids dispensed.

Multiple network support: either serial or TCP/IP networks can be used to connect devices to the PrecisionView application.

Master Fluid List: the Components List in PrecisionView AMR 1.0 is replaced by the Master Fluid List in version 2.0. The main difference is that the Master Fluid List is not divided into different component types, such as components A and B. This means that a fluid can be assigned to any part of a recipe or station configuration.

PrecisionMix stations:

- VOC factor can no longer be configured by Recipe volume. VOCs are calculated by the VOC conversion factor of individual fluid components. There is no "Recipe Step" dialog box for individual Recipe steps.
- Batch totalizers can be reset for all recipes on a station. Previously, batch totalizers could only be reset for the currently active recipe.
- VOCs can be calculated based on batch totalizers (totalizer snapshot report).

Important Notes for PrecisionMix II Stations

The following information is important in understanding how PrecisionView AMR 2.0 logs PrecisionMix jobs to its database and how this affects your data, views and reports.

If a job ends while PrecisionView AMR is not running or otherwise not communicating to the PrecisionMix II station, the job is not logged to the AMR 2.0 database. The PrecisionMix II station does not log the job either, so that job information is lost. Volatile Organic Compound (VOC) and Hazardous Air Pollutant (HAP) calculations depend on the completeness and accuracy of the logged jobs.

In order to accurately track jobs and log them to the database, a computer should be dedicated to the PrecisionView application and be running and online with all stations at all times. It is recommended that you plug the computer's power cord into a UPS and configure it to gracefully shut down in case of a power outage.

Other principles to remember about PrecisionMix jobs:

- A job is specific to a recipe; if you change recipes, you change jobs.
- A job will not appear in the production detail and summary reports until after the job has ended (i.e. after it has been logged to the database).
- A job on the PrecisionMix station ends (automatically starting a new one) when any one of the following four things happen:

    1. PrecisionMix operator zeros the job totalizers on the local PrecisionMix user interface.
    2. PrecisionMix operator presses the Print button on the PrecisionMix operator station. This works only for the active recipe.

3. PrecisionView AMR operator selects the PrecisionMix station in the Network Overview and clears the job totals. This works only for the active recipe on the currently selected station.

4. PrecisionMix station has the color change option and is configured to automatically end the job when a color change is initiated. To set this configuration, see the Printer Reports section of your PrecisionMix II instruction manual.

Known Issues

1. PrecisionView AMR does not track solvent usage due to a system purge while the PrecisionMix is in recipe zero. It will track the solvent usage due to a color change from a recipe to recipe zero. This is due to the nature of the PrecisionMix II control software, not to PrecisionView AMR, and must be taken into account when tracking solvent usage.

2. On networks with many stations (ten or more), there is a potential to miss alarms that occur on the PrecisionMix stations. Specifically, this happens when an alarm occurs and the PrecisionMix operator quickly clears the alarm. PrecisionView AMR will log only new, active alarms; it does this by repeatedly polling each station on the network for new station information. Due to the large volume of network traffic, the time between polls to a given station becomes relatively long. If the alarm occurs and is cleared between polls to the station, the alarm is missed and not added to the Alarm and Event Log. The probability of PrecisionView AMR not recording a PrecisionMix alarm increases proportionately with the number of stations. Similarly, the fewer stations on the network, the faster the network communication will be.

Updating the Software

Contact your Graco distributor to obtain future updates to the PrecisionView AMR 2.0 software.

Removing the Software

Removing the application does not remove any data files you may have created. However, it is recommended that you backup the application configuration before removing it. See ***Backup PrecisionView Configuration****, page 21.*

To remove the PrecisionView application from your computer:

1. Select Settings ➤ Control Panel from the Windows Start menu.
2. Double-click Add/Remove Programs.
3. Select PrecisionView AMR 2.0 from the list of programs and click Add/Remove. The program is removed from your PC and no longer appears on the Windows Start menu.

Backup PrecisionView Configuration

When you are finished configuring the PrecisionView application, it should be backed up. A backup should also be done before removing a station, uninstalling the software, and periodically as part of your system maintenance.

1. Start Windows Explorer.

2. Move to the directory where PrecisionView software is installed. The default path is C:\Program Files\Graco\PrecisionView AMR 2.

3. Select the PViewAMR2.mdb file (type Microsoft Access Database). You may have to select the file and check the properties to see the full name of the file with the mdb extension.

4. Copy the file to a backup device, such as a tape drive or ZIP drive.

SECTION
2

Software Overview

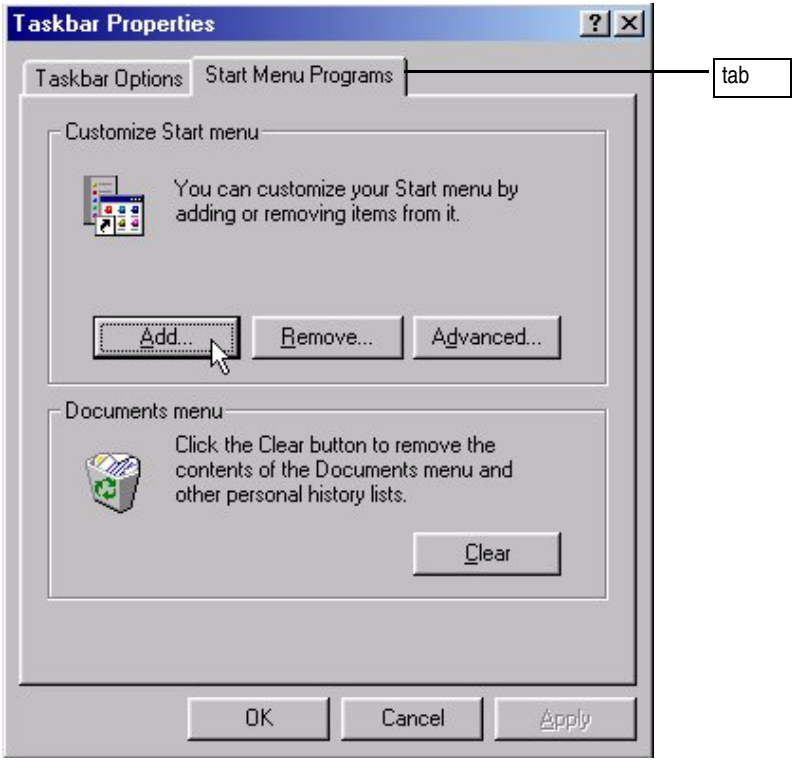
Starting PrecisionView AMR 2.0

To start PrecisionView AMR 2.0, double-click the PrecisionView AMR 2.0 icon that was placed on your desktop during the software installation. You can also click the Start button on the Windows taskbar and select Programs ➤ Graco ➤ PrecisionView AMR 2.0. The PrecisionView AMR main window opens.

To start AMR automatically whenever you log into the computer, follow this procedure to add AMR to the Start Menu Startup Folder.

1. Right-click on the Windows taskbar and select Properties or left-click on the Windows taskbar and select Settings ➤ Taskbar & Start Menu.

2. Select the Start Menu Programs tab, then click the Add button.



3. The Create Shortcut dialog box appears. Press the Browse button and go to the location of the PrecisionView application. The default location is C:\Program Files\Graco\PrecisionView AMR 2.

4. Select AMR Client.exe and click Open.

5. In the Create Shortcut dialog box, click Next.

6. The Select Program Folder dialog box appears showing a list of the current program folders in the Start menu. Scroll to and select Start Menu ➤ Programs ➤ StartUp, then click the Next button.

7. Type a shortcut name, such as “PrecisionView AMR 2”, in the text box and click the Finish button.

8. Click OK in the Taskbar Properties dialog box.

9. Click OK in the Taskbar Properties dialog box.

The PrecisionView AMR 2.0 application will only collect production data while the application is running on the PC. Closing the application will stop communication between PC and the networked stations.

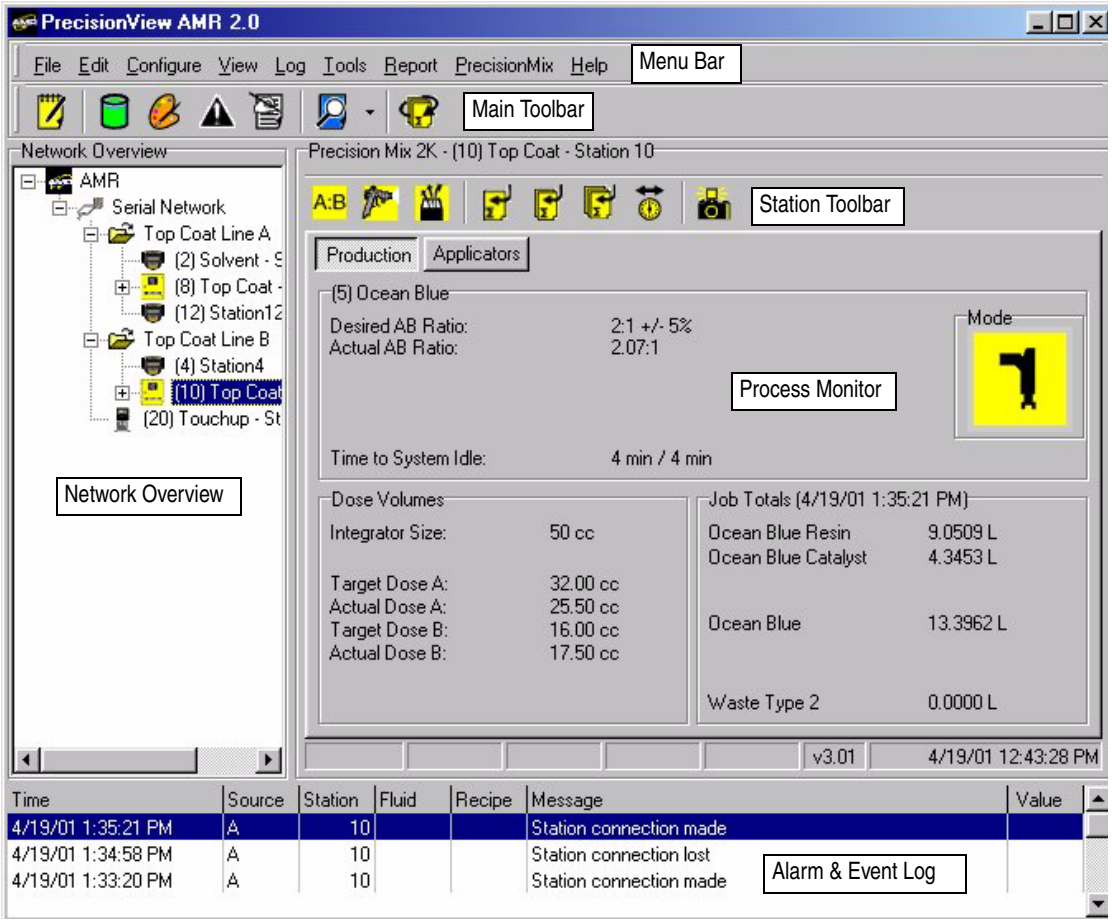
Technical Support Information

When the application starts, it displays the Technical Support dialog box. Enter the Graco distributor contact information into the form for future reference, then click OK. Technical support personnel may ask for this information when providing technical assistance. The information can be retrieved by selecting Help ➤ About PrecisionView AMR and clicking the Technical Support button.

If you need help identifying the distributor closest to you, call:
1-800-367-4023 Toll Free.

If no data is entered into the Technical Support information form, it will display each time the application is launched until at least one field of information is entered.

Main Application Window



The main PrecisionView application window consists of three main panes, Network Overview; Process Monitor; and Alarm and Event Log, which are explained in detail in other sections of this guide.

The menu bar, main toolbar, and station toolbar are explained in the following pages.

Menu Bar and Toolbars

Whenever you pause the mouse pointer over a button, a description of the button appears.

The menus and toolbar buttons that are available depend on which object is selected in the Network Overview. Menus and buttons that appear dimmed are unavailable for use.

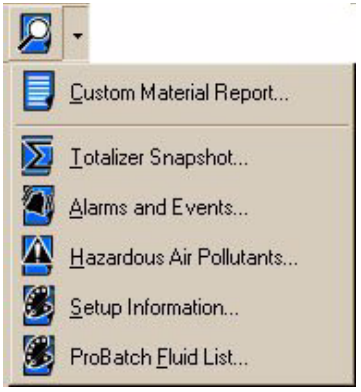
Menu Bar

The commands on the menu bar are explained in the procedures throughout this manual. The menu bar that appears if a PrecisionMix station is selected is shown above.

Main and Station Toolbars

The toolbar buttons can be used to quickly access configuration screens, graphs, or to carry out commands.

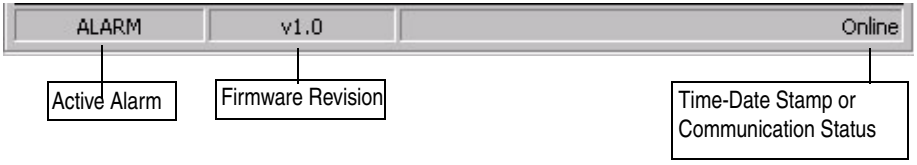
Button	Action
	Enter a message into the Alarm and Entry Log.
	Configure the Master Fluid List.
	Configure the PrecisionMix recipes
	Configure the Hazardous Air Pollutants (HAP) table.
	Configure the properties of the selected object.

Button	Action
	Preview an existing report. The menu is context sensitive. The example below is the menu if a ProBatch station is selected in Network Overview. 
	Reset batch and/or maintenance totalizers for one or more online Informer stations.
	Station Dependent Actions
	**PrecisionMix station —** Show or hide A:B Ratio graph
	**PrecisionMix station —** Show or hide C:B Ratio graph
	**PrecisionMix or Informer stations —** Show or hide Flow graph.
	**All stations —** Show or hide month-to-date VOC graph.
	**PrecisionMix station —** Reset job. **ProBatch station —** Reset totals.
	**PrecisionMix station —** Reset batch.
	**PrecisionMix station —** Reset batch for all recipes.

Button	Action
	**Informer station —** Reset batch.
	**Informer station —** Reset maintenance.
	**PrecisionMix and ProBatch stations —**Synchronize clocks.
	**All stations —** Totalizer snapshot, populates database with a snapshot of selected station.

Status Bar

The status bar is at the bottom of the Process Monitor. The appearance of the status bar varies, depending on which type of station is selected.



When a station is selected in the Network Overview, the PrecisionView application displays:

- Firmware revision number
- ALARM if there is an active alarm
- Communication status or Time-Date Stamp

  Communication Status
  Disabled — Communication has been disabled for this station.
  Offline — Communications is enabled but PrecisionView application is not connected to the station yet.
  Online — PrecisionView application is connected to the station.
  Unlicensed — Current hardware key does not permit communications to this station.
  Wrong Type — Physical device with the same station number as this station is the wrong type of device. For example, device number 5 is a ProBatch station but an Informer station with station number 5 is being added to the Network Overview.

- Station Status — PrecisionMix station only
  Alarm — The station has an active alarm.
  Purge — The station is purging.
  Idle — The station is in idle mode.
  Change — A color change is in process.
  Dump — Auto-dump is on.

General Application Features

- Right clicking in any of the main screen areas and in the process graphs will bring up Context Sensitive Submenus.
- The main application window panes and some of the application dialog box areas can be resized vertically and horizontally.
- Inactive buttons and menu commands are dimmed.
- **PrecisionMix stations only —** Enter Password dialog box appears when an activity changes or impacts a secure station function. Each station may have a unique password, which cannot be changed with the PrecisionView application.

SECTION
3

Configuring Fluids

Units of Measure

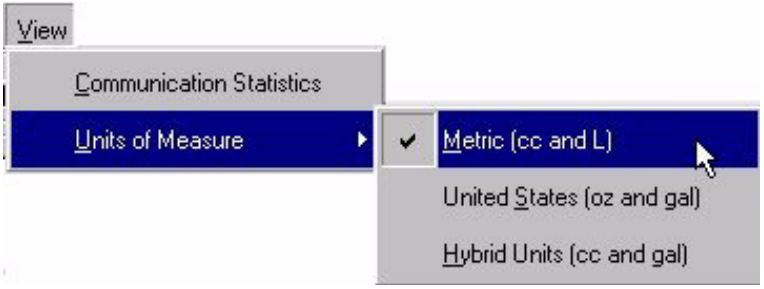
Before creating the Master Fluid List, select the units of measure.

Volumetric units, both for display and reporting, can be set for Metric (cc and L), United States (oz. and gal.) or Hybrid Units (cc and gal.). You can change the units at any time and both the displays and the reports will automatically change accordingly.

Changing volumetric units will cause VOC conversion factors to recalculate for the new units. For example: if the VOC conversion factor is 0.2 lbs/gal, and units of measure are changed to liters, the VOC conversion factor will read 0.76 lbs/liter.

To change the units of measure:

1. Click View ➤ Units of Measure.



2. Click the desired unit of measurement.

Hazardous Air Pollutants (HAP) Table

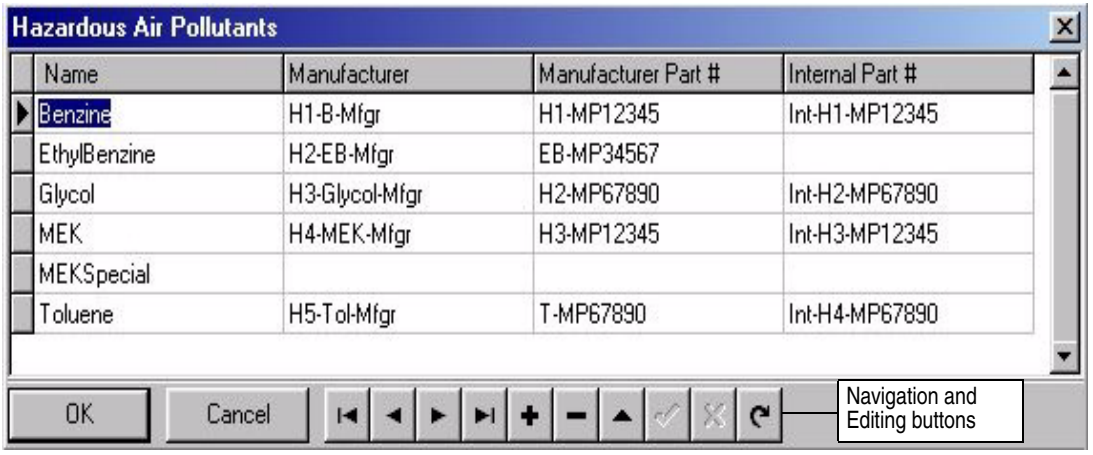
The PrecisionView application can track HAP usage and report the information. First, you need to create a list of hazardous air pollutants that are present in your coatings. This information is usually on the fluid's MSDS. This information is used later to configure HAP Constituents (**Configuring HAP Constituents**, page 40).

To configure the HAP Table:

HAP button

1. Click Edit ➤ Hazardous Air Pollutants from the menu bar or click the HAP Table button.

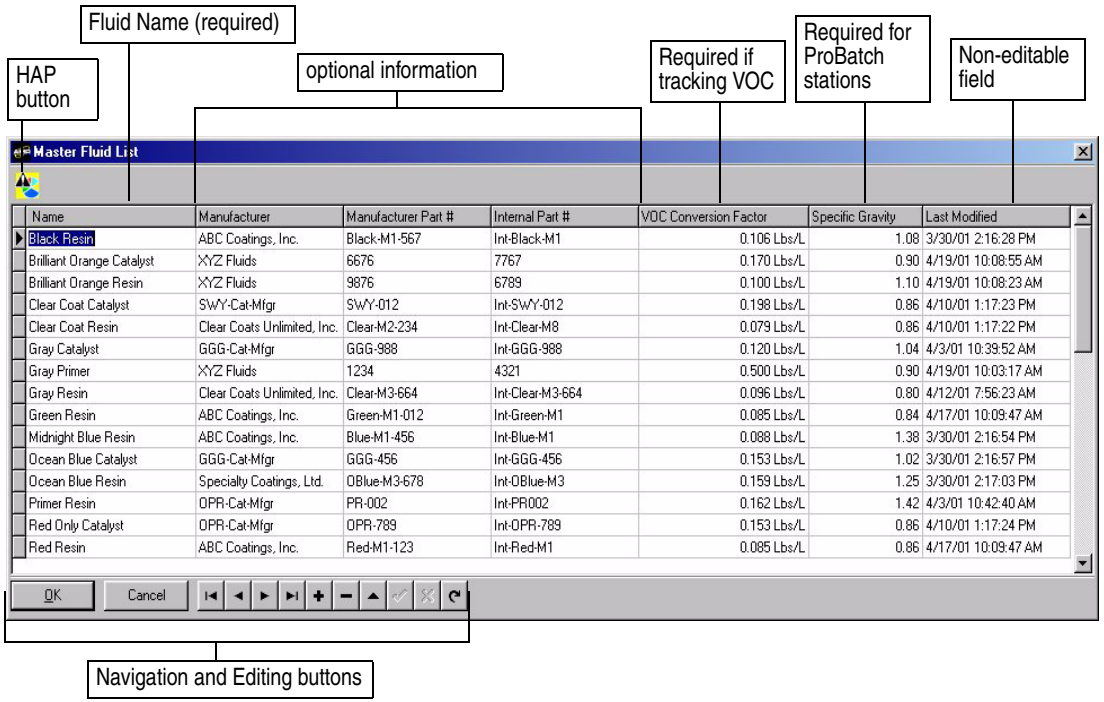
2. Enter HAP information in the table. Use navigation and editing buttons in the table to enter or modify data.



Master Fluid List

The Master Fluid List is a table where you enter information about every fluid that stations in the system can dispense. Once entered, this information is used to:

- Configure the individual stations
- Make materials easy to identify in reports and software displays
- Track Volatile Organic Compounds (VOC)



Editing Master Fluid List

Master Fluid List button

1. Click Configure ➤ Master Fluid List or click on the Master Fluid List button.

2. Enter fluid information in the table. Use the navigation and editing buttons in the table to enter or modify data.

   Name: unique fluid name, required for all stations

   Manufacturer: fluid manufacturer name

   Manufacturer Part #: manufacturer's fluid part number

   Internal Part #: internal fluid part number

   VOC Conversion Factor: factor used by PrecisionView application to calculate how much volatile organic compound is contained in a volume of fluid, see **VOC Calculation**, page 38, for more information

   Specific Gravity: required for ProBatch stations, factor from 0.1-9.98 used to convert volume to mass

   Last Modified: PrecisionView application records last time fluid was modified, this field cannot be modified by the user

Navigation and Editing Buttons

Button	Action	Button	Action
	Go to first entry		Edit an entry
	Go to previous entry		Apply the edit
	Go to next entry		Cancel the edit
	Go to last entry		Refresh the data
	Add an entry		Save changes and close the dialog box
	Delete an entry		Cancel changes and close the dialog box

VOC Calculation

Environmental Regulatory Agencies often require plants to report total annual VOC emissions, resulting from the application of materials. Annual VOC emissions are usually reported in tons or kilograms.

Volumetric VOC conversion factors are usually specified on either the Material Safety Data Sheet or the Mixed Material Specification Data Sheet. When entering VOC conversion factors for fluids in the Master Fluid List, it is critical to know which volumetric units of measure have been selected. If you switch between liters and gallons, the conversion factors will also recalculate. Therefore, if you select Metric Display Units, you must enter in a VOC conversion factor in VOC units per liter. If you select English or Hybrid Units, you must enter in a VOC Conversion Factor in VOC units per gallon.

Volumetric units of measure are selected from the View menu. See ***Units of Measure****, page 34. The units of measure for the VOC conversion factor are selected in the System Properties dialog box. See* ***Configuring System Properties****, page 48.*

VOC emissions are usually monitored on a monthly basis. A Monthly Target Maximum VOC value can be set for each station in the Station Properties dialog box. A log message will appear when the monthly target value is exceeded.

The Actual VOC value for each station, which appears in a VOC graph, is updated any time a job or recipe is completed. The calculated value is based on completed jobs or batches logged in the database, plus the current job fluid usage.

The Actual VOC value cannot be manually reset. The PrecisionView application automatically resets the value to zero on the last day of the month, at the end of the day.

To calculate and track VOC emissions, the PrecisionView application uses a formula based on the sum of the fluid VOC totals.

For example, if a ProBatch dispense consists of Fluid 1 and Fluid 2, the VOC emissions calculation would be:

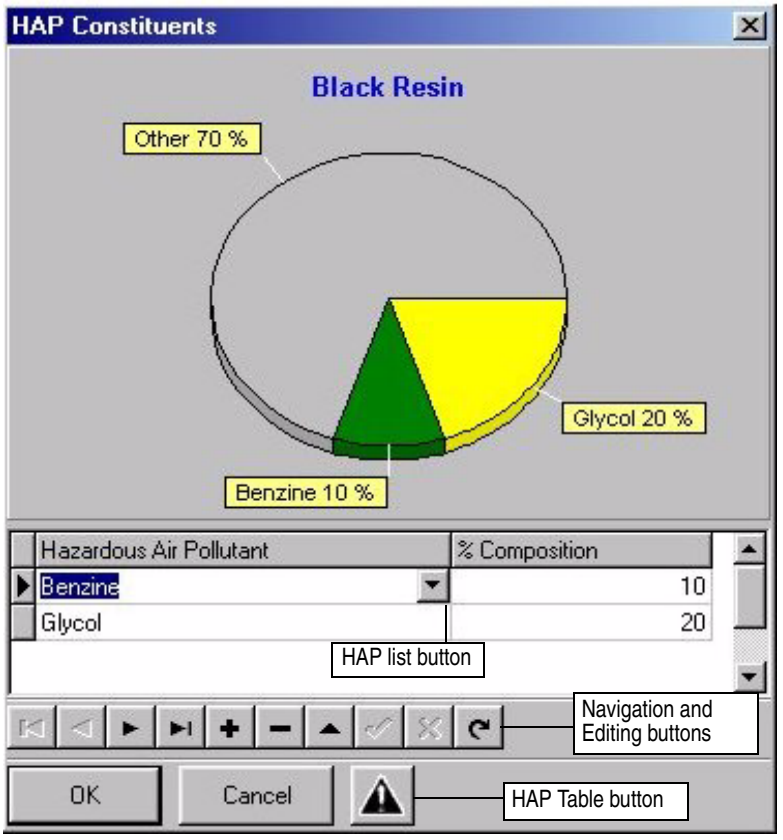
(Volume of Fluid 1 * VOC_1) + (Volume of Fluid 2 * VOC_2) = Total VOC
Where VOC_1 = VOC conversion factor for Fluid 1
Where VOC_2 = VOC conversion factor for Fluid 2

Configuring HAP Constituents

*Only HAPs already configured in the **Hazardous Air Pollutants (HAP) Table**, page 35, appear in the HAP constituent list.*

HAP Constituents button

1. To open a table of HAP constituents and a pie chart of the composition of the fluid selected in the Master Fluid List, click the HAP button in the upper left corner of the Master Fluid List.



2. Click the HAP list arrow and select a fluid from the list.

3. Click inside the % Composition box and type the HAP percent composition number, taken from the fluid's MSDS.

4. Click OK to save changes and close the dialog box.

PrecisionMix Recipes Table

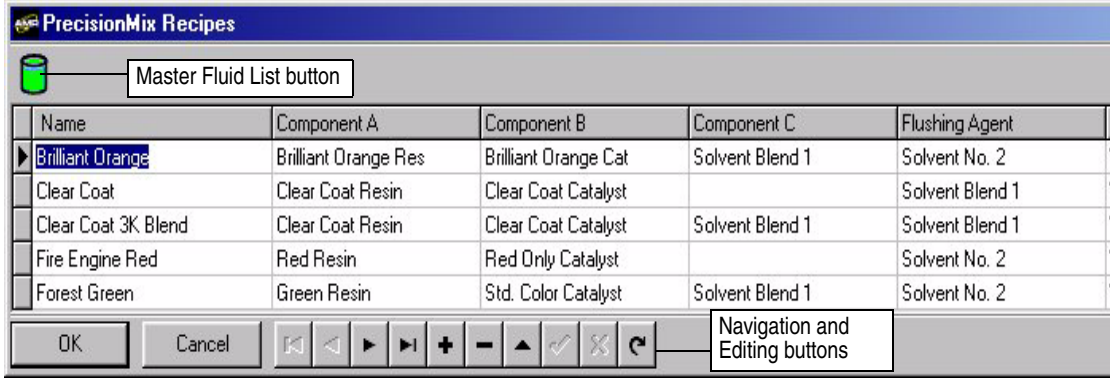
Once all the necessary information is entered in the Master Fluid List table, you configure a PrecisionMix recipe by selecting the components, flushing agent, and dump type from lists derived from that table. Each recipe is given a unique name and kept in a global PrecisionMix Recipe table.

Viewing or Editing Recipes

Recipes button

1. Click Configure ➤ PrecisionMix Recipes or click the Recipes button in the toolbar.

2. The PrecisionMix Recipes table appears.

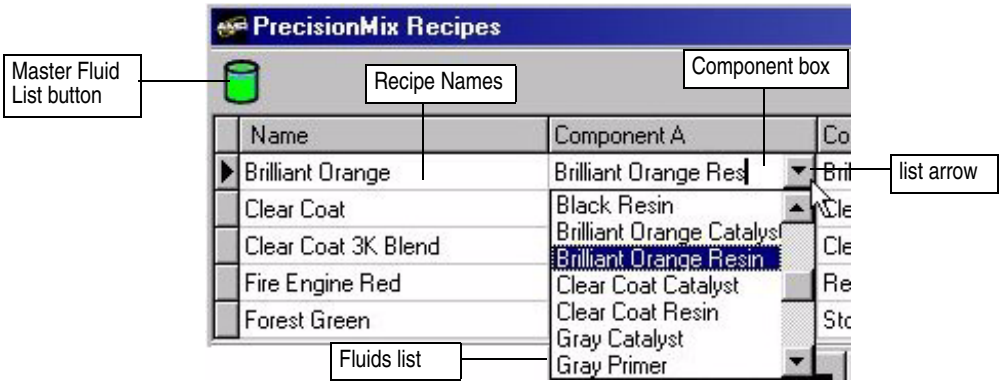


3. Click the Name of the recipe you want to configure and type a name. The name appears on reports and can be used in the Custom Material Report to filter data by recipe name.

If you have both PrecisionMix and ProBatch stations:
If a PrecisionMix station has a "red" recipe and a ProBatch station has a matching "red" recipe, the two recipes should be named exactly the same if you want to filter data by one "red" recipe name.

4. Press the Tab key to go to the next column.

5. Click in the Component box to make the list arrow appear. Click the arrow and select a fluid from the list.



6. Tab to the next column and repeat the process until all the recipe components are defined.

A Recipe designated for a PrecisionMix II 3-K station must have all three component fields (A, B, C) completed. This recipe could also be assigned to a PrecisionMix II 2-K station, which would ignore the entry in the component C field. You cannot clear a fluid designation in a field once a fluid has been selected.

7. Click OK to save your changes and close the Recipes table.

If the fluid you need does not appear in the fluid list or you need to look at the characteristics of the fluid, click on the Master Fluid List button to open the Master Fluid List table.

Deleting a Recipe

Delete button

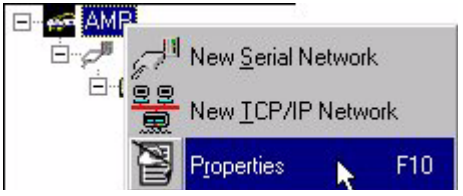
1. Click the Name of the recipe you want to delete.
2. Click the delete button.
3. A dialog box appears asking you to confirm the deletion. Press the OK button. If a PrecisionMix station is using the recipe, the record cannot be deleted. Press OK to close the dialog box. Delete the station recipe link as instructed in **Deleting a Recipe link**, page 67.

Locking Material and Recipe Configuration

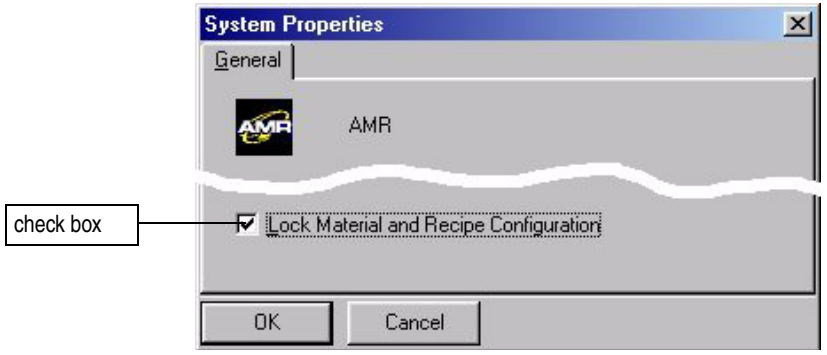
When the Master Fluid List, HAP, and Recipe table configuration is complete, they can be set to “read only”. This helps avoid making changes accidentally.

If you use the Read command to synchronize the PrecisionView application with the ProBatch station settings, the specific gravity could change in the Master Fluid List, even if the Material and Recipe Configuration is locked.

1. Double right-click on AMR in the Network Overview pane and select Properties.



2. The System Properties dialog box appears.



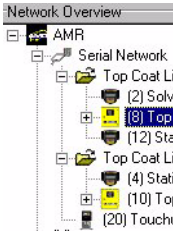
3. Select the Lock Material and Recipe Configuration check box and click OK.

If further changes to the Master Fluid List, HAP or Recipe tables are necessary, click to clear the check box and press OK.

SECTION
4

Configuring the Network Overview

Network Overview



The Network Overview pane appears on the left side of the Main Application Window. The networks, folders, and stations you configure appear in a Windows Explorer style directory.

The directories can be expanded or contracted by selecting the + or -. Expanding a network directory shows you the stations that have been setup in that network. Expanding the PrecisionMix station entry will show you the recipes configured for that station.

The Network name can be customized. Select the Network text and type in the desired name. Station names are changed in their properties dialog box.

Many of the application functions are sensitive to which object is selected in the Network Overview. For example, if you are generating the Hazardous Air Pollutant Detail report, only the station(s) contained on or below the object selected in the Network Overview will be included in the report. Clicking the Properties command on the menu or toolbar will display the properties dialog box specifically for the object selected.

In the same way, what appears in the main application window will change according to what is selected in the Network Overview. If a Station is selected, only the alarms and events associated with that station will appear in the Alarms and Events Log. If a Recipe is selected, only the alarms and events associated with that recipe will appear.

The following objects can appear in the Network Overview.

Application: This object always appears in the Network Overview and cannot be deleted. It contains all the Networks, Folders, and Stations setup in the application.

Serial Network: This object represents one serial connection to the PC. Multiple Serial Networks can be added under the Application. A Serial Network can contain Folders and Stations.

TCP/IP Network: This object represents one TCP/IP (ethernet) connection to the computer. Multiple TCP/IP Networks can be added under the Application. A TCP/IP Network can contain Folders and Stations.

Folder: This object represents a logical grouping of Stations, such as stations located in a paint booth or an area of a plant. You can only add a Folder under a Network and it can only contain Stations, not other Folders or Networks. You can drag a Folder from one Network to another Network. However, this is not recommended as doing this causes all Stations contained in the Folder to be moved to the other Network and they will no longer communicate over the original Network.


Informer Station


PrecisionMix Station


ProBatch Station

Station: This object represents one of the devices supported by the PrecisionView application. You can only add a Station under a Network or a Folder. You can drag a Station from one Folder or Network to another Folder or Network. However, if doing so causes the Station to change Networks, it will no longer communicate over the original Network.

AMR

General system properties are configured at the application level in the Network Overview.

Configuring System Properties

Properties button

1. Double right-click on AMR in the Network Overview and select Properties or click on AMR, then click on the Properties button on the toolbar.

2. System Properties dialog box appears. Configure the system properties as needed.

   Target Maximum VOC: *read only* calculated sum of the individual station's monthly VOC targets.

   VOC Units of Measure: units to measure and report VOC. The VOC units, along with the units of measure selected from the View menu, will appear as the VOC conversion factor in the Master Fluid List and reports. For example, if the VOC units are Lbs and the units of measure are metric, the VOC factor appears as Lbs/L. Refer to **VOC Calculation**, page 38.

Changing volumetric units will cause VOC conversion factors to recalculate for the new units. For example: if the VOC conversion factor is 0.2 lbs/gal, and units of measure are changed to liters, the VOC conversion factor will read 0.76 lbs/liter.

Population Interval: how often to take a “snapshot” of production data for each connected station. This setting is relevant only if the AMR database is accessed directly to do custom reporting. Click the Population Interval arrow and select a time interval from the list. Range is from every day at midnight to every ten minutes.

Lock Material and Recipe Configuration: sets the Master Fluid List, HAP, and Recipe tables to “read only” if box is checked. This helps avoid making changes accidentally. Deselect the check box when changes are necessary.

3. Click OK to apply the changes.

Networks

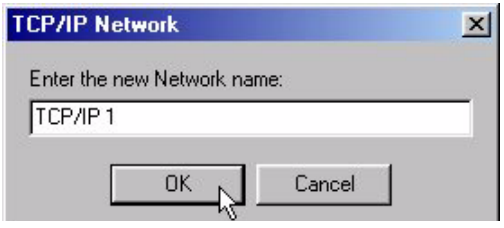
A Serial or TCP/IP Network can only be added under the AMR application. A Network can contain Folders and Stations.

Adding New Network

1. Right-click on the AMR icon in Network Overview.

2. Select either New Serial Network or New TCP/IP Network, depending on which type of network you are configuring.

3. Type a name for the Network and click OK.



Configuring Network Communication Properties

Serial or TCP/IP network communication is configured in the Communication Properties dialog box for the network selected. You should only need to change the communication settings if there are communication problems. If problems occur, a full hardware diagnostic of the network is recommended.

To configure the Network Communication Properties:

Properties button

1. Right-click on the Network and select Properties or click on the Properties button on the toolbar.

2. Communication Properties dialog box appears. Change the properties as needed. Refer to the descriptions of the settings under **Serial Network Properties** (page 52), **Serial and TCP/IP Network Response Settings** (page 53), and **TCP/IP Communications Properties** (page 54).

3. If desired, click the Enable check box to enable network communications for all stations on this network, or click the Disable check box to disable network communications for all stations on this network.

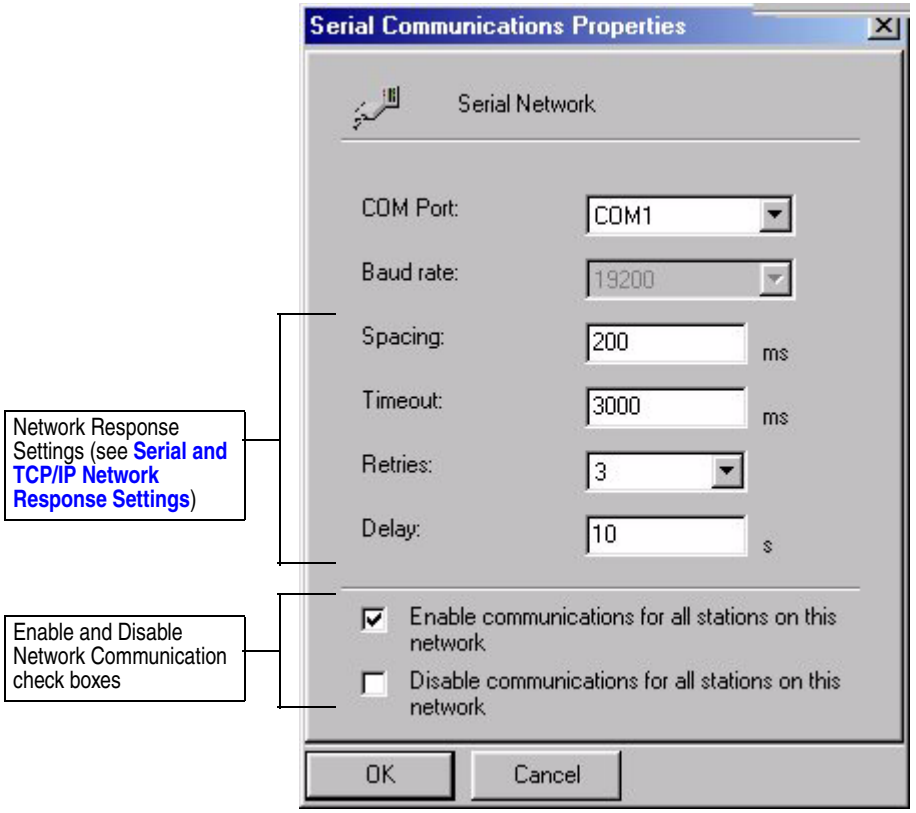
To enable or disable communications for an individual station, you must open the Station properties dialog box for that station.

4. Click OK to apply the changes.

Serial Network Properties

COM Port: is the designated serial communication port. COM 1 is the default. All COM ports available to Windows will be listed. Communication between the PrecisionView application and the Stations will not start until the correct communication port is selected.

Baud Rate: indicates the speed at which messages may be sent to the stations over the serial link. Stations communicate at 19200 baud. This value cannot be changed.



Serial and TCP/IP Network Response Settings

Spacing: causes the application to delay for the specified number of milliseconds before sending a communication request to a station. The default is 200. Longer cables may require greater spacing times. The lower the spacing value, the faster communication will be. Only increase this setting if the application continuously establishes and then loses communication with stations.

Timeout: indicates how long the application will wait for a response from a station after sending a request. A normal value is 1000-3000 milliseconds (1-3 seconds). Longer timeouts may allow more time for stations to send their replies, but this may also slow down communication with the other devices.

Retries: indicates the number of additional communication attempts that the application will make to get a response from a station. The default is 3.

Delay: indicates the length of time that the application will wait between retries to allow the station time to correct any internal problems. When all the retries have been made the application resets the connection to the station. By default, the application is set for three retries, with delays of five seconds between each retry.

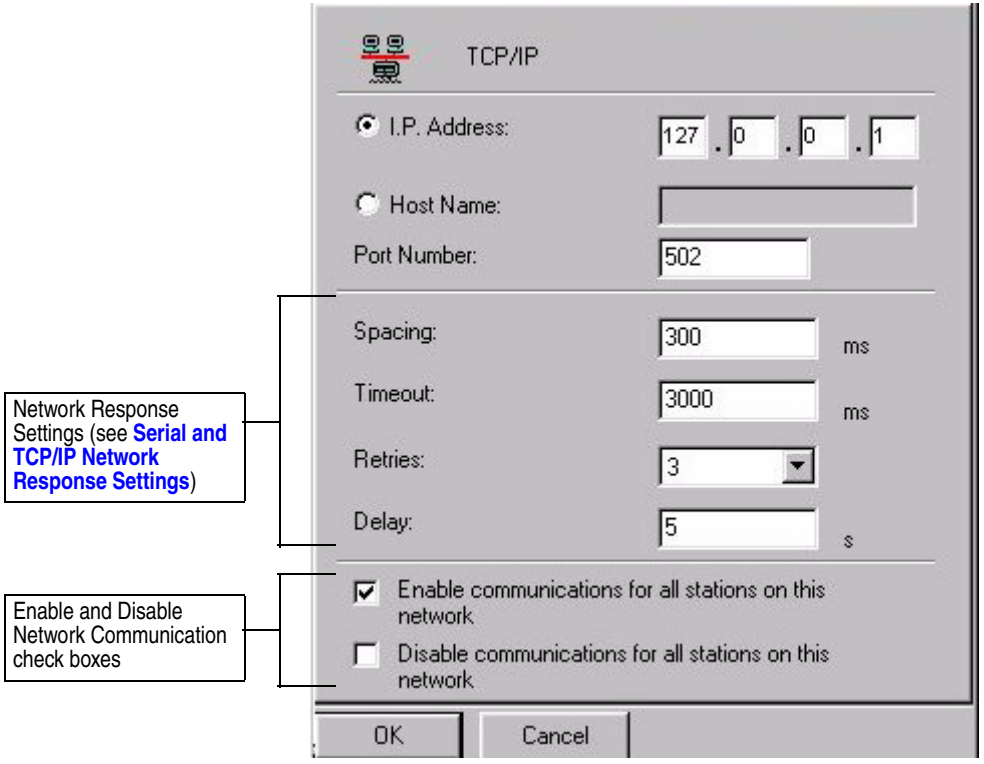
TCP/IP Communications Properties

PrecisionView AMR will route messages across a TCP/IP network using either the IP address or host name of the destination (you cannot specify both in the dialog box).

IP Address: A 32-bit numeric address, written as four numbers separated by periods, that identifies the device on the TCP/IP network.

Host Name: A name identifier of the device on the TCP/IP network. This name is mapped to the device's IP address.

Port Number: Identifies which port is the endpoint of the TCP/IP connection on the device. The default port number is 502.



Folders

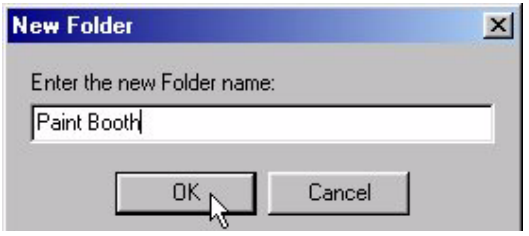
The purpose of the Folder is to enable you to create logical groups of stations, such as stations located in a certain area of a plant. The following are basic rules for creating and locating Folders:

- You can only add a Folder under a Network and it can only contain Stations, not other Folders.
- You can drag a Folder from one Network to another Network. However, doing so causes all Stations contained in the Folder to be moved to the other Network and they will no longer communicate over the original Network.

Adding New Folder

1. Right-click on the Network and select New Folder.

2. Type the new Folder name and click OK.



3. Right-click on the Folder and create the Stations that are part of the grouping. If the Stations are already created, you can drag the Stations to the folder.

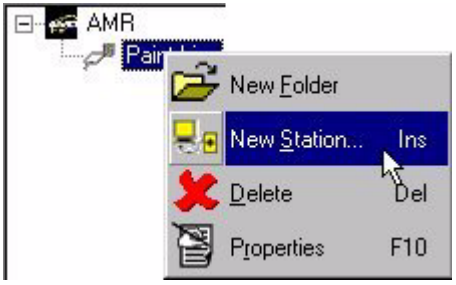
Stations

To network your equipment and connect it to the PrecisionView AMR application, you need to add Stations and configure their properties. The following are basic rules for adding and locating Stations:

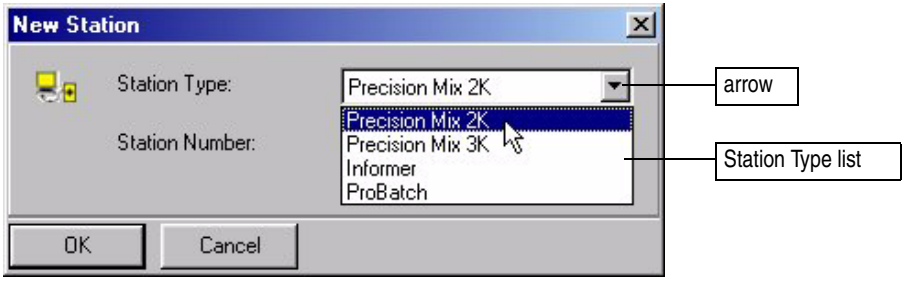
- You can only add a Station under a Network or a Folder.
- You can drag a Station from one Folder or Network to another Folder or Network. However, if doing so causes the Station to change Networks, the Station will no longer communicate over the original Network.
- The Station Name you enter will appear on the Network Overview and on all reports that include the station. Use a short, meaningful name.

Adding New Station

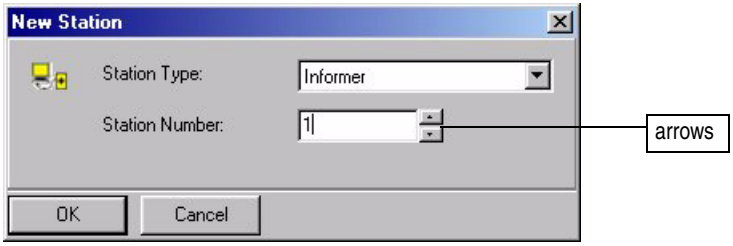
1. Right-click on the Network or Folder where you want to add the Station and select New Station.



2. Click the arrow and select the Station Type from the list.



3. Type a number in the Station Number text box or use the arrows to increase or decrease the number. The number must match the station number set at the physical station.



4. Click OK to apply the changes.

A message appears if a Station is already using the Station Number. Click OK and enter the correct station number.

5. The Station Properties dialog box appears. Follow the procedure **Configuring General Station Properties**, page 58.

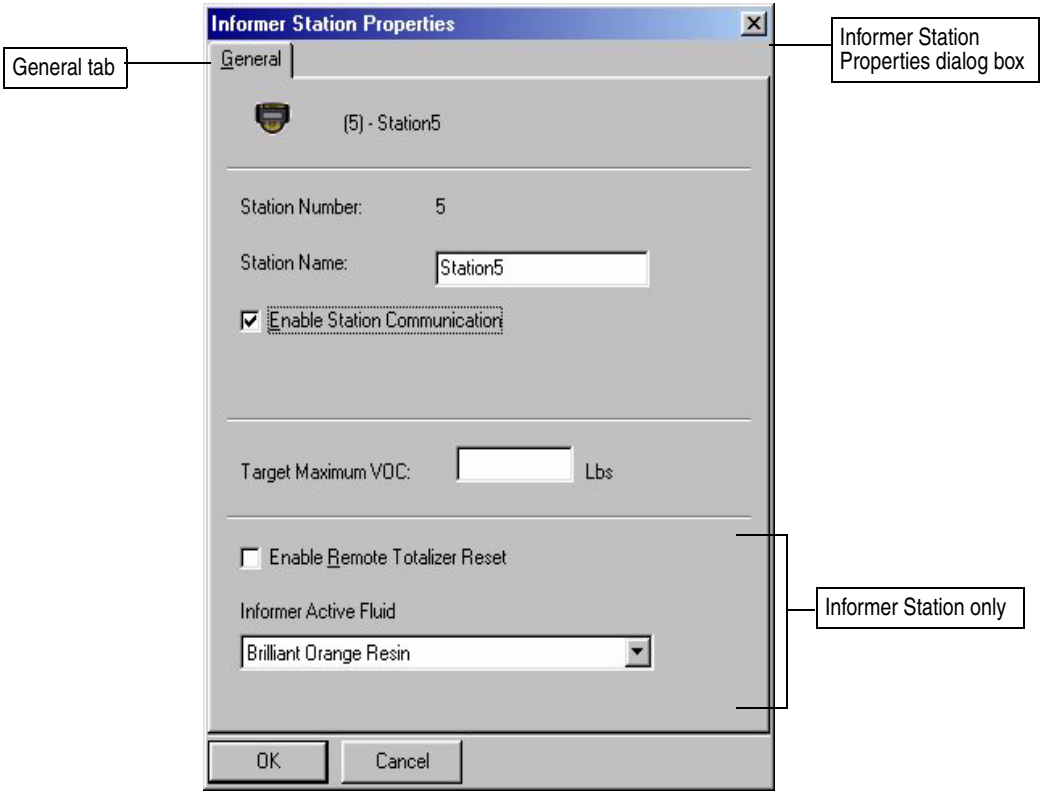
Configuring General Station Properties

Properties button

1. If the Station Properties dialog box is not open, right-click on the station you want to configure and select Properties or click on the station, then click on the Properties button on the toolbar.

2. Click the General tab (PrecisionMix and ProBatch stations only).

The dialog box for the Informer Station Properties has a General tab only.



3. Type a name in the Station Name box. This name displays in the Network Overview and on reports.

4. Select the Enable Station Communication check box to communicate with the device with the same station number. Communication must be enabled to collect data for the station.

The proper hardware and cables must be installed and the physical station must be configured to communicate with the PrecisionView application.

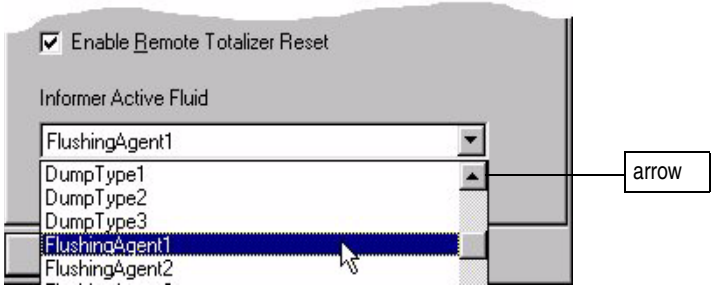
5. If desired, type a volume in the Target Maximum VOC box in the Informer Station Properties dialog box. If the actual Volatile Organic Compounds for the station exceed this value within a month, a message will appear in the Alarm and Event Log.

6. If you are configuring an Informer station, continue as instructed in **Informer Station - Additional General Properties**, page 60. For all other types of stations, click OK to apply the changes and close the dialog box.

*Further instructions on configuring PrecisionMix and ProBatch stations are in Section 5, **Configuring PrecisionMix and ProBatch Station Properties**.*

Informer Station - Additional General Properties

1. If desired, select the Enable Remote Totalizer Reset check box to allow execution of Reset Batch and Reset Maintenance commands from the PrecisionView application. If left unchecked, resets can only be made at the physical Informer station.



2. Click the Informer Active Fluid arrow and select a fluid from the list.

The correct fluid designation is very important. The PrecisionView application uses this information to track the batch history and totalizer snapshot data. ***If a fluid change is made at the physical Informer station, make sure it is changed in the Informer Station Properties also.***

3. Click OK to apply the changes and close the dialog box.

Removing a Station

Backup the configuration data before deleting a station. When a station is removed, all configuration information (fluid assignments, recipes, etc.) and production history for that station are removed also. Follow the procedure **Backup PrecisionView Configuration**, page 21.

1. Backup the station configuration.

2. Select the station in the Network Overview.

3. Click Edit ➤ Delete from the menu bar or right-click on the station and select the Delete command.

Communication Problems

When communication is enabled between the PrecisionView application and a station, the application reads the station setup and you should see the following things happen in the main application window:

- “Station connection made” appears in Alarm and Event Log.
- Station information appears in the Process Monitor
- “Offline” changes to “Online” or the time-stamp appears in the status bar.
- Station in the Network Overview goes from dimmed to fully visible.

If communication fails:

- Check that cables are connected properly.
- Make sure the physical station is turned on snf configured properly.
- Check communication settings.
- View Communication Statistics (refer to page 63).

Communication Statistics

To look at communication statistics, click View ➤ Communication Statistics from the menu bar. The following information displays at the bottom of the Network Overview. The data will be for the selected station or for the network if a network is selected.

Sent: requests sent to the stations.

Received: responses received from the stations

Retried: times a request was resent to the stations.

Failed: invalid or incomplete responses received from the stations; may also indicate a COM port failure

Timed Out: times the application times out waiting for a response from the stations.

Click Reset Statistics button to clear the values for the selected station to zero. If a network is selected, all values reset to zero.

SECTION

5

Configuring PrecisionMix and ProBatch Station Properties

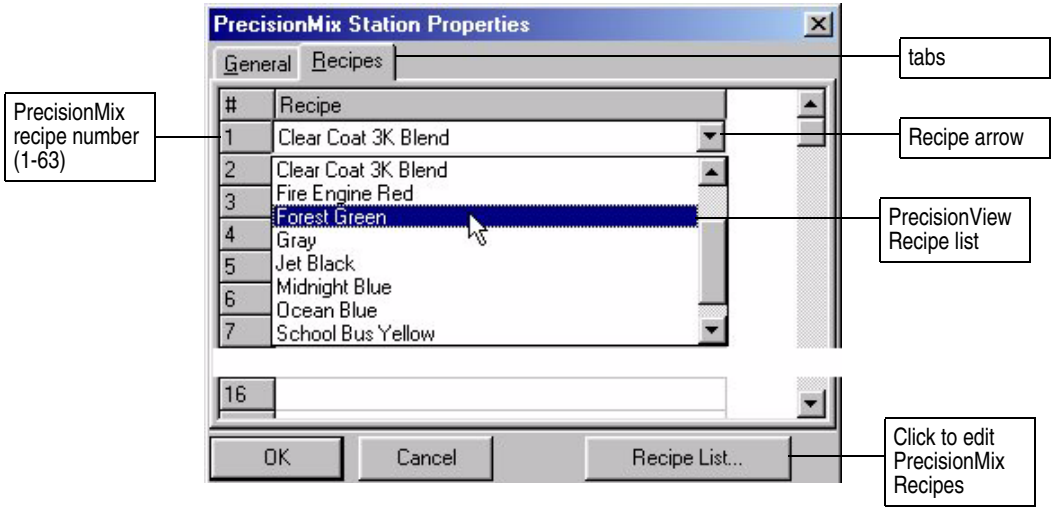
PrecisionMix Station Properties

Recipes Tab

Follow this procedure to create a link between the recipe numbers assigned at the physical PrecisionMix station and recipes configured with the PrecisionView application.

Properties button

1. If the PrecisionMix Station Properties dialog box is not open, click on the station, then click on the Properties button on the toolbar.
2. Click the Recipe tab in the PrecisionMix Station Properties dialog box.
3. Select a PrecisionMix station recipe number (1-63).
4. Click the Recipe arrow and select the corresponding PrecisionView Recipe from the list.

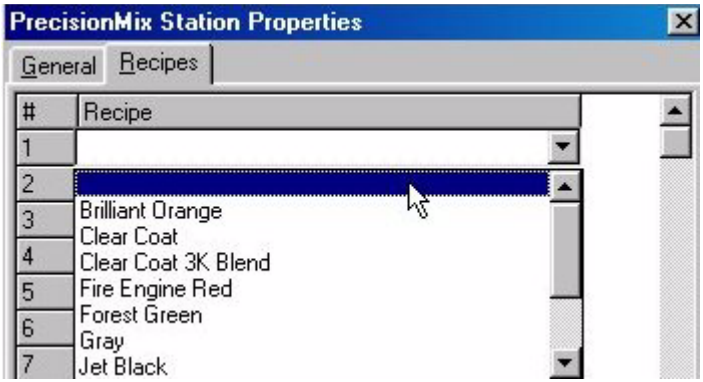


To edit or view the PrecisionMix Recipes Table, click the Recipe List button.

5. Click OK to save the changes and close the dialog box.

Deleting a Recipe link

1. Select in the Recipes tab the recipe link that you want to delete.
2. Select the empty space at the top of the Recipe list.



The recipe number remains in the # column. The recipe link is deleted without affecting the recipes setup in the PrecisionMix Recipes Table.

3. Click OK to confirm the deletion and close the dialog box.

ProBatch Synchronization

Settings entered in the ProBatch Station Properties dialog box have counterparts on the physical ProBatch station and can be read from or written to the station. The settings affect the physical device, the station created with the PrecisionView application, and the accuracy of reports generated.

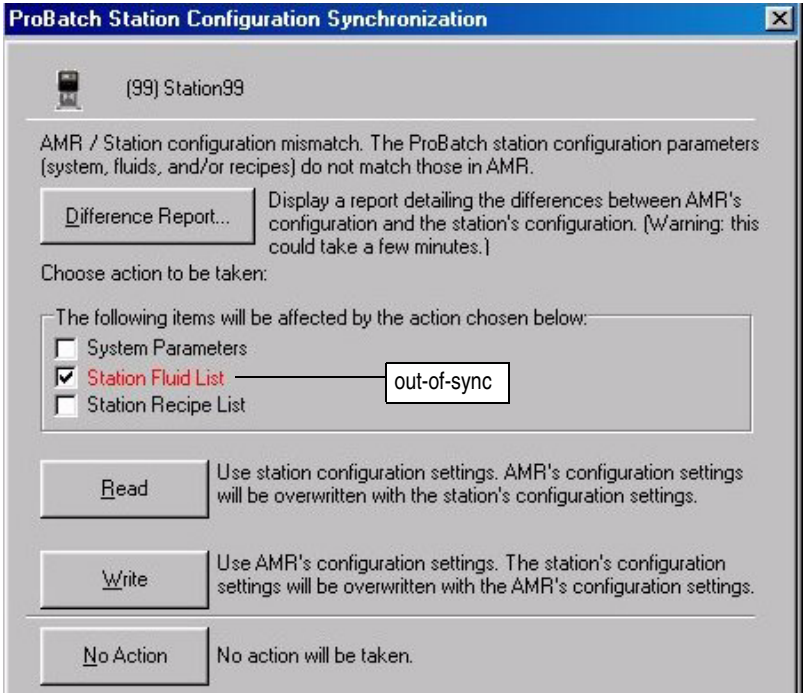
Before you begin to configure a ProBatch station, it is important that:

- You understand the Read and Write commands.
- You recognize and know how to correct an out-of-sync condition.

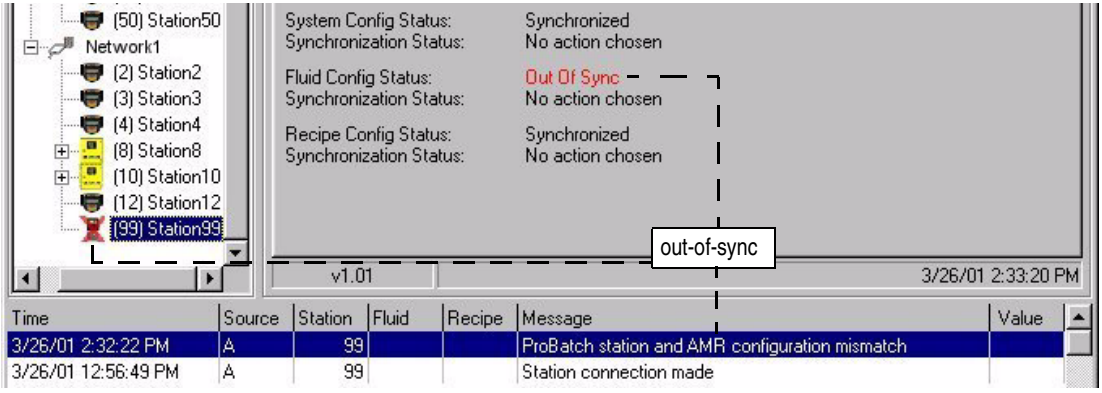
You will most likely use the Synchronization button in the ProBatch Station Properties dialog box if one of the following conditions exist:

- You have the physical ProBatch station configured and you want to upload (*Read*) those settings to the PrecisionView application.
- You have the Station properties configured with the PrecisionView application and you want to download (*Write*) those settings to the physical ProBatch station.
- You changed the ProBatch station settings on either the physical station or in the PrecisionView application and you received an out-of-sync notification.

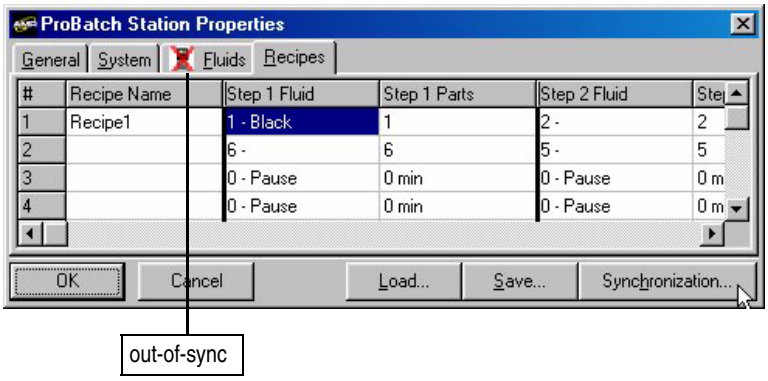
The first time an out-of-sync condition occurs, the Synchronization dialog box appears. At other times, click the Synchronization button in the station properties dialog box to display it. The properties that are out-of-sync are red.



You can see that there is an out-of-sync condition in three places in the Main Window.



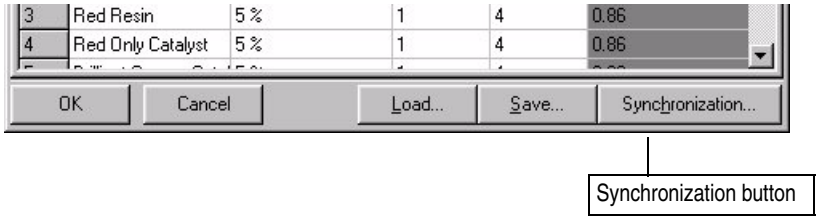
The ProBatch out-of-sync icon also appears in the ProBatch Station Properties dialog box.

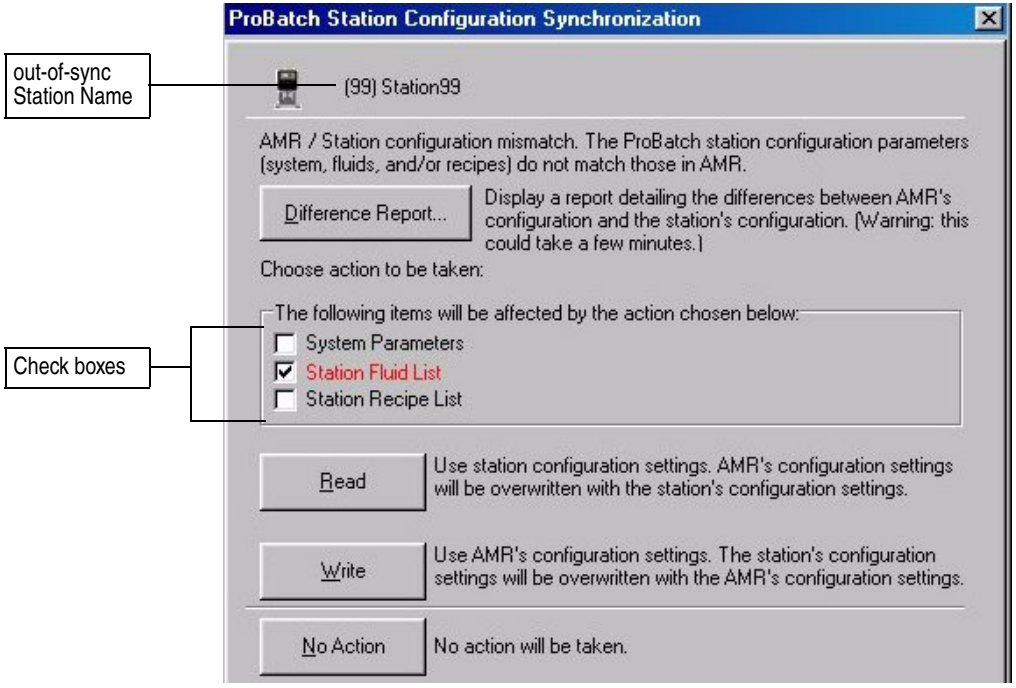


The ProBatch out-of-sync icon is dimmed if the station is offline.

Synchronizing ProBatch Station and PrecisionView Application

1. If the Synchronization dialog box is not already open, click the Synchronization button in the ProBatch Station Properties dialog box.





2. To view a report of the differences between the PrecisionView application settings and the physical station settings, click on the Difference Report button. A dialog box appears with the approximate time it will take to create the report. Click Yes to run the report.

3. Select the check boxes of the station properties you want synchronized. Only the checked properties will synchronize when you click the Read or Write button.

If more than one ProBatch station is on-line and out-of-sync, a check box appears under the No Action button. Selecting the box and clicking the No Action button will close the dialog box without synchronizing and will prevent the Synchronization dialog boxes for the other out-of-sync stations from appearing. If you click the Read or Write button, the check box has no effect.

4. Click on the **Read** button to overwrite the PrecisionView application settings with the physical station settings and close the dialog box.

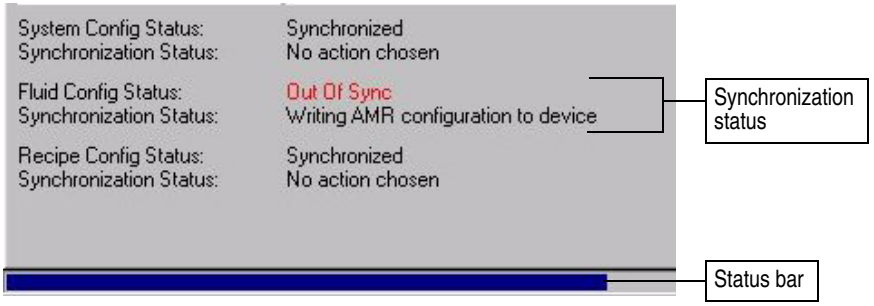
   Click on the **Write** button to overwrite the physical station settings with the PrecisionView application settings and close the dialog box.

   Click on the **No Action** button to close the dialog box without synchronizing.

If the ProBatch station is dispensing when the Read or Write button is clicked, an error message appears. Wait for the dispense to complete before Reading or Writing settings. Do not start another dispense until the Read or Write command is done executing.

Synchronization Troubleshooting

The synchronization status appears in the Process Monitor pane in the Main Window.



Synchronization can fail under the following conditions:

Problem	Solution
Communication between the station and the application is interrupted.	Correct the communication problem and retry synchronizing.
Station is dispensing when synchronization is started.	Wait until the dispense is done before synchronizing.
A fluid was given a different specific gravity than what is entered on the Master Fluid List when the station's fluids were configured.	Generate a Difference Report to see which fluid specific gravities are out-of-sync. Manually match the specific gravities by doing one of the following: 1.) Choose a different fluid in the Master Fluid List. 2.) Change the specific gravity at the physical ProBatch station to match the Master Fluid List value. 3.) Change the fluid's specific gravity in the Master Fluid List.

Use caution when changing the specific gravity of a fluid in the Master Fluid List as this will affect all ProBatch stations using that fluid selection. If a fluid formula changes but the old formula is still being used, it is best to configure a new fluid on the Master Fluid List for the new formula.

ProBatch Station Properties

The following pages describe how to configure the ProBatch Station Properties with the PrecisionView application. Changes made to the settings may cause an out-of-sync condition that can be corrected by synchronizing the physical station with the application. See **ProBatch Synchronization**, page 68, for more information.

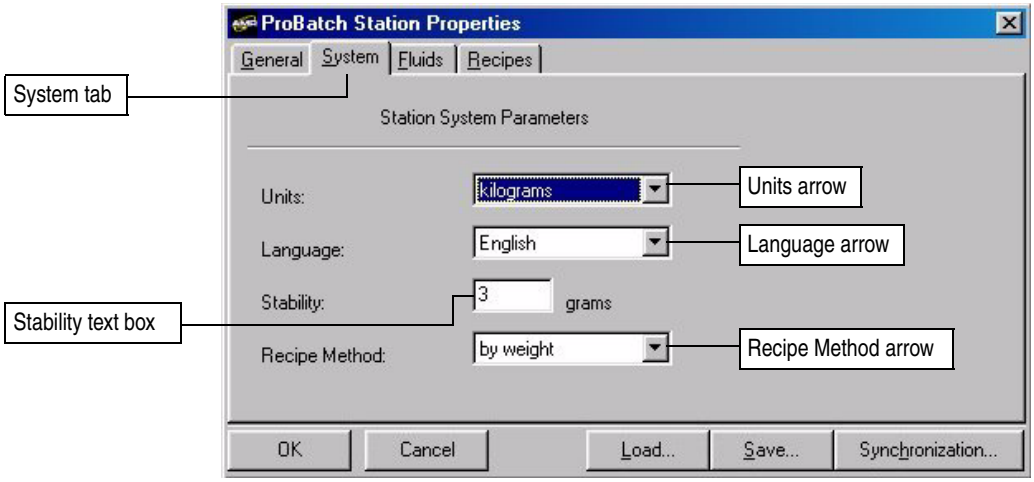
System Tab

Follow this procedure to configure the ProBatch System.

Properties button

1. If the ProBatch Station Properties dialog box is not open, click on the station, then click on the Properties button on the toolbar.

2. Click the System tab in the ProBatch Station Properties dialog box.



3. Click the Units arrow and select the units for the ProBatch recipes and dispenses.

4. Click the Language arrow and select the language to display at the physical ProBatch station.

If language is changed, the station's power must be turned off, then on, for the change to take effect.

5. Click in the Stability text box and type a number for stability.

Stability is the number of grams the ProBatch scale is allowed to fluctuate in 1 second and still be considered stable. The default is 5 grams. The smaller the number, the longer it will take the scale to stabilize.

6. Click the Recipe Method arrow and select either "by weight" or "by volume".

7. Click OK to save the changes and close the dialog box.

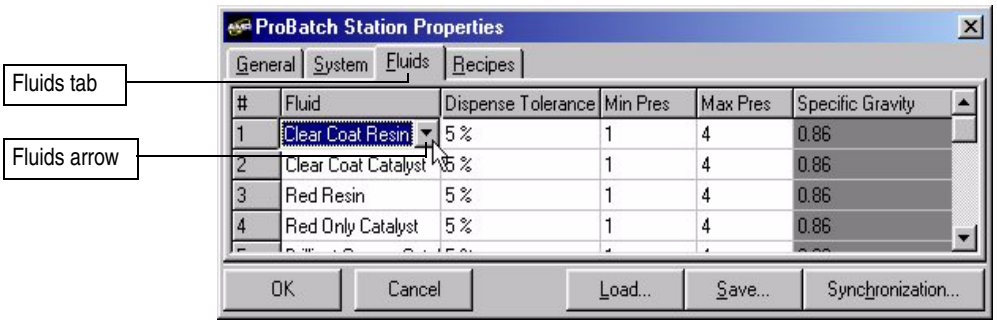
Fluids Tab

Follow this procedure to configure the parameters for each fluid you will use in a recipe. Fluid parameters must be set before the fluid can be used in a recipe.

Properties button

1. If the ProBatch Station Properties dialog box is not open, click on the station, then click on the Properties button on the toolbar.

2. Click the Fluids tab in the ProBatch Station Properties dialog box.



Fluid numbers 1-6 (in the # column) correspond to the ProBatch fluid valves and are used for automatically dispensed fluids. Fluid numbers 7-99 correspond to manually added fluids.

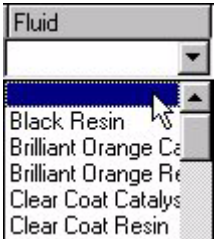
3. Click the Fluid arrow. Select a fluid from the list to assign to the number (#). The list consists of all fluids in the Master Fluid List except those with a zero value for the specific gravity. When you select a fluid, the following things happen:

    - The fluid is associated with the number in the # column and this information is used by the ProBatch station.

- The specific gravity entered in the Master Fluid List is automatically entered in the Specific Gravity column.

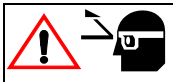
Values in the Specific Gravity column can only be changed in the Master Fluid List dialog box. Both the PrecisionView application and the ProBatch station use this value to convert the fluid mass measurement to volume measurement. It is very important that the value is synchronized between the application and the station.

- Choosing the empty space at the top of the Fluid list makes the specific gravity 0 and indicates the fluid is not used. You cannot make this selection if the fluid is used in a ProBatch recipe.



4. Press the Tab key or click in the Dispense Tolerance column and type a dispense tolerance number between 1-99.

5. **If the fluid number (#) is from 1 to 6,** you need to set the minimum and maximum valve pressures. Enter a number between 1-4 in the Min Pres and Max Pres columns.



A maximum setting that is too high may cause fluid to splash and cause inconsistent scale readings with light viscosity fluids. Refer to the *ProBatch System Manual 309300* for more information about this setting.

6. Repeat steps 3-5 for all the fluids you will use in the ProBatch station recipes.

7. Click OK to save the changes and close the dialog box.

Recipes Tab

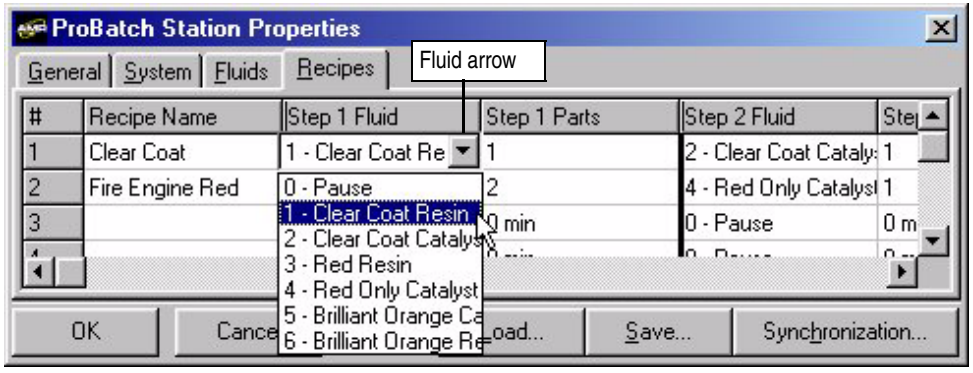
Follow this procedure to configure the parameters for each recipe you will dispense with the ProBatch station. You can have up to 250 recipes.

You also need to configure recipes for each of the ProBatch station dispense valves to load and purge the fluid lines. Follow the procedure ***Recipes to Load and Purge Fluid****, page 80.*

Properties button

1. If the ProBatch Station Properties dialog box is not open, click on the station, then click on the Properties button on the toolbar.

2. Click the Recipes tab in the ProBatch Station Properties dialog box.



3. Click in the Recipe Name text box and enter a name to assign to the recipe number (#). The name appears on reports and can be used in the Custom Material Report to filter data by recipe name.

If you have both PrecisionMix and ProBatch stations:
If a PrecisionMix station has a "red" recipe and a ProBatch station has a matching "red" recipe, the two recipes should be named exactly the same if you want to filter data by one "red" recipe name.

4. There are six possible steps for each recipe. Configure each step as follows:

    a. Click the Fluid arrow and select the fluid number (0-99).
    0 = pause
    1-6 = automatic valves
    7-99 = manual fluid add

The controller will not accept an invalid fluid number. Make sure all of the fluid parameters were defined in Fluid Setup.

    b. Type the parts (proportion) of the fluid required in relationship to the other fluids in the recipe. If the fluid number is 0 (pause) type the number of minutes (0-99) to pause.

All ProBatch fluids are set to proportion by either weight or volume when configuring the System Tab (refer to page 74).

5. Repeat steps 3-4 for all the recipes you will use with the ProBatch station.

6. Configure recipes to load and purge fluid as instructed below.

7. Click OK to save the changes and close the dialog box.

Both the PrecisionView application and the ProBatch station use the information entered in the Recipes tab. It is important that the values are synchronized between the application and the station.

Recipes to Load and Purge Fluid

Follow this procedure to configure a recipe for each of the ProBatch station dispense valves to use to load and purge the fluid line.

1. Select a group of recipe numbers that you are not planning to use. In this example, the load/purge recipes will start with #51.

2. Configure the load and purge recipe for the first valve to consist of fluid #1 and an amount of 1 part.

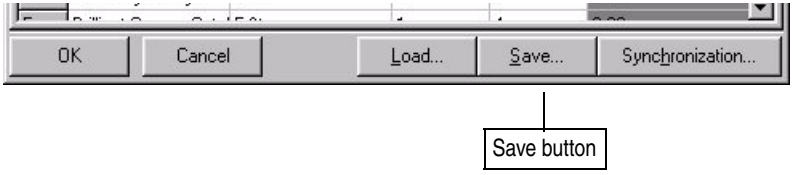
3. Configure the load and purge recipe for the second valve to consist of fluid #2 and an amount of 1 part.

4. Continue to configure a load and purge recipe for each of the fluid valves.

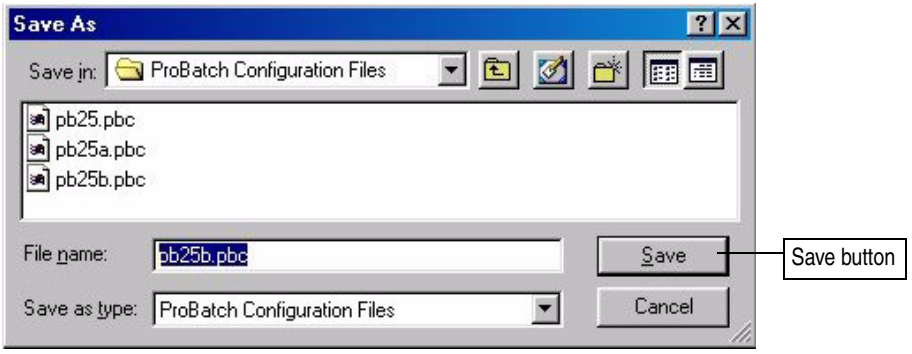
Save ProBatch Station Configuration

After configuring the ProBatch station properties as desired, you can save the configuration to a file for backup or to load and use to configure other ProBatch stations.

1. Click the Save button in the ProBatch Station Properties dialog box.



2. The Save As screen appears.



3. Navigate to the directory where you want to save ProBatch configuration files.

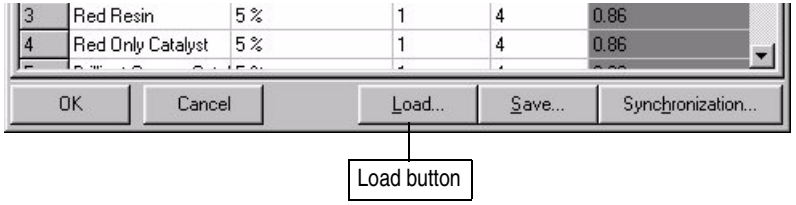
4. Name the file and click the Save button.

Load ProBatch Station Configuration

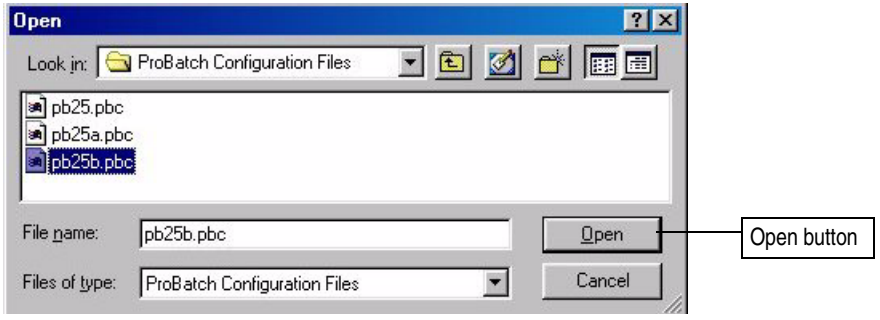
You can load a previously saved ProBatch configuration file to recover settings or use to configure another ProBatch station.

If the PrecisionView application is installed and configured on more than one computer, the configuration files are not interchangeable. You cannot load a configuration file saved on another computer.

1. Click the Load button in the ProBatch Station Properties dialog box.



2. The Open screen appears.



3. Navigate to the directory where the ProBatch configuration file is located.

4. Click on the desired file and click the Open button. The ProBatch configuration is loaded and the settings appear in the ProBatch Station Properties dialog box.

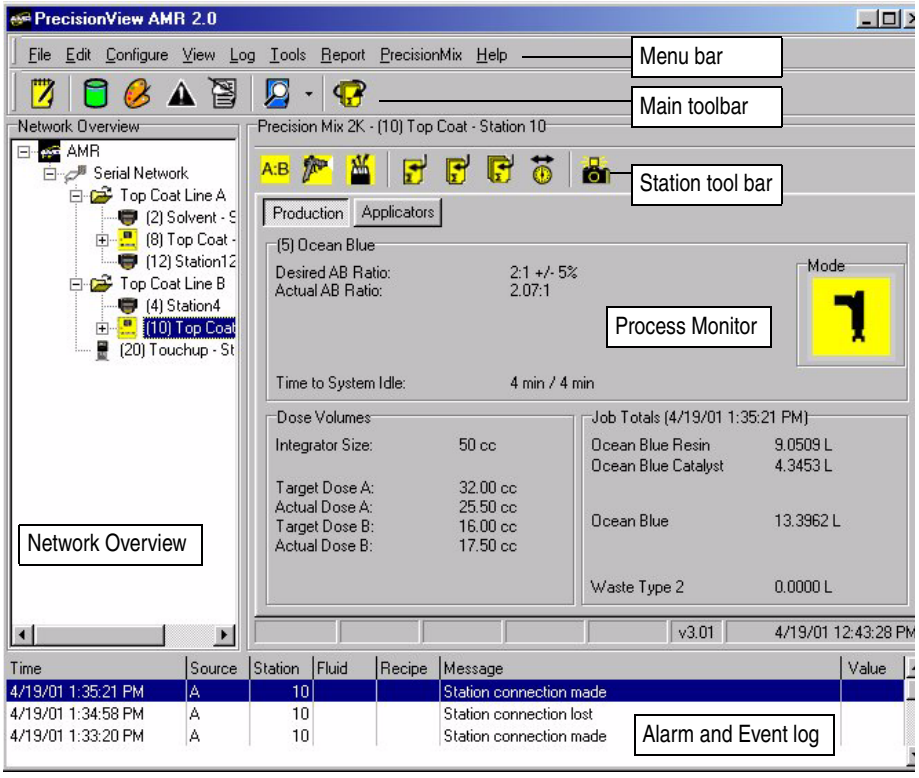
5. Click OK to save the changes and close the dialog box.

SECTION

6

Process Monitoring

Introduction



This section covers how to use the application to:

- Monitor network and station processes with the Process Monitor
- Monitor the network status with Performance Graphs
- Modify the station(s) or the PrecisionView application with the Reset Commands, Synchronize Clocks Command, and Totalizer Snapshot
- Modify the Alarm and Event Log

Process Monitor

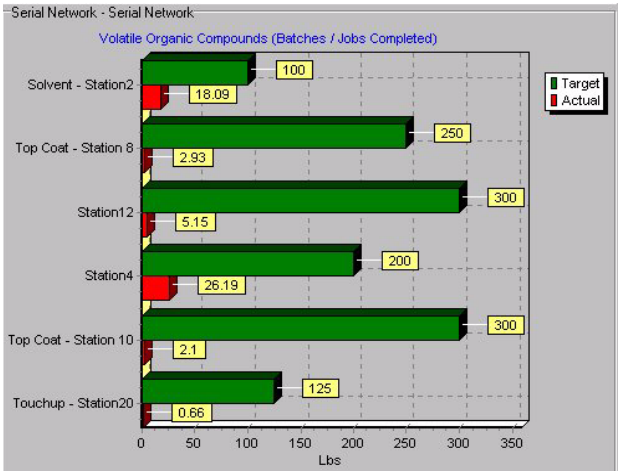
The application graphically displays the current state of a selected object. This allows users to easily monitor each station on the network.

The content of the Process Monitor changes, depending on which object is selected in the Network Overview.

Stations have to be on-line for their data to display.

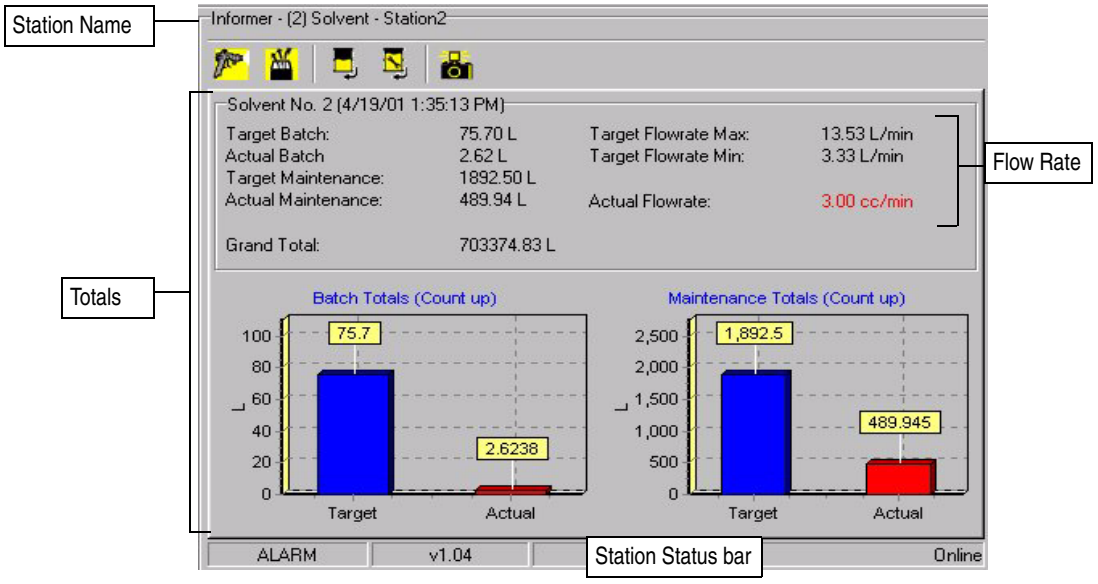
Total VOC Emissions Graph

When the Network, Folder or AMR object is selected in the Network Overview, the Process Monitor displays a VOC graph showing the total VOC emissions for each of the configured stations on the network. The graph has a green bar for Target VOC values and a red bar for Actual VOC values. The values for the VOC graph cover the past month, from the first day of the month to the present. The PrecisionView application resets the VOC graphs at the at the end of the last day of the month. You cannot *manually* reset the Actual VOC values.



Informer Station Process Monitor

When an Informer Station is selected in the Network Overview, the following Process Monitoring screen appears.

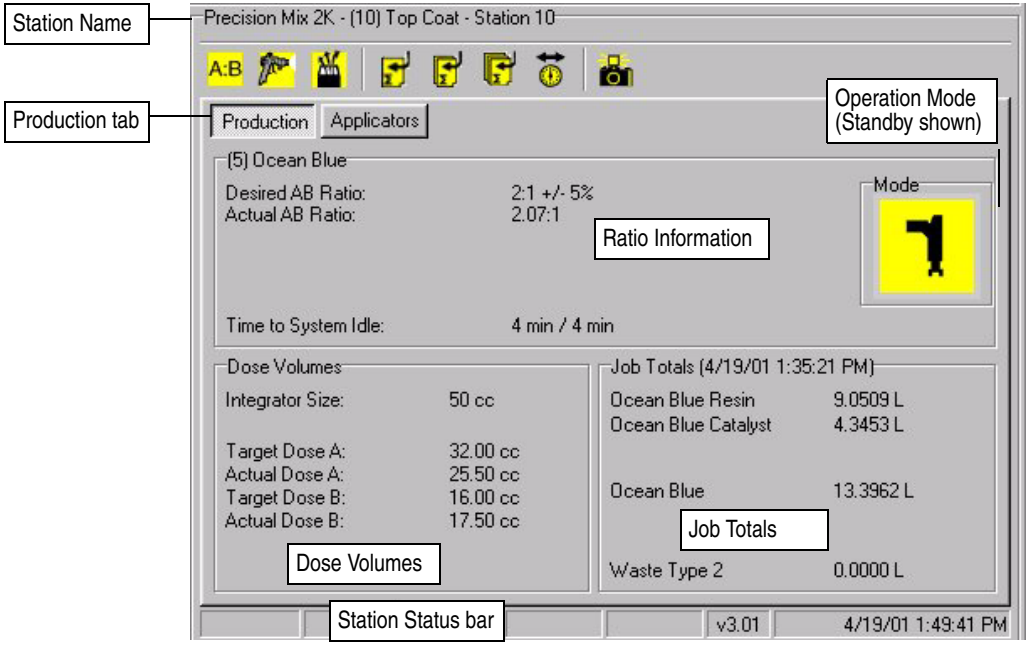


The Informer Station Process Monitor provides information on batch and maintenance totals and flow rates, both numerically and as bar graphs. Data does not appear until the PrecisionView application connects to the Informer station.

PrecisionMix Station Process Monitor

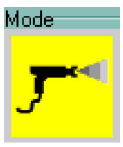
The PrecisionMix Station Process Monitor has a Production and Applicators monitor. Screens are accessed by selecting the corresponding tab at the top of the Process Monitor.

Production Monitor



The Production monitor displays information about the activity of the selected PrecisionMix Station.

- **Operation Mode:** An image on the right side of the screen indicates the current operation mode of the station.



Spray Mode

Purge Mode

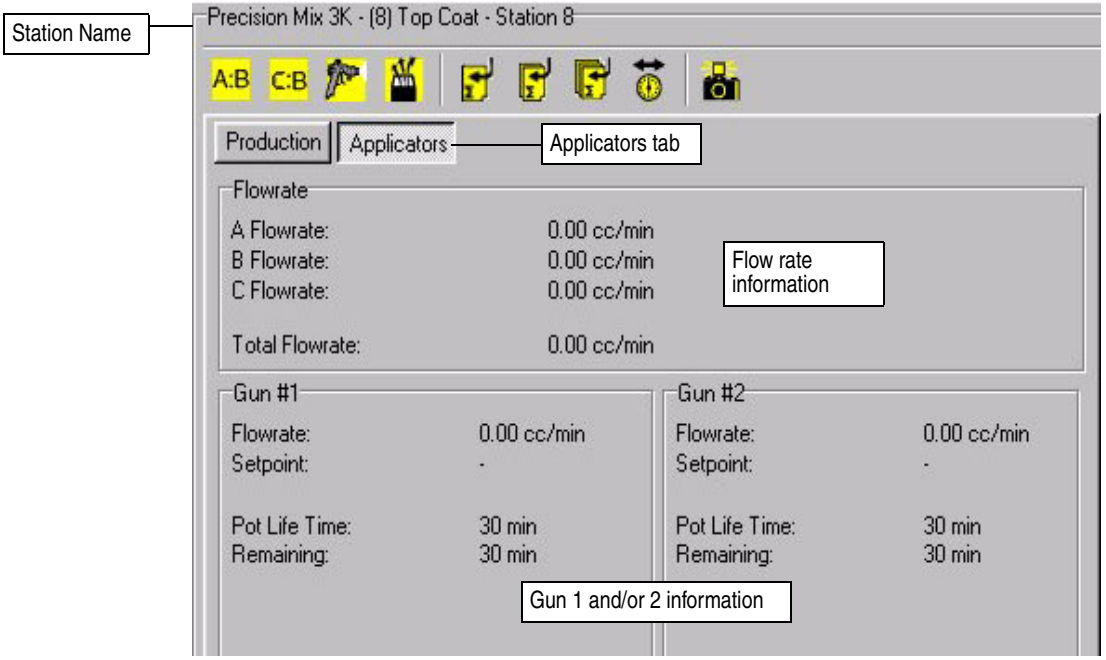
Standby Mode

- **Ratio Information:** While the system is in Standby or Mix mode, the Production Monitor displays desired and actual mix ratios, as well as ratio tolerance and time-to-system idle. When the station is in Purge mode, the Process Monitor displays purge cycles or purge time remaining.

- **Dose volumes:** Target and actual dose volumes for components are displayed, along with station integrator size.

- **Job Totals:** The currently active recipe job totals are displayed for each component, dump type, and flushing agent, as well as the job totals for the mixed material. The flushing agent total is not shown if there is no solvent meter.

Applicators Monitor

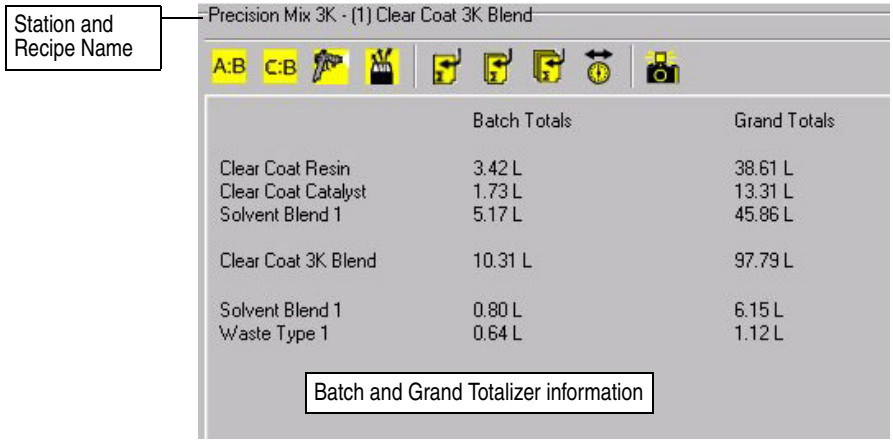


The Applicators monitor displays information about the PrecisionMix station flow rates.

- **Component Flow Rates:** Flow rates are shown for the Precision-Mix components, both separately and combined.

- **Gun Flow Rates:** Flow rates are displayed for each gun configured in the station. If flow control is in use, the set point for each gun appears along with the flow rate. Potlife time (total and remaining) appear below the flow rates for each gun.

PrecisionMix Station Recipe Process Monitor



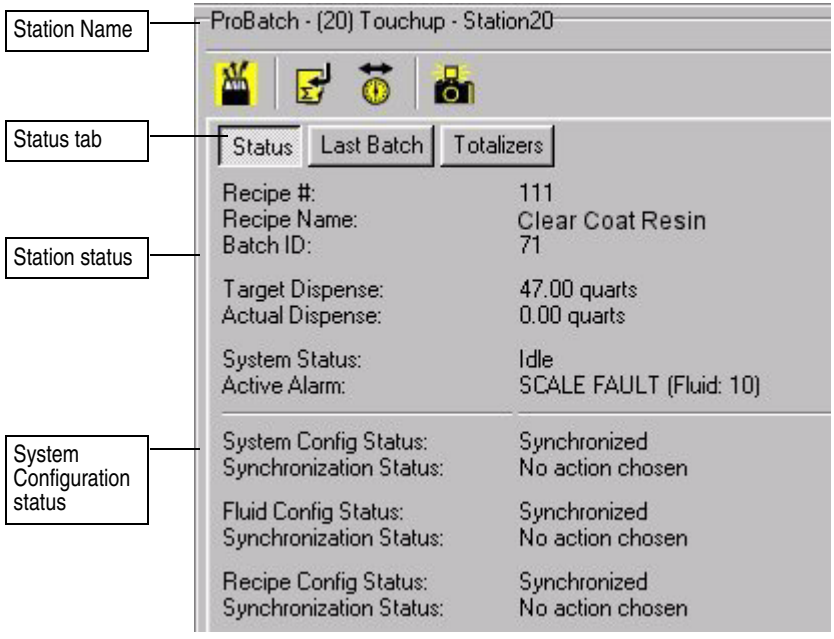
When a recipe is selected in the Network Overview, the Process Monitor displays the Batch and Grand Totals for each component in the recipe, as well as the total for the combined components. The flushing agent totals are not shown if there is no solvent meter.

Only the active recipe will show real-time data. Inactive recipes will display the most current totalizer information for Batch and Grand Totals.

ProBatch Process Monitor

The ProBatch station Process Monitor has a Status, Last Batch and Totalizers monitor. The screens are accessed by selecting the corresponding tab at the top of the Process Monitor.

Status Monitor



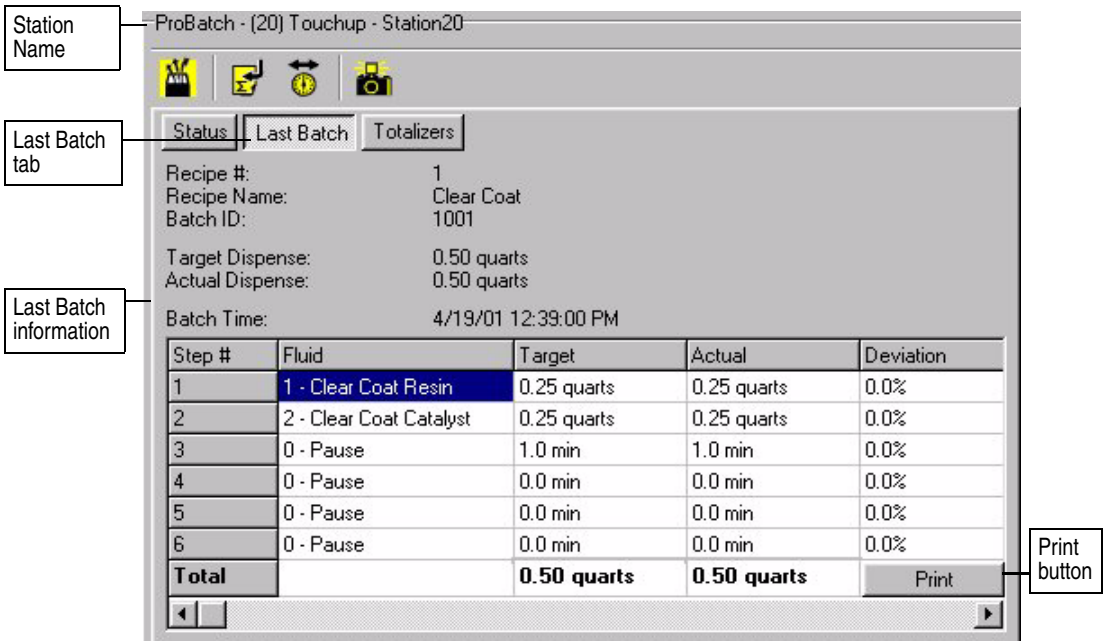
The Status monitor displays information about the activity and configuration of the selected ProBatch station.

- **Station Status:** Shows the current recipe selected, batch ID, target and actual dispense, system status (idle, dispensing, or setup mode), and if an alarm is active.

- **System Configuration Status:** Shows whether the ProBatch station configuration matches the PrecisionView configuration for that station and what action was taken if they are out-of-sync. If the station and application are out-of-sync, the ProBatch icon in the Network Overview has a red X through it

Last Batch Monitor

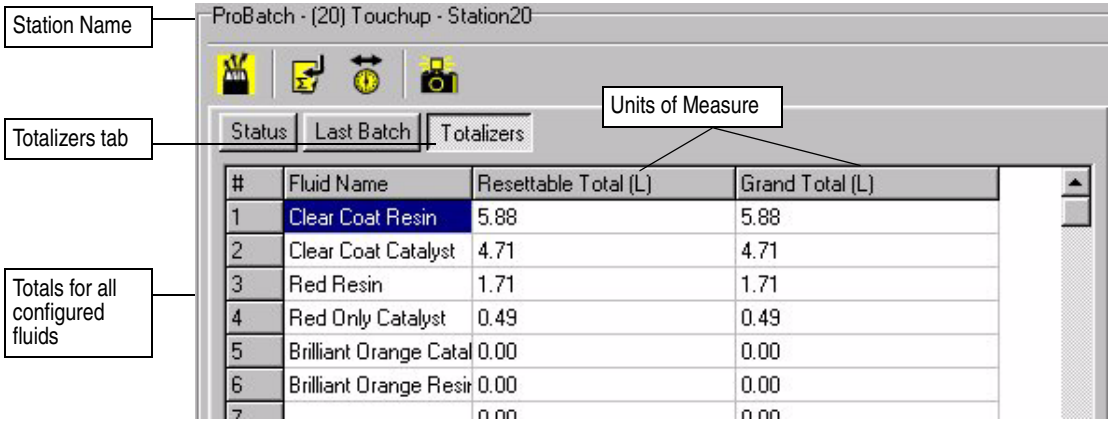
The Last Batch monitor displays information about the last batch dispensed. The information in the table can be printed to the Windows default printer by clicking the Print button.



The PrecisionView AMR's Last Batch and Totalizers screens closely match the Last Totals and All Totals screens on the ProBatch station's User Interface.

Totalizers Monitor

The Totalizers monitor displays resettable totals and grand totals for all the fluids configured for the selected ProBatch station.



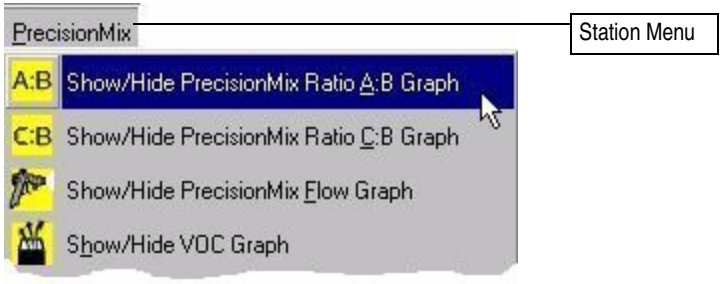
You cannot print the Totalizers table from this screen but it appears in the Totalizer Snapshot report, where it can be printed.

Performance Graphs

The performance graphs appear in windows, outside the main application window. A station must be selected in the Network Overview and the station must be online to view the performance graphs. Which graphs are available depend on the type of station selected.

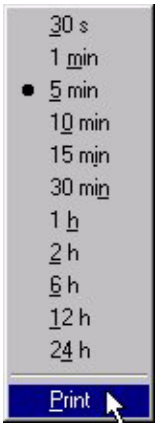
Opening Performance Graph Window

Select the desired graph from the station (PrecisionMix, ProBatch, or Informer) menu or from the station's toolbar.



Performance Graphs

Toolbar Button	Performance Graph Name	Available for:			
			2K	3K	
A:B	Ratio A:B		✓	✓	
C:B	Ratio C:B			✓	
	Flow	✓	✓	✓	
	VOC	✓	✓	✓	✓



To print a graph:

Right-click on the graph and select the Print command from the menu to print to the default printer.

To change the x-axis time range:

Right click on the graph and choose the desired time range from the menu. Possible ranges are from 30 seconds up to 24 hours. The default setting is five minutes. The X-axis advances every 15 seconds so the current value is always visible.

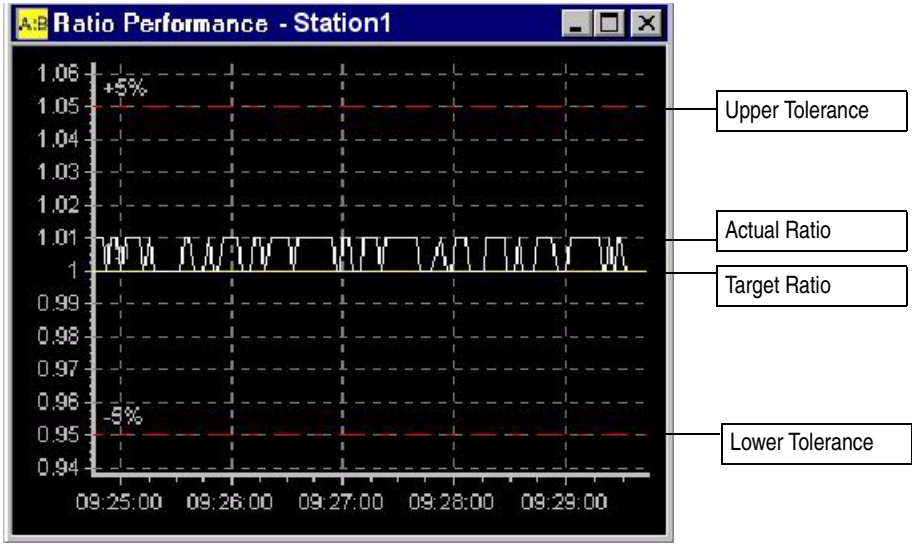
Ratio Performance Graph

PrecisionMix Station

The A:B and C:B (3K only) Ratio performance graphs indicate how well the PrecisionMix station selected in the Network Overview is maintaining the component mix ratio for the active recipe.

To read the graph:

- Solid yellow line = Target ratio
- White line = Actual ratio
- Dotted red lines with % = Tolerance range



Actual ratios are only graphed while the PrecisionMix station is mixing. If the system is not mixing, "Not Mixing" will appear next to the Target Ratio.

Flow Performance Graph

The Flow performance graph is available for both the PrecisionMix and Informer stations, however, the function of the graph is different.

PrecisionMix Station

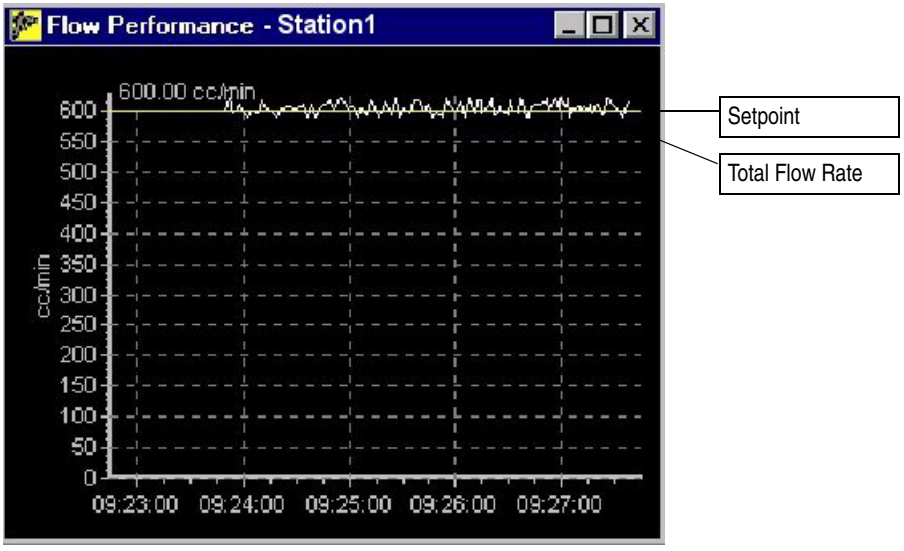
The Flow performance graph indicates how well the PrecisionMix station is controlling the gun flow rates. Flow control must be active for the graph to have data.

To read the graph:

If flow control is active,

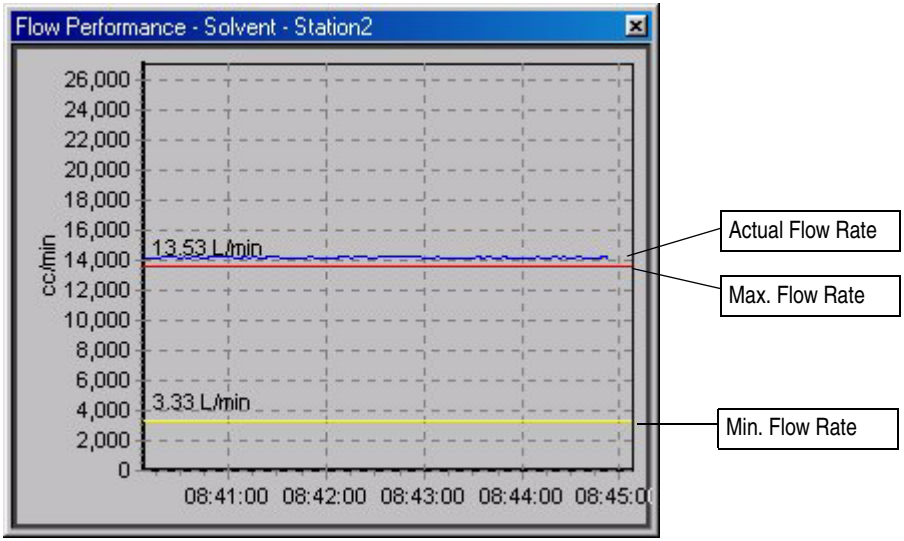
- Solid yellow line = Setpoint of one gun or combined setpoints of two guns
- White line = Total flow rate of two guns

If flow control is not active, the graph displays the stations combined flow output.



Informer Station

The Flow performance graph shows the flow rate of the Informer station.



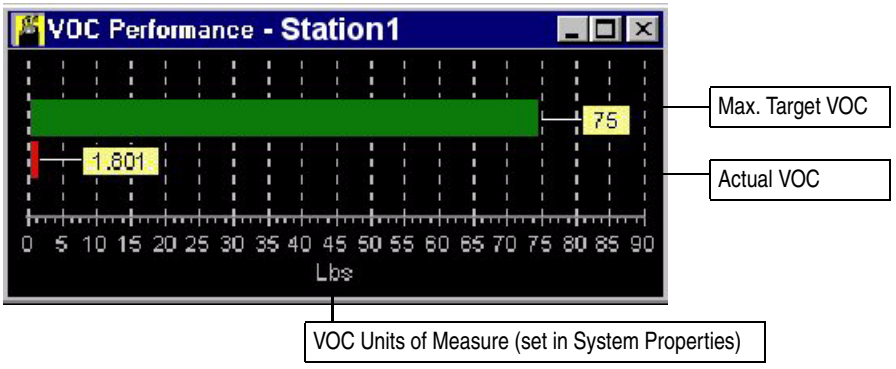
To read the graph:

- Solid yellow line = Minimum flow rate
- Solid red line = Maximum flow rate
- Blue line = Actual flow rate

VOC Performance Graph

The VOC performance graph provides a month-to-date graph of VOC actual versus target emissions. Actual VOC emissions are updated continuously. The VOC graph is available and performs the same way for all stations.

VOC conversion factors must be entered in the Master Fluid List to graph VOC performance.



To read the graph:

- Top green bar = Maximum monthly target quantity of VOC for the station
- Bottom red bar = Actual VOC for jobs completed for the station

Reset Commands

Depending on which station is selected in the Network Overview, station commands are available to reset certain station totals, synchronize clocks, and take a totalizer snapshot. Because these commands affect the physical station selected, the station must be online to use them.

A warning will appear asking you to confirm the reset. Click Yes in the dialog box to confirm and apply the reset.

PrecisionMix Reset Commands

If a command affects a PrecisionMix station that has a password, the Enter Password dialog box appears. The password must be entered before the command can be executed. Each PrecisionMix station may have a different password.

Reset Job

This command resets the *active recipe's job totals* of the PrecisionMix station selected in the Network Overview. It also logs the data for completed jobs into the database and logs the reset event into the Alarm and Evens Log.

To reset the PrecisionMix job totals:

1. Click the PrecisionMix Station in the Network Overview.
2. Select PrecisionMix ➤ Reset Job from the menu bar or click the Reset Job button on the PrecisionMix toolbar.
3. If a password is requested, enter the four digits and click OK.

Reset Batch

This command resets batch totals of the *active recipe* of the PrecisionMix station selected in the Network Overview. It also logs the event in the database and Alarm and Event Log for the station and takes a Totalizer Snapshot.

To reset the PrecisionMix station's active recipe batch totals:

1. Click the PrecisionMix station in the Network Overview.
2. Select PrecisionMix ➤ Reset Batch from the menu bar or click the Reset Batch button on the station toolbar.
3. If a password is requested, enter the four digits and click OK.

Reset Batch for all Recipes

This command resets batch totals of *all recipes* configured for the PrecisionMix station selected in the Network Overview. It also logs the event in the database and Alarm and Event Log for the station and takes a Totalizer Snapshot.

To reset the PrecisionMix station's batch totals for all its recipes:

1. Click the PrecisionMix station in the Network Overview.
2. Select PrecisionMix ➤ Reset Batch for all Recipes from the menu bar or click the Reset Batch for all Recipes button on the station toolbar.
3. If a password is requested, enter the four digits and click OK.

Informer Station Reset Commands

Reset commands are only available for an Informer station if the "Enable Remote Totalizer Reset" check box is selected in the Informer Station Properties dialog box.

Reset Batch

This command resets the batch totals of the Informer station selected in the Network Overview. It also logs the event and the batch amount in the database, logs the event in the Alarm and Event Log for the station, and takes a Totalizer Snapshot.

To reset the Informer batch totals:

1. Click the Informer station in the Network Overview.
2. Select Informer ➤ Reset Batch from the menu bar or click the Reset Batch button on the station toolbar.

Reset Maintenance

This command resets the maintenance schedule of the Informer station selected in the Network Overview. It also logs the event in the Alarm and Event Log for the station and takes a Totalizer Snapshot. (This value is not logged to the database.)

To reset the Informer maintenance schedule:

1. Click the Informer station in the Network Overview.
2. Select Informer ➤ Reset Maintenance from the menu bar or click the Reset Maintenance button on the Informer toolbar.

Reset Informer Totalizers

This command is different than the other reset commands in that it can apply to one or more Informer stations, an Informer station does not need to be selected in the Network Overview, and the command is always available on the menu bar and main toolbar (as long as at least one Informer station is online).

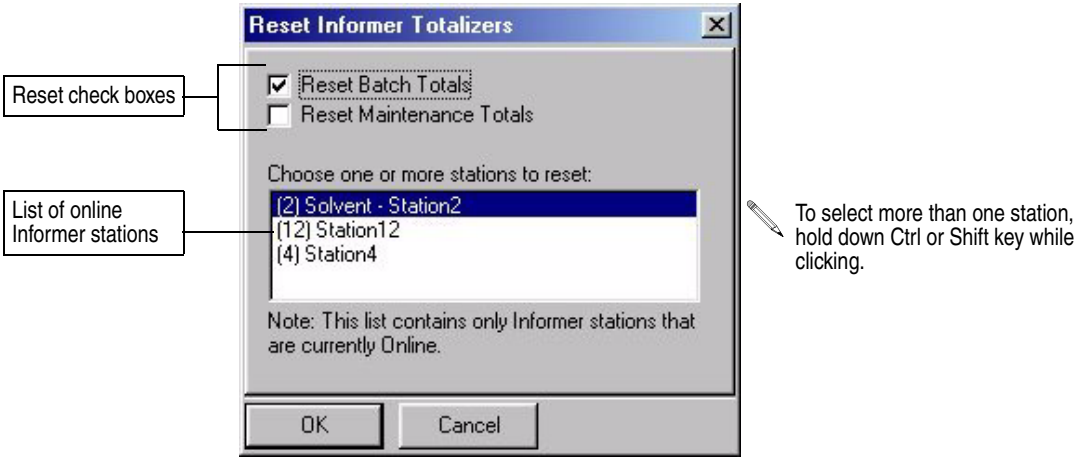
The Reset Informer Totalizers command opens a dialog box, which allows you to select one or more Informer stations from a list of stations currently online and reset their batch and/or maintenance totals. The command also logs the event and the batch amount for each batch totalizer in the database, logs the event in the Alarm and Event Log for the station, and takes a Totalizer Snapshot.

To reset one or more Informer totalizers:

1. Select Tools ➤ Reset Informer Totalizers from the menu bar or click the Reset Informer Totalizers button on the station toolbar.

2. In the dialog box, click the Reset Batch Totals and/or Reset Maintenance Totals check box. Select the station(s) you want to reset from the list.

3. Click OK.



ProBatch Station Reset Command

Reset Totals

This command resets the ProBatch resettable totals, which indicate the total amount of each fluid dispensed since the last reset. The Reset Totals command also logs the event in the Alarm and Event Log for the station and takes a Totalizer Snapshot.

To reset the ProBatch totals:

1. Click the ProBatch station in the Network Overview.

2. Select ProBatch ➤ Reset Maintenance from the menu bar or click the Reset Totals button on the ProBatch toolbar.

Synchronize Clocks


This command is available for PrecisionMix and ProBatch stations only. The PrecisionView application time stamps all data activities, using the PrecisionView computer clock.

The Synchronize Clock command sends the computer date and time to the selected PrecisionMix or ProBatch Station. If the clocks are not synchronized, the PrecisionView application and the physical station(s) will operate, but the time stamps for the alarm events displayed on the application and station(s) may differ. The Synchronize Clock command must be repeated for each PrecisionMix and ProBatch station on the network.

To synchronize the clocks:

1. Click the PrecisionMix or ProBatch station in the Network Overview.

2. If a password is requested for a PrecisionMix station, enter the four digits and click OK.

3. Select PrecisionMix or ProBatch ➤ Synchronize Clock or click the Synchronize Clock button on the station toolbar.

   The computer, PrecisionView application, and station clocks will synchronize to the computer time.

Your computer may automatically adjust for daylight savings time when it occurs. You will need to synchronize the clocks again as the stations do not automatically make this adjustment.

Totalizer Snapshot

The Totalizer Snapshot command does not affect the physical station.

The PrecisionView application automatically records totalizer snapshots (station data) when certain functions occur. See Section 7, **Reporting Data**, for more information.

You can manually take a totalizer snapshot so the latest station totals are recorded in the database. This is useful If you are accessing the PrecisionView database directly (outside of the PrecisionView application) to create custom reports. The Totalizer Snapshot command is available for all station types.

To take a totalizer snapshot:

1. Click the station in the Network Overview.

2. Select PrecisionMix, ProBatch, or Informer ➤ Snapshot from the menu bar or click the Totalizer Snapshot button on the station toolbar.

Alarm and Event Log

The Alarm and Event Log appears at the bottom of the main application window. The log is filtered based on the following conditions:

- The object selected on the Network Overview

  If the Application is selected, all alarms are shown.

  If a Network, Folder or Station is selected, only alarms pertaining to the station or the stations under the Network or Folder are shown.
- The item(s) checked on the Log ➤ Filter Source list
- The item(s) checked on the Log ➤ Filter Time menu
- The chronological order of the entries, with the most recent event appearing at the top of the list

Whenever an alarm or event occurs, the entries include the following information:

- Date and time of the entry
- Source of the message

  A — Alarm/event generated by the PrecisionView AMR application
  U — Log message entered by the user
  P — PrecisionMix station alarm/event
  I — Informer station alarm/event
  B — ProBatch station alarm/event
- Station identity
- Fluid identity (if applicable)
- Recipe identity (if applicable)
- Message
- Alarm Value (if applicable)

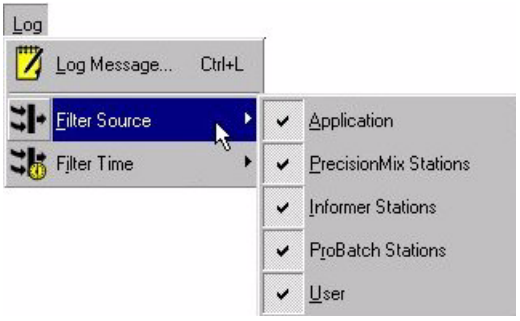
The Alarm and Event Log displays messages from the past week. To view messages older than one week, click Reports ➤ Alarms and Events.

Filtering Log Messages by Source

The information the log displays can be changed by filtering the source of the alarm or event messages.

1. Select Log ➤ Filter Source from the menu bar.

2. Clear or add checkmark(s) to determine which alarm or event sources the application displays messages from. By default, all sources are selected.



The following table shows possible sources of an alarm or event message.

Source	Description
A = Application	Alarm/event generated by the PrecisionView application
U = User	Log message entered by the user
P = PrecisionMix station	PrecisionMix station alarm/event
I = Informer station	Informer station alarm/event
B = ProBatch station	ProBatch station alarm/event

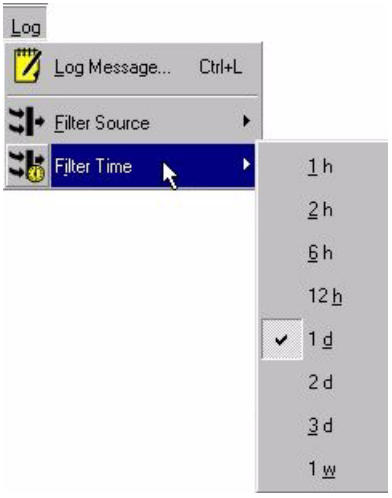
Filtering Log Messages by Time

By default, the log only displays messages for events that have occurred within the last 24 hours (1 d).

To change this time range:

1. Select Log ➤ Filter Time from the menu bar.

2. Choose the desired setting.



The date and time formats displayed are based on the computer's regional settings. To change the format you will need to modify those settings.

Manually Entering Log Messages

To manually enter a user-defined log message into the permanent log history:

1. Select Log ➤ Log Message from the menu bar.

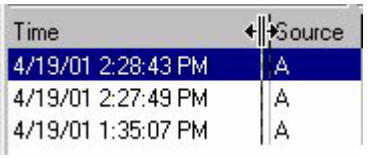
2. Enter up to 100 characters and press OK. The message is entered into the log with a source of “U”, along with information on the current selection in the Network Overview window.

Customizing the Alarm and Event Log Display

The order and size of the Alarm and Event Log columns can be changed.

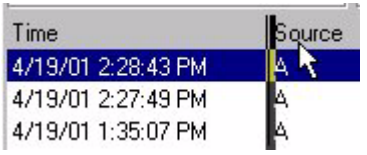
Sizing Columns

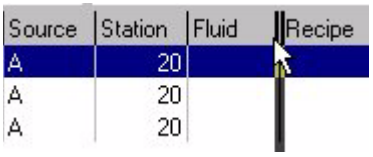
1. Select a column line in the top heading section.
2. Drag the line to the desired size.



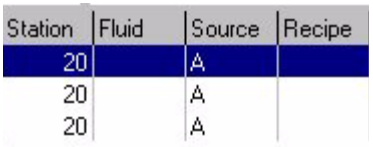
Moving Columns

1. Select inside the column you want to move.
2. Hold the right mouse button down and drag the column to the desired position.





In the example, the Source column was moved in front of the Alarm or Event column.



SECTION
7

Reporting Data

Data Collection

Once communication is established with the stations, the PrecisionView application continuously updates the PrecisionView database (PViewAMR2.mdb) with “snapshot” and event information. The database is updated on an event basis, such as when a job completes or the active recipe is changed. This historical information can be filtered and reported on such topics as job production and HAP usage.

In order to prevent the database from growing too large, you can move old data into an archive file to store on another device. If it becomes necessary to recover this data, the PrecisionView application can restore the data from the archive file back into the database. See **Archiving Production Data**, page 132.

*Configuration data will not be backed up when archiving; it must be backed up separately. See **Backup PrecisionView Configuration**, page 21.*

Open Database Connectivity

The PrecisionView AMR 2.0 database (PViewAMR2.mdb) is available to Open Database Connectivity Compliant (ODBC) clients. The ODBC data source name is **PViewAMR2_ODBC**. Refer to **Appendix A: Database Tables**, page 136.

PrecisionView Reports

The PrecisionView application outputs the following reports:

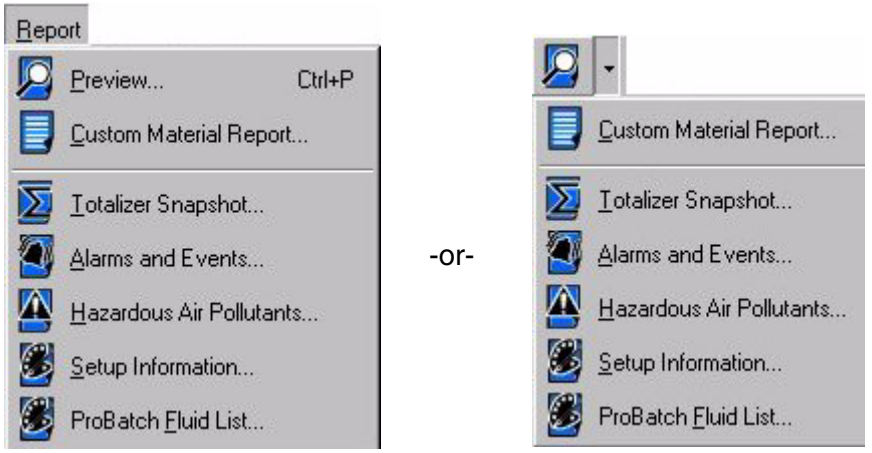
Custom Report		
	**Custom Material**	This report can be customized with a number of criteria to list in detail or summary a history of fluids dispensed.
Predefined Reports		
	**Totalizer Snapshot**	Lists the last known fluid resettable totals, batch totals, and grand totals for the station selected or station(s) under the object selected.
	**Alarms and Events**	Lists alarms and events, including the associated station, recipe, and value, for the sources selected in the Report Criteria.
	**Hazardous Air Pollutants**	A detail and summary report of HAPs produced is available. Detail report lists all sources of each hazardous air pollutant. Summary report lists total amount of each hazardous air pollutant.
	**Setup Information**	Lists breakdown of all mix and waste components and their constituents, hazardous air pollutants, recipes, and stations configured in the PrecisionView application.
	**ProBatch Fluid List**	This selection only appears when a ProBatch station is selected or one or more ProBatch stations exist under the selected object in Network Overview. The report displays fluids that are in use (specific gravity is greater than 0) for one or more ProBatch stations.

The Custom Material Report outputs information according to the criteria selected in the query.

In Predefined Reports, information is output from the PrecisionView database and is reported for the station selected or for the station(s) under the application, network, or folder selected in the Network Overview pane.

Manually Generating Reports

All reports can be manually generated by selecting the desired report from the Report menu or Report button.



Except for Setup Information and ProBatch Fluid List reports, you need to select report criteria to designate the report parameters.

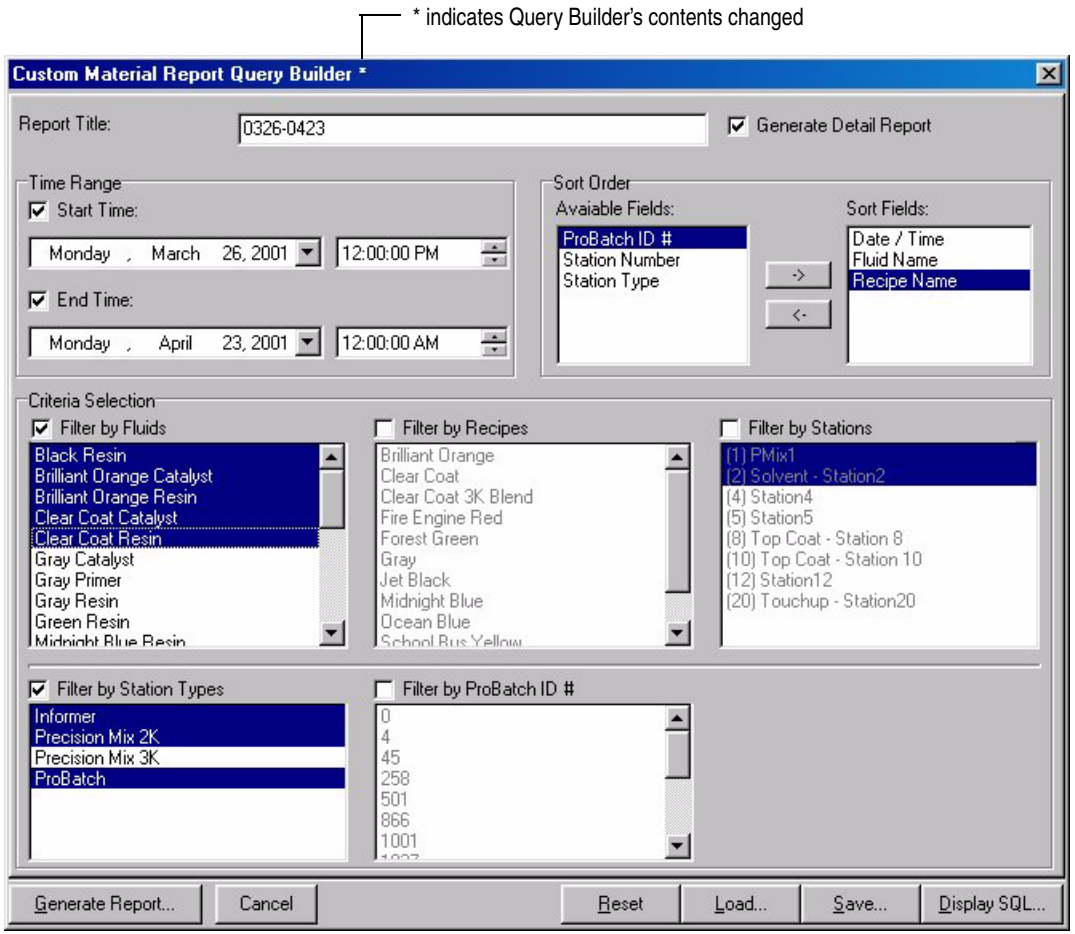
If applying the values set in the Report Criteria dialog box results in no information, the report is blank and the print preview is empty.

Totalizer Snapshot, Alarms and Events, and Hazardous Air Pollutants reports can be generated from the command line while the Precision-View application is running. Refer to ***Automatically Generated Reports****, page 130, and* ***Appendix B: Command Line Parameters****, page 158.*

Custom Material Report

To create a Custom Material Report:

1. Select Custom Material from the Report menu or Report button.
2. Custom Material Report Query Builder dialog box appears.



3. Type a meaningful name in the Report Title text box.

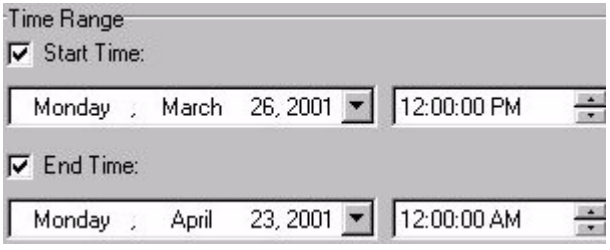
4. Click to select (check) or clear Generate Detail Report check box.

   - If the check box is checked, details about each individual batch/job and the fluids dispensed during those batches/jobs appears on the report. The report may be several pages long.

   - If the check box is cleared, a summarized fluid total and VOC total appears on a one page report.

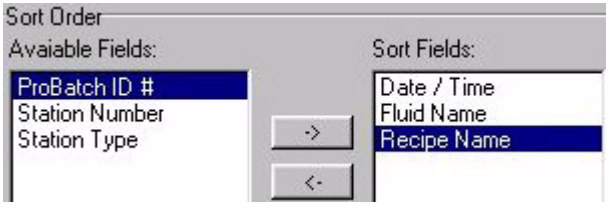
5. Select the Start Time from the date and time lists, or clear the Start Time check box to consider all past history in the database, up to the end time.

6. Select the End Time from the date and time lists, or clear the check box to consider all values up to and including the present.



Clearing both Start and End Time check boxes will produce a report that includes all the information in the database.

7. Sort Order allows you to specify how the Detail section of the report will sort. You can select some or all of the fields in the Available Fields list. The order that the fields are selected and appear in the Sort Field, is the order they will appear on the report.



- To select fields to use for sorting, click a field in the Available Fields list, then click the > button to move it to the Sort Fields list.

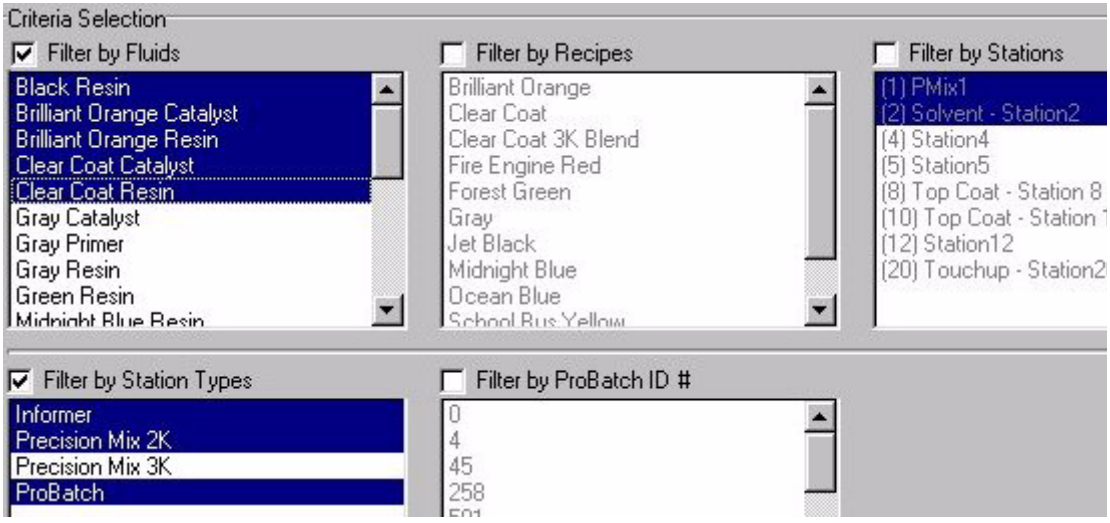
- To remove a field from the Sort Fields list, select it and click the < button.

8. Criteria selection allows you to specify criteria to use to limit records included in the report. For example, if 'Filter by Fluids" check box is checked, only fluids selected in the Filter by Fluids list are included in the report. If Filter by Fluids check box is not checked, then fluids are not used as a criteria. If none of the criteria are selected, data for all fluids, recipes, stations, station types, and ProBatch stations will be included in the report.

   To select report criteria:

   a. Select the check box(es) of the desired criteria.

   b. Select all Filter list items that you want included in the report for each criteria selected.



9. Click Generate Report button to generate the report and view it in the Report Preview window.

Besides Generate Report, other commands available in the Query Builder include:

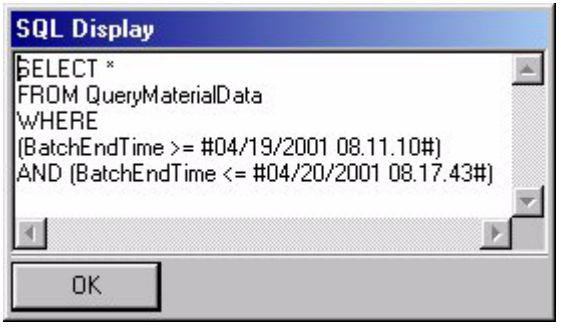
- **Cancel —** Click Cancel button to close the Query Builder without generating a report. A dialog box will appear, asking if you want to save the query configuration. Even if you choose not to save the query, Query Builder will retain its current settings.

- **Reset —** Click Reset button to reset all Query Builder settings.

- **Load —** Click Load button to select and open a previously saved Custom Material report configuration from the Open File dialog box.

- **Save —** Click Save button to save the current Custom Material report configuration from the Open File dialog box. It is useful to Save configurations, to Load at another time, if you frequently generate the same report.

- **Display SQL —** Click Display SQL button to display the SQL statement generated by the PrecisionView application. This statement can be used to retrieve database records for the current Custom Material report.

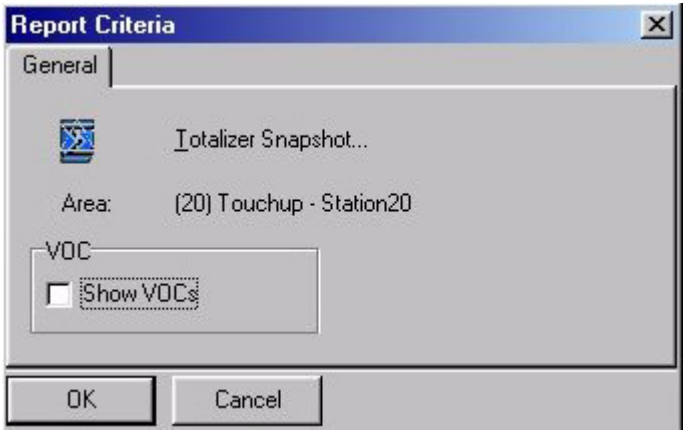


Totalizer Snapshot Report

To create a Totalizer Snapshot Report:

1. Select Totalizer Snapshot from the Report menu or Report button.

2. Report Criteria dialog box appears.



3. Click the VOC check box to select or deselect showing a VOC column on the report.

The VOCs in the report will be calculated based on the snapshot's totalizer values, shown in the report's batch totalizer column. In other reports, the PrecisionMix VOCs are calculated based on jobs; all other device's VOCs are calculated based on batches.

4. Click OK to generate the report and view it in the Report Preview window.

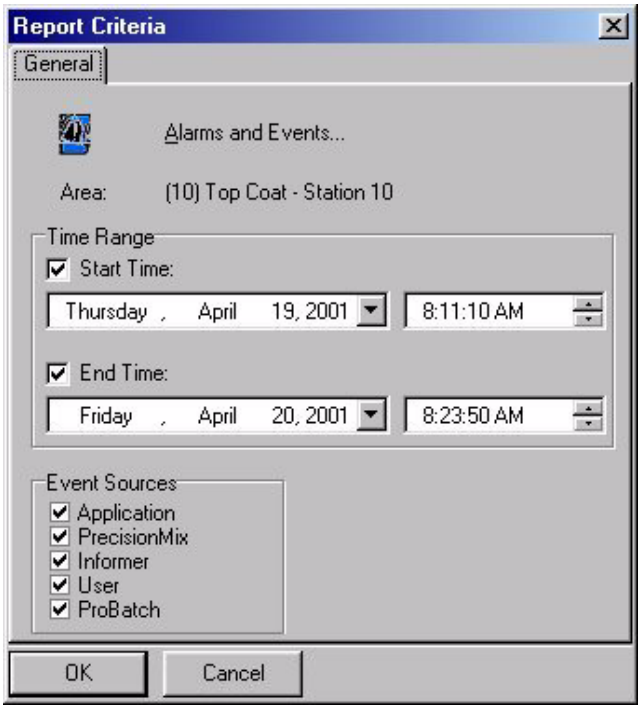
Alarms and Events Report

To create an Alarms and Events Report:

1. Select Alarms and Events from the Report menu or Report button.

2. Report Criteria dialog box appears. Select the Start Time from the date and time lists, or clear the Start Time check box to consider all past history in the database, up to the end time.

3. Select the End Time from the date and time lists, or clear the check box to consider all values up to and including the present.



4. Click the desired Event Sources check boxes to select or deselect the sources to report from.

5. Click OK to generate the report and view it in the Report Preview window.

Hazardous Air Pollutants Report

To create a Hazardous Air Pollutants Report:

1. Select Hazardous Air Pollutants from the Report menu or Report button.

2. Report Criteria dialog box appears. Select the Start Time from the date and time lists, or clear the Start Time check box to consider all past history in the database, up to the end time.

3. Select the End Time from the date and time lists, or clear the check box to consider all values up to and including the present.

4. Click Detail or Summary to select the report scope.

5. Click OK to generate the report and view it in the Report Preview window.

Setup Information

To create a Setup Information Report:

Select Setup Information from the Report menu or Report button to generate the report and view it in the Report Preview window.

There is no report criteria to complete.

ProBatch Fluid List

To create a ProBatch Fluid List Report:

Select ProBatch Fluid List from the Report menu or Report button to generate the report and view it in the Report Preview window.

There is no report criteria to complete.

Report Preview window

Select Preview from Report menu or toolbar to open the Print Preview window without generating a report. You can use the window to view a previously saved QuickReport file.

Generated reports open in the Report Preview window. Sample reports are shown on the following pages. The toolbar in the report preview has the following buttons.

	**Arrows**	Click Arrow buttons to page through a multiple page report.
	**Zoom**	Click Zoom buttons to zoom to fit, 100%, or to width of window.
	**Printer Setup**	Click Printer Setup button to change printer settings.
	**Print**	Click Print button to send report to default printer.
	**Save Report**	Click Save Report button to save to file. Reports may be saved unaltered in custom QuickReport format, which can be reloaded into the Preview window, or as plain text, comma-delimited, HTML, Excel, or RTF to use with other programs.
	**Load Report**	Click Load Report button and select QuickReport file to open.
	**Close window**	Click Close button to close Report Preview window.

Report Samples

Custom Material Report

Summary

0326-0423 1

4/24/01 10:51:35 AM

Custom Material Report - Criteria

Start Date/Time: 3/26/01 12:00:00 PM
End Date/Time: 4/23/01

Sort Order: Date / Time, Fluid Name, Recipe Name

Fluid Filter	Recipe Filter	Station Filter	Station Type Filter	ProBatch ID # Filter
Black Resin Brilliant Orange Catalyst Brilliant Orange Resin Clear Coat Catalyst Clear Coat Resin	(ALL)	(ALL)	Informer Precision Mix2K ProBatch	(ALL)

Custom Material Report - Summary Results

Total Fluid Volume: 2.81 L

Total VOC's: 0.39 Lbs

Detail

0326-0423 4/24/01 10

Custom Material Report - Detail Results

Fluid Name	End Date/Time	Station	Station Type	Pro Batch ID#	Recipe Name	Job / Batch Volume (L)	VOC Factor (Lbs/L)	Job /
Clear Coat Catalyst	4/19/01 12:18:58 PM	(20) Touchup-	ProBatch	8642	Clear Coat	0.22	0.198	
Clear Coat Resin	4/19/01 12:18:58 PM	(20) Touchup-	ProBatch	8642	Clear Coat	0.22	0.079	
Clear Coat Catalyst	4/19/01 12:29:06 PM	(20) Touchup-	ProBatch	6333	Clear Coat	0.25	0.198	
Clear Coat Resin	4/19/01 12:29:06 PM	(20) Touchup-	ProBatch	6333	Clear Coat	0.23	0.079	
Clear Coat Catalyst	4/19/01 12:30:25 PM	(20) Touchup-	ProBatch	501	Clear Coat	0.25	0.198	
Clear Coat Resin	4/19/01 12:30:25 PM	(20) Touchup-	ProBatch	501	Clear Coat	0.24	0.079	
Clear Coat Catalyst	4/19/01 12:35:21 PM	(20) Touchup-	ProBatch	866	Clear Coat	0.33	0.198	
Clear Coat Resin	4/19/01 12:35:21 PM	(20) Touchup-	ProBatch	866	Clear Coat	0.33	0.079	
Clear Coat Catalyst	4/19/01 12:36:38 PM	(20) Touchup-	ProBatch	1001	Clear Coat	0.14	0.198	
Clear Coat Resin	4/19/01 12:36:38 PM	(20) Touchup-	ProBatch	1001	Clear Coat	0.13	0.079	
Clear Coat Catalyst	4/19/01 12:39:02 PM	(20) Touchup-	ProBatch	1001	Clear Coat	0.24	0.198	
Clear Coat Resin	4/19/01 12:39:02 PM	(20) Touchup-	ProBatch	1001	Clear Coat	0.24	0.079	
				Total Fluid Volume:		2.81	Total VOC's:	

Totalizer Snapshot Report

Totalizer Snapshot 1
Area: Touchup - Station20 4/19/01 3:13:05 PM

ProBatch Stations

Station: (20) Touchup - Station20

Fluid	Resettable Total (L)	Grand Total (L)	Resettable VOC Total (Lbs)
1 - Clear Coat Resin	5.88	5.88	0.46
2 - Clear Coat Catalyst	4.71	4.71	0.93
3 - Red Resin	1.71	1.71	0.15
4 - Red Only Catalyst	0.49	0.49	0.08
5 - Brilliant Orange Catalyst	0.00	0.00	0.00
6 - Brilliant Orange Resin	0.00	0.00	0.00

Alarms and Events Report

Alarms and Events
Area: Touchup - Station20
4/18/01 1:32:46 PM - 4/19/01 3:17:35 PM

Station: (20) Touchup - Station20

Time	Source	Recipe	Fluid	Message
4/19/01 2:28:43 PM	A			Synchronized station clock with PC clock
4/19/01 2:27:49 PM	A			ProBatch station and AMR configuration mismatch
4/19/01 1:35:07 PM	A			ProBatch station and AMR configuration mismatch
4/19/01 1:35:06 PM	A			Station connection made
4/19/01 1:34:57 PM	A			Station connection lost
4/19/01 1:33:19 PM	A			Station connection made
4/19/01 12:48:51 PM	A			Station connection lost
4/19/01 12:47:27 PM	A			Station connection made
4/19/01 12:45:53 PM	A			Station connection lost
4/19/01 12:45:43 PM	A			Station connection made
4/19/01 12:43:57 PM	A			Station connection lost
4/19/01 12:27:28 PM	A			ProBatch station and AMR configuration mismatch
4/19/01 12:15:02 PM	A			Station connection made

Hazardous Air Pollutants Report

Hazardous Air Pollutant Source Detail Information 1
Area: Serial Network
4/19/01 8:11:10 AM - 4/20/01 8:27:07 AM 4/20/01 8:27:10 AM

Material Name: **MEK**
Manufacturer Part #: H3-MP12345
Internal Part #: Int-H3-MP12345

PrecisionMix Stations

Station	Recipe	Fluid	Fluid Total	Composition	HAP Total
(8) Top Coat - Station 8	School Bus Yellow	Std. Color	0.12 L	7%	0.01 L
(8) Top Coat - Station 8	School Bus Yellow	Solvent Blend 1	0.49 L	25%	0.12 L
(8) Top Coat - Station 8	School Bus Yellow	Solvent No. 2	0.22 L	99.9%	0.22 L
(8) Top Coat - Station 8	Clear Coat 3K Blend	Clear Coat Resin	1.56 L	12.5%	0.20 L
(8) Top Coat - Station 8	Clear Coat 3K Blend	Solvent Blend 1	2.87 L	25%	0.72 L
(8) Top Coat - Station 8	Clear Coat 3K Blend	Clear Coat	0.78 L	3%	0.02 L
(8) Top Coat - Station 8	Jet Black	Std. Color	0.48 L	7%	0.03 L
(8) Top Coat - Station 8	Jet Black	Solvent Blend 1	2.43 L	25%	0.61 L
(8) Top Coat - Station 8	Jet Black	Solvent No. 2	0.27 L	99.9%	0.27 L
(8) Top Coat - Station 8	Brilliant Orange	Solvent Blend 1	1.01 L	25%	0.25 L
(8) Top Coat - Station 8	Brilliant Orange	Solvent No. 2	0.32 L	99.9%	0.32 L

Informer Stations

Station	Fluid	Fluid Total	Composition	HAP Total
(2) Solvent - Station2	Solvent No. 2	75.70 L	99.9%	75.63 L
(4) Station4	Solvent No. 2	79.48 L	99.9%	79.41 L

ProBatch Stations

Station	Recipe	Fluid	Fluid Total	Composition	HAP Total
(20) Touchup - Station20	Fire Engine Red	Red Resin	2.03 L	13.5%	0.27 L
(20) Touchup - Station20	Clear Coat	Clear Coat Resin	1.38 L	12.5%	0.17 L
(20) Touchup - Station20	Fire Engine Red	Red Only	0.63 L	13%	0.08 L
(20) Touchup - Station20	Clear Coat	Clear Coat	1.42 L	3%	0.04 L

Total For All Stations: **158.36 L**

Setup Information Report

Setup Information 1

4/20/01 8:35:05 AM

Master Fluid List

Component Name	Manufacturer Name	Manufacturer Part #	Internal Part #	VOC Conversion Factor
Red Resin	ABC Coatings, Inc.	Red-M1-123	Int-Red-M1	0.085 Lbs/L
	HAP Constituent	**Composition**		
	MEK	13.50%		
	Toluene	11.50%		
Midnight Blue Resin	ABC Coatings, Inc.	Blue-M1-456	Int-Blue-M1	0.088 Lbs/L
	HAP Constituent	**Composition**		
	MEK	12.00%		
	Toluene	18.00%		
Yellow Resin	ABC Coatings, Inc.	Yellow-M1-789	Int-Yellow-M1	0.085 Lbs/L
	HAP Constituent	**Composition**		
	Toluene	8.00%		
	EthylBenzine	2.00%		
Green Resin	ABC Coatings, Inc.	Green-M1-012	Int-Green-M1	0.085 Lbs/L
	HAP Constituent	**Composition**		
	Toluene	25.00%		
	Benzine	3.00%		
	Glycol	10.00%		

ProBatch Fluid List Report

ProBatch Fluid List 1
Area: Serial Network 4/20/01 8:36:44 AM

Station: (20) Touchup - Station20

Fluid #	Fluid Name	Manufacturer	Manufacturer Part #	Internal Part #
1	Clear Coat Resin	Clear Coats Unlimited, Inc.	Clear-M2-234	Int-Clear-M8
2	Clear Coat Catalyst	SWY-Cat-Mfgr	SWY-012	Int-SWY-012
3	Red Resin	ABC Coatings, Inc.	Red-M1-123	Int-Red-M1
4	Red Only Catalyst	OPR-Cat-Mfgr	OPR-789	Int-OPR-789
5	Brilliant Orange Catalyst	XYZ Fluids	6676	7767
6	Brilliant Orange Resin	XYZ Fluids	9876	6789

Automatically Generated Reports

Except for Setup Information and ProBatch Fluid List reports, the reports can be generated from a command line, using the parameters specified in Appendix B. Reports can be scheduled for automatic output to either a file or a printer, using Windows Task Scheduler.

To schedule a report with the Windows Task Scheduler:

1. On your Windows desktop or in Windows Explorer, open My Computer.

2. Open Scheduled Tasks system folder.

3. Open “Add Scheduled Task”.

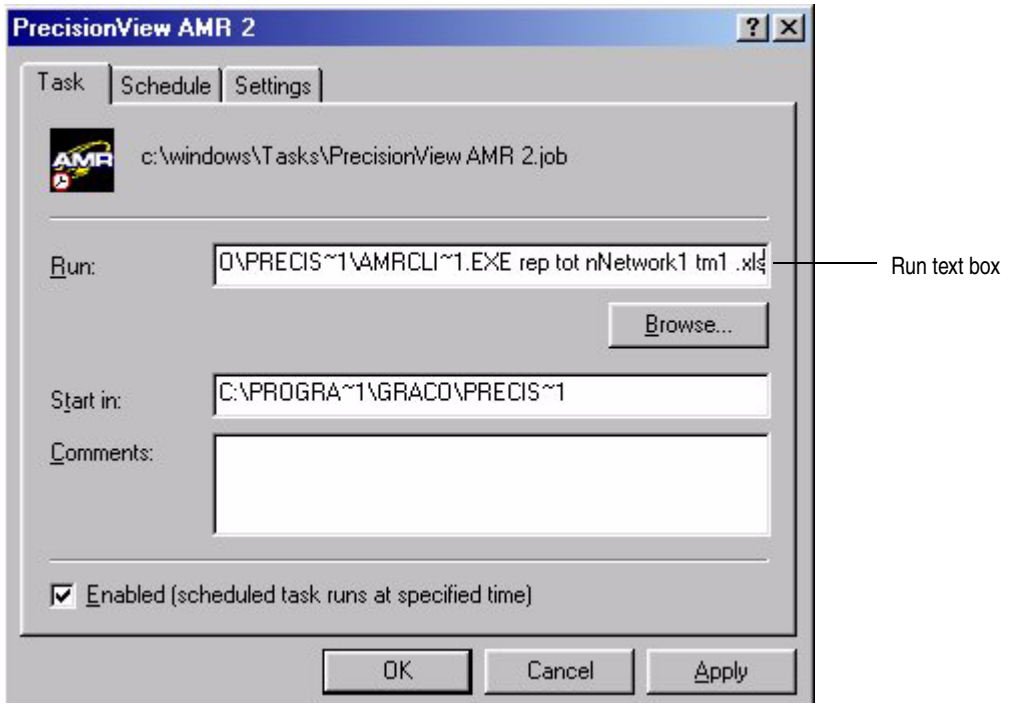
4. Scheduled Task Wizard opens and guides you through task setup.

    a. Select the PrecisionView AMR 2.0 application from the list of shortcuts. If necessary, click Browse button to find it.

    b. Enter a descriptive name for the report and select how often to run it. You may be prompted for further scheduling details.

    c. Click the Open Advanced Properties check box. Click Finish.

d. In the Advanced Properties dialog box, edit the Run text box to include command line parameters for generating the desired report. See **Appendix B: Command Line Parameters**, page 158, on how to correctly enter the Run information.



e. Click OK to apply your changes and close the dialog box.

The scheduled task will run even if the PrecisionView application is not currently gathering data. To suspend a scheduled report, clear the Enabled check box in the Advanced Properties dialog box.

Archiving Production Data

As a backup procedure and to prevent the PrecisionView database from growing too large, the data should periodically (2-4 times/year) be exported to a comma-delimited file and removed from the system. When data is archived, it is physically removed from the database and is not available for viewing in PrecisionView reports. To restore data, follow the instructions for **Restoring an Archive File**, page 133.

Creating an Archive File

1. In the Network Overview, select the station to archive history for or select the application, network, or folder to archive history for all stations under the selected object.

2. Select File ➤ Archive from the menu bar.

3. In the Archive Criteria dialog, select the Start Time from the date and time lists, or clear the Start Time check box to archive all past history in the database, up to the end time.

4. Select the End Time from the date and time lists, or clear the check box to consider all values up to and including the present.

5. Click OK.

6. Save File dialog box appears. Select the drive/directory to save the file to. Enter a name for the file and click Save button to export the history values to the file and remove the data from the database.

The File Archive command backs up production, snapshot and event information only; it does not backup the PrecisionView configuration information. See ***Backup PrecisionView Configuration**, page 21.*

Restoring an Archive File

To recover the archived data, choose File ➤ Restore from the menu bar. Select the desired file from the Open File dialog box and click OK.

Once an archive file is restored to the database, be careful not to repeat the command on the same file. The PrecisionView AMR will not warn you if you are duplicating restored data in the database.

SECTION
8

Appendices

Appendix A: Database Tables

*The PrecisionView AMR 2.0 database name is **PViewAMR2.mdb**. The ODBC data source name is **PViewAMR2_ODBC**.*

The information in Appendix A describes the PrecisionView AMR 2.0 database tables that are available for ODBC client applications.

Name and Description

The database table name appears in the first table row, followed by the table description.

Fields

The rows that follow the name and description describe each field in the table: its name, data type, and a brief description. Data types are standard SQL data types: numeric (LONG or DOUBLE), text (CHAR(*size*)), temporal (TIMESTAMP), and Boolean (YES/NO).

Data types followed by an asterisk (*) indicate the key field(s) for the table. Where there is more than one key field, the table key is a combination of both fields. Additionally, any data type enclosed in square brackets ([…]) indicates that the field is optional, and may contain NULL if not applicable.

Indexes

The remaining rows describe the indexes that are available for sorting and searching each table. An index name followed by an asterisk (*) indicates the key index for the table. Field names separated by semicolons (;) indicate that the index is formed based on the combination of the values in both fields. Field Names enclosed in square brackets ([…]) indicate that duplicate entries may exist for that field. Otherwise, every value in the index must be unique.

Configuration Tables

The following tables contain information used for configuring the PrecisionView application. These tables contain information about the Fluids, Recipes and Stations, and other settings that the user has configured.

HazardousAirPollutants		
This table lists Hazardous Air Pollutants configured by the user.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID
Name	CHAR(50)	Fluid name (must be unique)
MaterialManufacturer	[CHAR(255)]	Manufacturer company name
MaterialManufacturerPart	[CHAR(255)]	Manufacturer's part number
MaterialInternalPart	[CHAR(255)]	Internal part number

Index	Field	Order
PrimaryKey*	PkID	Ascending
Name	Name	Ascending

Components		
This table contains the Master Fluid List – the list of ALL fluids configured by the user.		
Field	**Type**	**Description**
PkID	LONG*	Unique number
Name	CHAR(50)	Fluid name
MaterialManufacturer	[CHAR(255)]	Manufacturer's company name
MaterialManufacturerPart	[CHAR(255)]	Manufacturer's part number
MaterialInternalPart	[CHAR(255)]	Internal part number
VOCFactor	DOUBLE	Component VOC conversion factor (VOC/cc)
SpecificGravity	DOUBLE	Fluid Specific Gravity (only relevant when selected on a Batch Dispense Station)
LastModified	TIMESTAMP	Time of last modification to component

Components		
Index	**Field**	**Order**
PrimaryKey*	PkID	Ascending
Name	Name	Ascending

ComponentHAPConstituents		
This table relates the Fluids in the Components table to the HAPs in the Hazardous Air Pollutants table. It contains information about the HAP composition of those fluids.		
Field	**Type**	**Description**
ComponentPkID	LONG*	Component ID number (from Components table)
HazarousAirPollutantPkID	LONG*	Hazardous air pollutant ID number (from Hazardous Air Pollutants table)
ConstituentComposition	DOUBLE	Percent composition (0 to 100, i.e. 12.5 = 12.5%)

Index	**Field**	**Order**
PrimaryKey*	ComponentPkID; HazardousAirPollutantPkID	Ascending

PrecisionMixRecipes		
This table contains all the PrecisionMix Recipes configured by the user.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID
Name	CHAR(255)	Recipe name (must be unique)
ComponentAPkID	LONG	Fluid ID number (from Components table)
ComponentBPkID	LONG	Fluid ID number (from Components table)
ComponentCPkID	LONG	Fluid ID number (from Components table)
FlushingAgentPkID	LONG	Fluid ID number (from Components table)
DumpTypePkID	LONG	Fluid ID number (from Components table)

Index	**Field**	**Order**
PrimaryKey*	PkID	Ascending
Name	Name	Ascending

LicenseTypes		
Lists the different requirement types for stations supported by PrecisionView application. This table is a static enumeration table and is not affected by the user's configuration.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID
Name	CHAR(255)	Descriptive name of License Type

Index	Field	Order
PrimaryKey*	PkID	Ascending

StationTypes		
Lists the different devices supported by PrecisionView application. Contents are currently 0 (PrecisionMix II 2-K), 1 (PrecisionMix II 3-K), 2 (Informer), 3 (ProBatch). This table is a static enumeration table and is not affected by the user's configuration.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID
Name	CHAR(50)	Station type name
LicenseTypePkID	LONG	License Type ID Number (from License Types table) for the license required by this Station Type

Index	Field	Order
PrimaryKey*	PkID	Ascending

NetworkTypes		
Lists the different types of networks supported by the PrecisionView application. Contents are currently 0 (Serial Network), 1 (TCP/IP Network). This table is a static enumeration table and is not affected by the user's configuration.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID
Name	CHAR(50)	Network type name

Index	Field	Order
PrimaryKey*	PkID	Ascending

Stations		
This table contains all stations configured by the user.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID
Name	CHAR(50)	Descriptive name
StationTypePkID	LONG	Station Type ID number (from StationTypes table)
StationNumber	LONG	Station number as configured on the physical device (Currently, this must be unique for ALL stations configured in the application.)
TargetMaximumVOC	[DOUBLE]	Target maximum daily VOC for station (Must be greater than or less than 0.)
Enabled	YES/NO	True if communication is enabled
FolderPkID	[LONG]	Folder ID number (from Folders table) of the Folder that contains this station
NetworkPkID	LONG	Network ID number (from Networks table) of the Network this station communicates on

Index	Field	Order
PrimaryKey*	PkID	Ascending
StationNumber	StationNumber	Ascending

Folders		
This table contains all folders configured by the user. Folders are used to group stations, but do not affect the operation of the application.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID
Name	CHAR(50)	Descriptive name
NetworkPkID	LONG	Network ID number (from Networks table) of the Network that contains this folder

Index	Field	Order
PrimaryKey*	PkID	Ascending

Networks		
This table contains all Networks configured by the user. A Network determines how all the stations under it will communicate.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID
Name	CHAR(50)	Descriptive name
NetworkTypePkID	LONG	NetworkType ID number (from Networks Types table) that determines the type of this Network

Index	Field	Order
PrimaryKey*	PkID	Ascending
SortOrder	NetworkTypePkID; Name	Ascending

NetworkSerialSettings		
This table contains the communications settings for all Serial Networks configured by the user. There will be one entry in this table for each entry in the Networks table that is a Serial Network.		
Field	**Type**	**Description**
NetworkPkID	LONG*	Network ID number (from Networks table)
PortNumber	CHAR(50)	Serial communications port (i.e. COM1, COM2, etc)
BaudRate	LONG	Baud rate to use for the serial port
InterMessageDelayMsec	LONG	Number of msec to wait between transmitting messages on the serial port
TimeoutMsec	LONG	Timeout in msec for waiting for responses
Retries	LONG	Number of retries to allow for waiting for responses
ReconnectDelaySec	LONG	Number of seconds to wait before attempting to reconnect to stations that have gone offline

Index	Field	Order
PrimaryKey*	PkID	Ascending
SortOrder	NetworkTypePkID; Name	Ascending

NetworkTCPIPSettings		
This table contains the communications settings for all TCP/IP Networks configured by the user. There will be one entry in this table for each entry in the Networks table that is a TCP/IPNetwork.		
Field	**Type**	**Description**
NetworkPkID	LONG*	Network ID number (from Networks table)
TimeoutMsec	LONG	Timeout in msec for waiting for responses
Retries	LONG	Number of retries to allow for waiting for responses
ReconnectDelaySec	LONG	Number of seconds to wait before attempting to reconnect to stations that have gone offline
InterMessageDelayMsec	LONG	Number of msec to wait between transmitting messages on the serial port
IPAddress	CHAR(255)	I.P. address or host name of the CoBox that is used on this network
PortNumber	LONG	TCP/IP port number to use

Index	Field	Order
PrimaryKey*	PkID	Ascending
SortOrder	NetworkTypePkID; Name	Ascending

PrecisionMixStationRecipes		
Identifies the recipes loaded on each PrecisionMix station (only applies to PrecisionMix stations). There will always be 63 entries in this table for each PrecisionMix station configured in the application.		
Field	**Type**	**Description**
StationPkID	LONG*	Station ID number (from Stations table).
SlotNumber	LONG*	Recipe “slot” number (1 to 63).
RecipePkID	[LONG]	Recipe ID number (from PrecisionMixRecipes table). This field will be blank if there is no recipe loaded in this slot.

Index	Field	Order
PrimaryKey*	StationPkID; SlotNumber	Ascending

InformerStationActiveFluid		
Identifies the current fluid being dispensed by each Informer station (only applies to Informer stations). There will always be 1 entry in this table for each Informer station configured by the user.		
Field	**Type**	**Description**
StationPkID	LONG*	Station ID number (from Stations table)
ComponentPkID	LONG	Component ID number (from Components table)
EnableTotalizerReset	YES/NO	Specifies whether or not Station Reset functions are permitted

Index	Field	Order
PrimaryKey*	StationPkID	Ascending

BatchDispenseStationSystemConfig		
This table describes the system configuration of a ProBatch station, as configured by the user. (Only applies to ProBatch stations.) There will always be 1 entry in this table for each ProBatch station configured by the user. There is also a corresponding table named "BatchDispenseStationDeviceSystemConfig", which holds the system configuration stored on the device. This table is only used for synchronization and will not be affected by the user's configuration.		
Field	**Type**	**Description**
StationPkID	LONG*	Station ID number (from Stations table)
Units	LONG	Between 0 and 4
Language	LONG	Between 0 and 4
Stability	LONG	Seconds (>=0)
RecipeMethod	LONG	Between 1 and 2

Index	Field	Order
PrimaryKey*	StationPkID;	Ascending

BatchDispenseStationFluidConfig

This table describes the 1-99 possible fluids that can be loaded on a ProBatch station. (Only applies to ProBatch stations.) There will always be 99 entries in this table for each ProBatch station configured by the user. There is also a corresponding table named "BatchDispenseStationDeviceFluidConfig", which holds the fluid configuration that is stored on the device. This table is only used for synchronization and will not be affected by the user's configuration.

Field	Type	Description
StationPkID	LONG*	Station ID number (from Stations table)
FluidSlotNumber	LONG*	Fluid slot number (1-99)
ComponentPkID	LONG	Component ID number (from Components table).
DispenseTolerance	LONG	Percentage (greater than or equal to zero)
MinimumPressureAirSolenoid	[LONG]	0-4
MaximumPressureAirSolenoid	[LONG]	0-4
SpecificGravity	LONG	Specific Gravity (0-999). Divide by 100 to get the actual specific gravity. A zero in this field means that this fluid is unused on the ProBatch station.

Index	Field	Order
PrimaryKey*	StationPkID; FluidSlotNumber	Ascending

BatchDispenseStationRecipeConfig		
This table describes the 1-250 possible recipe entries that can be loaded on a ProBatch station. (Only applies to ProBatch stations.) There will always be 250 entries in this table for each ProBatch station configured by the user. There is also a corresponding table named "BatchDispenseStationDeviceRecipeConfig", which holds the recipe configuration that is stored on the device. This table is only used for synchronization and will not be affected by the user's configuration.		
Field	**Type**	**Description**
StationPkID	LONG*	Station ID number (from Stations table)
RecipeSlotNumber	LONG*	Recipe slot number (1 to 250)
RecipeName	[CHAR(50)]	Name of this recipe
Step1Fluid	LONG	Fluid number for this step or 0 for pause
Step1Proportion	LONG	Parts of Fluid to be included for this step or length of pause
Step2Fluid	LONG	Fluid number for this step or 0 for pause
Step2Proportion	LONG	Parts of Fluid to be included for this step or length of pause
Step3Fluid	LONG	Fluid number for this step or 0 for pause
Step3Proportion	LONG	Parts of Fluid to be included for this step or length of pause
Step4Fluid	LONG	Fluid number for this step or 0 for pause
Step4Proportion	LONG	Parts of Fluid to be included for this step or length of pause
Step5Fluid	LONG	Fluid number for this step or 0 for pause
Step5Proportion	LONG	Parts of Fluid to be included for this step or length of pause
Step6Fluid	LONG	Fluid number for this step or 0 for pause
Step6Proportion	LONG	Parts of Fluid to be included for this step or length of pause

Index	Field	Order
PrimaryKey*	StationPkID; RecipeSlotNumber	Ascending
RecipeName	StationPkID; RecipeName	Ascending

Settings		
This table holds miscellaneous settings for the PrecisionView application. Items are stored in name/value pairs.		
Field	**Type**	**Description**
Name	CHAR(50)*	Setting Name (must be unique)
Value	CHAR(255)	Setting Value
Index	**Field**	**Order**
PrimaryKey*	SettingName	Ascending

StationSettings		
This table holds miscellaneous setting related to station configured in the application. Items are stored in name/value pairs.		
Field	**Type**	**Description**
StationPkID	LONG*	Station ID number (from Stations table)
Name	CHAR(50)*	Setting Name (must be unique for each station)
Value	CHAR(255)	Setting Value
Index	**Field**	**Order**
PrimaryKey*	StationPkID; Name	Ascending

ServerSettings		
This table holds miscellaneous items that need to be persisted by the AMRDataServerModule.exe component of the PrecisionView AMR application. This table does not contain any user-specific settings. Items are stored in name/value pairs.		
Field	**Type**	**Description**
Name	CHAR(50)*	Setting Name (must be unique)
Value	CHAR(255)	Setting Value
Index	**Field**	**Order**
PrimaryKey*	SettingName	Ascending

EventSources

This table contains the entries that can be used to filter events recorded by PrecisionView application. Contents are currently 0 (PrecisionView AMR application), 1 (User), and 2 (PrecisionMix station), 3 (Informer station), 4 (ProBatch station). This table is a static enumeration table and is not affected by the user's configuration.

Field	Type	Description
PkID	LONG*	Unique ID
Name	CHAR(50)	Event source name

Index	Field	Order
PrimaryKey*	PkID	Ascending

EventDescriptions

This table contains the textual descriptions of all events that can be recorded by PrecisionView application. This table is a static enumeration table and is not affected by the user's configuration.

Field	Type	Description
PkID	LONG*	Unique ID
EventSourcePkID	LONG	Event Source ID Number (from EventSources table)
Description	CHAR(50)	Textual description of the event.

Index	Field	Order
PrimaryKey*	PkID	Ascending
EventType	PkID; EventSourcePkID	Ascending

SnapshotEntryTypes

This table contains a list of reasons that Totalizer Snapshots will be recorded by the PrecisionView application. This table is a static enumeration table and is not affected by the user's configuration.

Field	Type	Description
PkID	NUMBER*	Snapshot entry type ID number.
Name	CHAR(50)	Snapshot entry type name.

Index	Field	Order
PrimaryKey*	PkID	Ascending

Production Information Tables

The following tables contain run-time information and are populated based on real-time data received by the PrecisionView AMR application. This information is later used in conjunction with the configuration information to produce meaningful reports.

TotalizerSnapshots		
Totalizer snapshots are a frozen record of the fluid or recipe totals on a particular station. This table contains the time and reason for the last Totalizer Snapshot taken for a station. For each entry in this table, there will be corresponding entries in station-specific table(s) to hold the actual totalizer data for that station. There is no history kept for Totalizer Snapshots – only the latest snapshot is kept for each station.		
Field	**Type**	**Description**
StationPkID	LONG*	Station ID number (from Stations table)
Time	TIMESTAMP	Time at which the snapshot was taken
SnapshotEntryTypePkID	LONG	Snapshot entry type ID number (from SnapshotEntryTypes table). This describes the reason that the Totalizer Snapshot was recorded.

Index	Field	Order
PrimaryKey*	StationPkID	Ascending
Chronological	Time	Ascending

PrecisionMixTotalizerSnapshotData		
This table holds the latest Totalizer data for PrecisionMix stations. Totalizer data for ALL RECIPES configured on each PrecisionMix station is stored.		
Field	**Type**	**Description**
StationPkID	LONG*	Station ID number (from Stations table)
RecipeSlotNumber	LONG	Recipe slot number (1 to 63) (from PrecisionMixStationRecipes table)
RecipePkID	[LONG]	Recipe ID (from PrecisionMixRecipes table)
ComponentAPkID	[LONG]	Component A ID (from Components table)
ComponentABatchTotal	DOUBLE	Component A batch total (cc)
ComponentAGrandTotal	DOUBLE	Component A grand total (cc)
ComponentBPkID	[LONG]	Component B ID (from Components table)
ComponentBBatchTotal	DOUBLE	Component B batch total (cc)
ComponentBGrandTotal	DOUBLE	Component B grand total (cc)
ComponentCPkID	[LONG]	Component C ID (from Components table)
ComponentCBatchTotal	DOUBLE	Component C batch total (cc)
ComponentCGrandTotal	DOUBLE	Component C grand total (cc)
FlushingAgentPkID	[LONG]	Flushing Agent ID (from Components table)
FlushingAgentBatchTotal	DOUBLE	Flushing Agent batch total (cc)
FlushingAgentGrandTotal	DOUBLE	Flushing Agent grand total (cc)
DumpPkID	[LONG]	Dump ID (from Components table)
DumpBatchTotal	DOUBLE	Dump batch total (cc)
DumpGrandTotal	DOUBLE	Dump grand total (cc)

Index	Field	Order
PrimaryKey*	StationPkID; RecipeSlotNumber	Ascending
ComponentAPkID	ComponentAPkID	Ascending
ComponentBPkID	ComponentBPkID	Ascending

PrecisionMixTotalizerSnapshotData		
ComponentCPkID	ComponentCPkID	Ascending
DumpPkID	DumpPkID	Ascending
FlushingAgentPkID	FlushingAgentPkID	Ascending
RecipePkID	RecipePkID	Ascending

InformerTotalizerSnapshotData		
This table holds the latest Totalizer data for Informer stations.		
Field	**Type**	**Description**
StationPkID	LONG*	Station ID number (from Stations table)
ComponentPkID	LONG*	Component ID number (from Components table)
FluidBatchTotal	DOUBLE	Fluid batch total (cc)
FluidMaintenanceTotal	DOUBLE	Fluid maintenance total (cc)
FluidGrandTotal	DOUBLE	Fluid grand total (cc)
Index	**Field**	**Order**
PrimaryKey*	StationPkID	Ascending
ComponentPkID	ComponentPkID	Ascending

BatchDispenseTotalizerSnapshotFluidData		
This table holds the latest Totalizer data for ProBatch stations. Totalizer data for ALL FLUIDS in use on each ProBatch station is stored.		
Field	**Type**	**Description**
StationPkID	LONG*	Station ID number (from Stations table)
FluidSlotNumber	LONG	Fluid Slot Number (1-99)
ComponentPkID	[LONG]	Component ID number (from Components table)
ResettableTotal	DOUBLE	Fluid Resettable total (cc)
Grand Total	DOUBLE	Fluid Grand Total (cc)
Index	**Field**	**Order**
PrimaryKey*	StationPkID; FluidSlotNumber	Ascending
ComponentPkID	ComponentPkID	Ascending

Batches		
This is the parent table for all Batches recorded in the database. This table holds the Batch/Job history for all stations in the application. Batch entries are the basis for which VOC, HAP, and Material Reports are calculated. For each entry in this table, there will be child entries in station-specific table(s) to hold batch information specific to that type of station.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID for this batch
Time	TIMESTAMP	Time at which the Batch was started
BatchEndTime	TIMESTAMP	Time at which the Batch ended
StationPkID	LONG	Station ID number (from Stations table)

Index	**Field**	**Order**
PrimaryKey*	PkID	Ascending
StationPkID	StationPkID	Ascending
Chronological	BatchEndTime	Ascending

PrecisionMixBatchData		
This is a child table to the Batches table, that holds PrecisionMix station specific data. For each entry in the Batches table there will be one entry in this table if the station is a PrecisionMix.		
Field	**Type**	**Description**
BatchPkID	LONG*	Batch ID number (from Batches table)
RecipeComponentType	LONG	Recipe slot number (1 to 63)
RecipePkID	[LONG]	Recipe ID (from PrecisionMixRecipes table)
ActualFlowrate	[DOUBLE]	Average flow rate for job (cc/min)
ActualFlowrateGun1	[DOUBLE]	Average flow rate for Gun1 (cc/min)
ActualFlowrateGun2	[DOUBLE]	Average flow rate for Gun2 (cc/min)
TargetFlowrate	[DOUBLE]	Target flow rate for the recipe (cc/min)
TargetFlowrateGun1	[DOUBLE]	Target flow rate for Gun1 (cc/min)
TargetFlowrateGun2	[DOUBLE]	Target flow rate for Gun2 (cc/min)
Applicators	LONG	Configured guns (0=No Guns, 1=Gun1, 2=Gun2, 3=Both)
IntegratorSize	DOUBLE	Station integrator size (cc)

PrecisionMixBatchData		
Index	**Field**	**Order**
PrimaryKey*	BatchPkID	Ascending
RecipePkID	RecipePkID	Ascending

PrecisionMixBatchComponentData		
This is a child table to the Batches table, that holds PrecisionMix station specific data. For each entry in the Batches table, there will be 4-5 entries in this table if the station is a PrecisionMix. There will be 4 entries if the station is a PrecisionMix II 2-K (A, B, Solvent, Dump). There will be 5 entries if the station is a PrecisionMix II 3-K (A, B, C, Solvent, Dump).		
Field	**Type**	**Description**
BatchPkID	LONG*	Batch ID number (from Batches table)
RecipeComponentType	LONG*	Recipe Component Type (0=A 1=B 2=C 20=Solvent 21=Dump)
ComponentPkID	[LONG]	Component ID number (from Components table)
JobTotal	DOUBLE	Component job total (cc)
TargetRatio	SINGLE	Target ratio for this component
TargetTolerance	SINGLE	Target ratio tolerance for this component
AverageRatio	SINGLE	Average job ratio for this component
ActualTolerance	SINGLE	Maximum job ratio deviation for this component
Index	**Field**	**Order**
PrimaryKey*	BatchPkID; RecipeComponentType	Ascending
ComponentPkID	ComponentPkID	Ascending

InformerBatchData		
This is a child table to the Batches table that holds Informer station specific data. For each entry in the Batches table there will be one entry in this table if the station is an Informer.		
Field	**Type**	**Description**
BatchPkID	LONG*	Batch ID number (from Batches table)
ActualFlowrate	SINGLE	Average flow rate for batch (cc/min)
ComponentPkID	LONG	Component ID number (from Components table)
FluidBatchTotal	DOUBLE	Fluid batch total (cc)
MinTargetFlowrate	SINGLE	Minimum target flowrate
MaxTargetFlowrate	SINGLE	Maximum target flowrate

Index	Field	Order
PrimaryKey*	SnapshotPkID	Ascending

BatchDispenseBatchData		
This is a child table to the Batches table, that holds ProBatch station specific data. For each entry in the Batches table there will be one entry in this table if the station is a ProBatch.		
Field	**Type**	**Description**
BatchPkID	LONG*	Batch ID number (from Batches”table)
RecipeSlotNumber	LONG	Recipe slot number (1 to 255). This is the recipe that was used during this batch.
BatchID	LONG	Operator ID for this batch

Index	Field	Order
PrimaryKey*	BatchPkID	Ascending
BatchID	BatchID	Ascending

BatchDispenseBatchFluidData		
This is a child table to the Batches table, that holds ProBatch station specific data. For each entry in the Batches table there will be one entry in this table FOR EACH STEP used in the recipe if the station is a ProBatch.		
Field	**Type**	**Description**
BatchPkID	LONG*	Batch ID number (from Batches table)
StepNumber	LONG	Step Number (1-6)
FluidSlotNumber	LONG	Fluid Slot Number (1-99) – identifies which fluid was used in this step
ComponentPkID	[LONG]	Component ID number (from Components table)
BatchTargetDispense	DOUBLE	Target dispense amount for this fluid (cc)
BatchActualDispense	DOUBLE	Actual dispense amount for this fluid (cc)

Index	Field	Order
PrimaryKey*	BatchPkID; StepNumber	Ascending
FluidSlotNumber	BatchPkID; FluidSlotNumber	Ascending
ComponentPkID	ComponentPkID	Ascending

BatchDispenseBatchIDList		
This table holds all ProBatch Operator ID's logged during completed batches.		
Field	**Type**	**Description**
BatchID	LONG*	Operator ID.

Index	Field	Order
PrimaryKey*	BatchID	Ascending

Events		
This table holds all events/alarms recorded by PrecisionView AMR.		
Field	**Type**	**Description**
PkID	LONG*	Unique ID
EventTime	TIMESTAMP	Time at which the alarm or event occurred
StationPkID	[LONG]	Station ID number (from Stations table)
RecipeSlotNumber	[LONG]	Recipe slot number. Can be Null if not applicable.
FluidSlotNumber	[LONG]	Fluid slot number. Can be Null if not applicable.
EventDescriptionPkID	NUMBER	Event Description ID Number (from EventDescriptions table).
EventValue	[LONG]	Event/Alarm value. Can be Null if not applicable.

Index	Field	Order
PrimaryKey*	PkID	Ascending
Chronological	Time	Ascending
StationPkID	StationPkID	Ascending

EventUserEnteredDescriptions		
This table is a child table to the Events table. If this entry is present, the text in this entry will replace the text description of the event.		
Field	**Type**	**Description**
EventPkID	LONG*	Event ID number (from Events table)
Description	CHAR(50)	User-entered text for this event

Index	Field	Order
PrimaryKey*	EventPkID	Ascending
EventPkID	EventPkID	Ascending

ODBC Example

The following information is an example of how you can use PrecisionView AMR to gain open access to the AMR production data, collected and maintained in the AMR database. You can use this data to generate custom reports, using another program suited for that purpose. The program used in the following example is Microsoft® Excel.

1. Open a new workbook or worksheet in the Microsoft Excel spreadsheet application.

2. Select Data ➤ Get External Data ➤ Create New Query from the Excel menu bar. A Wizard opens and leads you through the steps to create a query and return the results of the query to the spreadsheet.

3. In the Choose Data Source dialog box, the PViewAMR2_ODBC data source should be listed.

4. Select the PViewAMR2_ODBC data source and click OK. The Query Wizard displays all the tables that make up the PrecisionView AMR database. Each of the AMR database table structures is documented in the **Production Information Tables**, page 148.

5. For this example, select InformerTotalizerSnapshotData. A list of all of the fields or Column Names from the table appears.

6. Select the Column Names of interest from the table and continue to follow the instructions in the dialog box to complete the Query Wizard process.

7. The last page of the Query Wizard will ask you what you want to do next. Select the “Return Data to Microsoft Excel” option and then click the Finish button.

8. In the “Returning External Data to Microsoft Excel” dialog box, choose how to return the data to the Excel spreadsheet, and click OK.

9. The query completes and the relevant production data is retrieved from the PrecisionView AMR database and placed into the selected columns of your spreadsheet.

   Once in the spreadsheet, you can perform a variety of sorting functions or calculations to supplement the information found in the database alone.

   If you want to go one step further to create your own custom report, you can make use of the Tools - Mail Merge feature in Microsoft Word, using the Excel Spreadsheet as the data source.

This example of how to gain open access to the PrecisionView AMR production information, contained in the AMR database, is a small demonstration of the powerful data access capability that PrecisionView AMR ODBC compliance offers you.

Information Systems (IS) or Information Technology (IT) professionals are very familiar with ODBC compliant databases. They have the expertise to access this data and integrate it with other Enterprise wide databases or to make use of other third Party ODBC compliant applications to generate custom reports. **Graco does not currently offer this type of support.**

Appendix B: Command Line Parameters

Only one PrecisionView interactive process may be started at a time. However, you can generate reports by invoking the PrecisionView AMR 2 executable (AMRClient.exe) with a series of command line parameters. These processes run in the background with no user interaction and do not affect the normal operation of the PrecisionView application. Refer to **Automatically Generated Reports**, page 130.

Totalizer Snapshot, Alarms and Events, Hazardous Air Pollutant Detail and Summary Reports

The following command line syntax allows you to generate the Totalizer Snapshot, Alarms and Events, Hazardous Air Pollutant Detail, and Hazardous Air Pollutant Summary reports. Square brackets indicate parameters you can omit. See page 161 for examples.

AMRClient rep *type* [*area* [*time-span* [*filename.ext*]]]

Parameter	Description	
AMRClient	Executable name. If the program is invoked from a directory other than the one where the executable is installed, this parameter must include the complete path name, as follows. C:\Program Files\Graco\PrecisionView AMR 2.0\AMRClient.exe	
rep	Causes process to generate report specified by *Type* parameter.	
type	Indicates type of report to generate. Possible values are as follows.	
	Value	**Description**
	tot	Totalizer Snapshot Report
	alm	Alarms and Events Report
	Hapd	Hazardous Air Pollutants Report (Detail)
	Haps	Hazardous Air Pollutants Report (Summary)

<table>
<tr><td>area</td><td colspan="2">Use this parameter to specify which stations should be included in the report. This can be a Network name, Folder name or Station number. Use an asterisk (*) to specify all PrecisionView configured stations.</td></tr>
<tr><td></td><td>Value</td><td>Description</td></tr>
<tr><td></td><td>n<Network Name></td><td>Specifies Network name. Do not include space between letter ‘n’ and name.</td></tr>
<tr><td></td><td>f<Folder Name></td><td>Specifies Folder name. Do not include space between letter ‘f’ and name.</td></tr>
<tr><td></td><td>s<Station Number></td><td>Specifies station number. Do not include space between letter ‘s’ and station number.</td></tr>
<tr><td>time-span</td><td colspan="2">Indicates time range for report. Area parameter must precede this value. Time span is specified with combination of a pair of letters (indicating span type) and a number (indicating span length). For example, value “th12” indicates time range covering last twelve hours. Possible values for span type are as follows.</td></tr>
<tr><td></td><td>Value</td><td>Description</td></tr>
<tr><td></td><td>th</td><td>Hour</td></tr>
<tr><td></td><td>td</td><td>Day</td></tr>
<tr><td></td><td>tw</td><td>Week</td></tr>
<tr><td></td><td>tm</td><td>Month</td></tr>
<tr><td></td><td>ty</td><td>Year</td></tr>
</table>

filename.ext	Indicates output file location. *Time-span* parameter must precede this value. If this value is omitted, output is directed to default printer. Enclose file name in quotation marks (“”) if it contains spaces. If file name contains an asterisk (*), that character is replaced with current time in format YYYYMMDDHHMMSS to make the name unique. File name extension indicates type of file to output. Possible values for the file extension are as follows.	
	Value	**Description**
	.qrp	QuickReport custom format (default if extension not recognized)
	.txt	Plain text
	.csv	Comma-delimited text
	.htm	HTML document
	.xls	Excel spreadsheet
	.rtf	Rich text format (Microsoft Word, WordPad, etc)

Custom Material Report

The following command line syntax allows you to generate the Custom Material Report. Square brackets indicate parameters you can omit.

AMRClient cmr *inputfilename* [outputfilename.*ext*]

Parameter	Description
AMRClient	Executable name. If the program is invoked from a directory other than the one where the executable is installed, this parameter must include the complete path name, as follows. “C:\Program Files\Graco\PrecisionView AMR\PViewAMR.exe”
Cmr	Causes process to generate a Custom Material Report.
Inputfilename	Indicates file name of a previously saved Custom Material Report Query definition (has .cmr extension).

outputfilename *.ext*	Indicates output file location. If this value is omitted, output is directed to default printer. Enclose file name in quotation marks (“”) if it contains spaces. If file name contains an asterisk (*), that character is replaced with current time in format YYYYMMDDHHMMSS to make name unique. File name extension indicates type of file to output. Possible values for file extension are as follows.	
	Value	**Description**
	.qrp	QuickReport custom format (default if extension not recognized)
	.txt	Plain text
	.csv	Comma-delimited text
	.htm	HTML document
	.xls	Excel spreadsheet
	.rtf	Rich text format (Microsoft Word, WordPad, etc)

If applying the command line parameters results in no information, the nothing is output to the printer or file.

Examples of Command Line Parameters
AMRClient rep tot s2 tw3 Prints totalizer snapshot for station #2. Snapshots older than three weeks are ignored.
AMRClient rep alm s12 tm1 “C:\My Documents\log.txt” Outputs alarms and events report for station #12 for the past month to a plain text file.
AMRClient rep hapd * ty1 “C:\HAP Reports\hap*.htm” Outputs hazardous air pollutant detail report for all stations for the past year to an HTML document. Asterisk in the file name is replaced with the current time to make the name unique (i.e. hap19990910133012.htm).
AMRClient rep haps s1 th25 C:\hapsummary.rep Outputs hazardous air pollutant summary report for station #1 for the past 25 hours to a custom QuickReport file (since extension .rep is not recognized). This file may be opened from the print preview screen and printed at a later time.