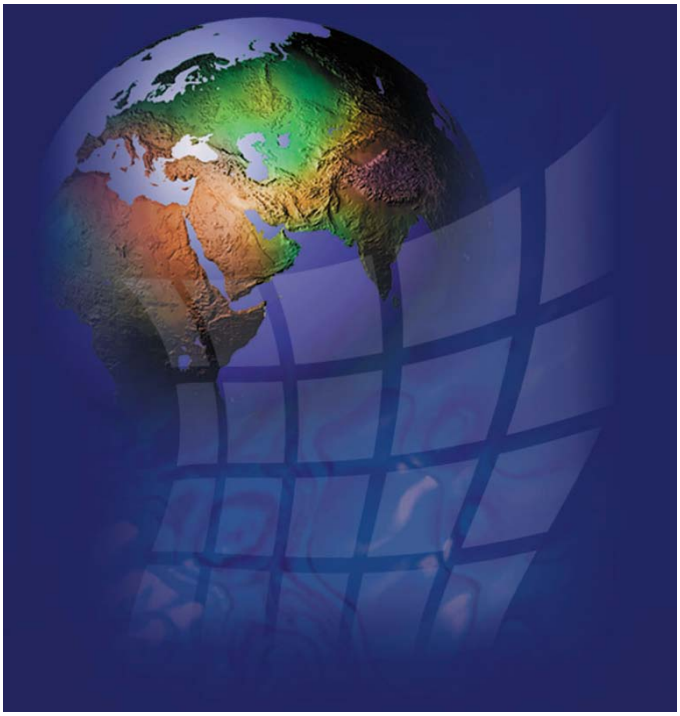
ADS® PrimeWorks® User Manual

November 2010 **QR 775018 A0**



ADS Water Loss Control Products powered by Primayer

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Table of Contents

Chapter 1 Introduction 1

Technical Support 2

Chapter 2 Software Installation 3

Hardware/Software Requirements 4
Hardware Requirements 4
Software Requirements 4
User Access Requirements 4

Installing PrimeWorks 5

Chapter 3 Interface Overview 7

Main Window 8
Menus and Toolbar 8
Database Navigation Pane 9
Working/Viewing Pane 10

Chapter 4 Menus 11

Standard Windows Buttons 12

File Menu 13
Print 13
Print Preview 13
Page Setup 14
View 15
Properties 16
Exit 21

Database Menu 22
Delete 23
Rename 23
Bulk Move 23
Format Data Type 24
DataAudit 24
Database Backup Log 25

Mobile Device Menu 26
Import from PDA 26
Import from Remote Location 26

PrimeLog Menu 28

Import/Export Menu 29
PrimeWare Import 29
Automatic Export 30
Automatic Import 31
Export Data 32
Import Data 34
Edit Site IDs 36
Report Menu 37
Reporting Option 37
Help Menu 38
Plug Info 38
About 39
Manual 39

Chapter 5 Toolbar 41

Database Navigation Buttons 42
Add and Delete Group Buttons 42
Add and Delete Sub Group Buttons 42
Add and Delete Site Buttons 42
Find Function 43
Remove Logging Function 44

Chapter 6 PrimeLog Operation 45

Program 46
PrimeLog Program Buttons 46
Logger Clock 49
Channel Parameters 49
Readback 52
Pressure AutoCal 54
Reset 55
Automatic Dialing 56
Modem Activity Log 58

Chapter 7 Graphing 59

Selecting the Graph Data 60
Generating the Graph 61

Modifying the Parameters for the Graph 62
Viewing Area 62
Legend 62
Start and End Times 63
Time Scale 63
Control Bar 64
Overlay Button 65
Right-Click Menu 66

Chapter 8 Reporting 69

Selecting the Data 70

Designating the Parameters 71

Generating the Report 73

Appendix – Meter Scaling Tables 75

Elster/Kent Helix & Domestic Meters 76

Schlumberger/Actaris/Stream Domestic & Helix Meters 77

Sensus (Socam/Meinecke) 78

Index…… 79

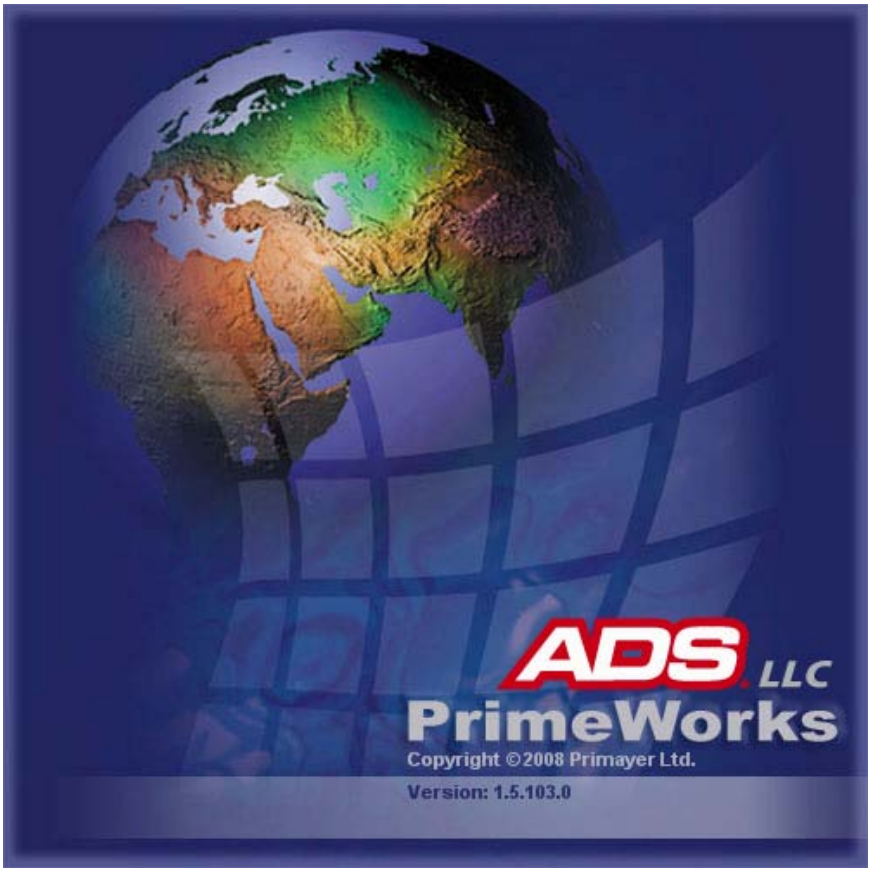
CHAPTER 1

Introduction

The **PrimeWorks**® software allows a user to manage, graph, and report logger data and to program and retrieve data from loggers. It also provides various database management tools and functions.

PrimeWorks primarily offers or supports the following features and products:

- Database Management
- Report Generation
- Graphing
- PrimeLog®
- PrimeProbe®2
- Mobile Device Interface
- Automatic and Manual Data Importing and Exporting



PrimeWorks software

Technical Support

ADS provides technical support services for assistance in configuring and operating the **PrimeWorks** software. Contact the ADS Support Center by telephone or email in the following way:

- (877) 237-9585
- adssupportcenter@idexcorp.com

CHAPTER 2

Software Installation

This chapter provides the hardware and software requirements for running the **PrimeWorks** software on a user's PC and instructions for installing the software.

Hardware/Software Requirements

The user's PC must meet the following hardware and software requirements to run **PrimeWorks**. However, please keep in mind that, as with any software application, software performance typically increases with stronger host system specifications.

Hardware Requirements

The user's PC must satisfy the following minimum hardware requirements to run **PrimeWorks**:

- Intel® Pentium® 3 or equivalent CPU
- 128 MB RAM
- 10 MB available hard disk space
- Serial communication port (for programming or reading data from loggers)

Software Requirements

- Microsoft® Windows® 2000, Windows XP, or Windows Vista® (32-bit)
- .NET framework (included as part of the **PrimeWorks** installation)

Note: ADS does not provide technical support concerning issues relating to, or caused by problems with, the operating system installed on the user's PC.

User Access Requirements

To install **PrimeWorks**, the user must have the appropriate administrative privileges to write to the Registry.

Installing PrimeWorks

> **Note:** **PrimeWorks** uses the .NET framework. Therefore, it must reside on the user's PC before the **PrimeWorks** software can be installed. If .NET does not already exist on the user's PC, the installation CD will initiate .NET installation automatically.
>
> **Note:** The installation process provides the option to designate the folders in which to install **PrimeWorks**. However, ADS recommends using the designated default folders.

Install the **PrimeWorks** software in the following way:

> **Note:** Do not run any other applications during the installation procedure.

1. Insert the **PrimeWorks** installation CD into the CD-ROM drive. The installation CD has an *AutoPlay* feature that should run the CD automatically. However, if this does not occur, run the CD in one of the following ways:
   - Select **Start** > **Run**, enter [*CD-ROM drive designation*]`:\setup.exe,` and then click **OK**.
   - Navigate to the **ADS Primework Setup.exe** file on the CD through **My Computer** or **Windows Explorer**, and then double-click on the file.
2. Click **Yes** to initiate the installation process, or **No** to cancel.
3. Proceed through the installation wizard, supplying the appropriate information as requested.

> **Note:** If necessary, the .NET framework will be installed automatically. Please allow several minutes for this to occur. The PC may appear to be hung during installation. Once .NET installation is complete, the user must repeat the **PrimeWorks** installation process.

4. Restart the computer upon request. *This typically is required only after .NET framework installation.*

CHAPTER 3

Interface Overview

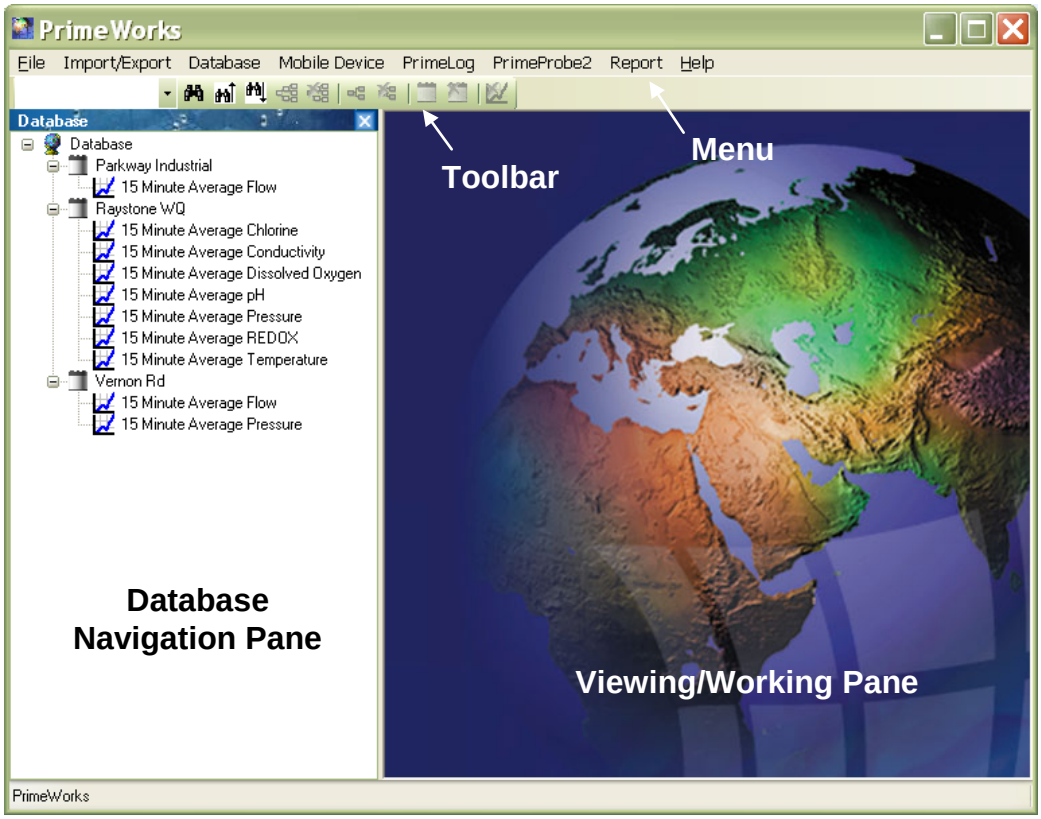
The **PrimeWorks** user interface enables a user to perform many functions, including data management, graph and report generation, logger programming, and data retrieval (i.e., readback). The interface is similar to Windows and, therefore, should be visually and functionally familiar for most Windows users.

This chapter describes the basic layout of the **PrimeWorks** interface and provides a general overview of the interface components and features.

Main Window

The main window of the **PrimeWorks** user interface is comprised of three main sections:

- Menus and Toolbar
- Database Navigation Pane
- Viewing/Working Pane



PrimeWorks main window

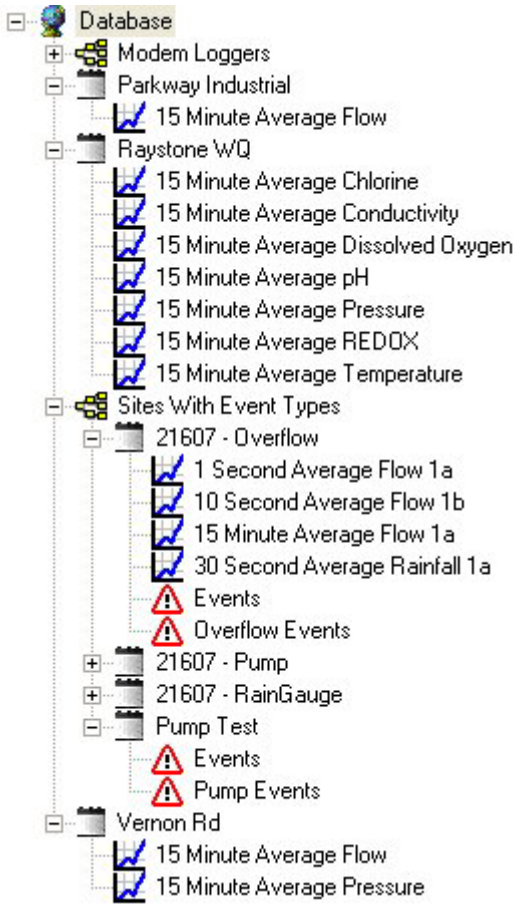
The user can drag the vertical divider located between the database navigation pane (left) and the viewing pane (right) to the right or left to change the sizes of the two sections. However, ADS recommends maintaining a larger portion for the viewing pane to optimize the presentation of information.

Menus and Toolbar

The menus and buttons on the toolbar control various software functions described in detail in subsequent chapters.

Database Navigation Pane

The database navigation pane provides a graphical representation of the database. The hierarchical tree structure places the database name at the top level and the individual loggers at the lower levels.



Database Navigation Pane

The expansion symbol (+) indicates that additional items are contained, but currently not visible, under the main heading. Clicking on this symbol reveals these contents. Expanded contents can be hidden by clicking on the hyphen (-).

The user can highlight items in the display to determine the starting point of the data cascade for reporting and graphing and delete or rename items by right-clicking and choosing the appropriate menu option.

Right-Click Option Menu

The right-click menu available through the database navigation pane displays when the user right-clicks an item in the database.

Right-click option menu (the content on the menu depends on the database item selected)

> **Note:** The options available on the menu depend on the plug-ins loaded during the software installation process and the type of logger selected.

The following table describes the functions typically available on the menu:

Menu Item	Function
Automatic Export	Selecting this option adds the selected item (and the contents below it in the tree) to the **Automatic Export** dialog opened in the viewing pane of the main window. See *Automatic Export* on page 30 for more information.
Export Data	Selecting this option adds the selected item (and the contents below it in the tree) to the **Export Data** dialog opened in the viewing pane of the main window. See *Export Data* on page 32 for more information.
Graph	Selecting this option graphs the selected item (and the contents below it in the tree) on the **Graph** dialog opened in the viewing pane of the main window. See *Graphing* on page 59 for more information.
Program	Selecting this option launches the appropriate logger program screen to enable the user to program the selected logger.
Report	Selecting this option adds the selected item (and the contents below it in the tree) to the **Report** dialog opened in the viewing pane of the main window. See *Reporting* on page 69 for more information.
Rename	Selecting this option highlights the name of the selected item and places it in an editable field, allowing the user to modify or change the name as necessary. To cancel the rename or confirm changes to the name, click on another item in the browser control window.
Delete	Selecting this option deletes the selected item (and the contents below it in the tree) following a confirmation dialog. Clicking **OK** deletes the item; clicking **Cancel** (or closing the window) cancels the deletion.

Working/Viewing Pane

The Working/Viewing Pane displays application dialogs for setting various parameters and viewing output data, such as reports and graphs.

CHAPTER 4

Menus

This chapter describes the options available within the menus listed along the header portion of the **PrimeWorks** main screen:

- File
- Import/Export
- Database
- Mobile Device
- PrimeLog
- PrimeProbe2
- Report
- Help

It also defines the buttons used for resizing, closing, minimizing, or maximizing the application window.

Standard Windows Buttons

The following table provides descriptions for the buttons used to manipulate the application window:

Button	Function	Description
	Minimize	Clicking on this button minimizes (or hides) the window. The user can re-open the window by clicking on the **PrimeWorks** button on the taskbar. **PrimeWorks** remains running while the window is minimized. The **Minimize** option also is available by right-clicking on the title bar.
	Maximize	Clicking on this button expands the window to fit the entire screen. The **Maximize** option also is available by right-clicking on the title bar.
	Restore	Clicking on this button scales down the size of the window. When the window is in this state, the user can click and drag the edges and corners of the window to resize the window as required. Clicking and holding the header (i.e., title bar) with the window in this state allows the user to drag the application window around the screen as necessary. The **Restore** option also is available by right-clicking on the title bar.
	Close	Clicking on this button closes the window and terminates the program to which the window belongs. The **Close** option also is available by right-clicking on the title bar.

File Menu

File Menu options

The **File** menu includes the following submenus:

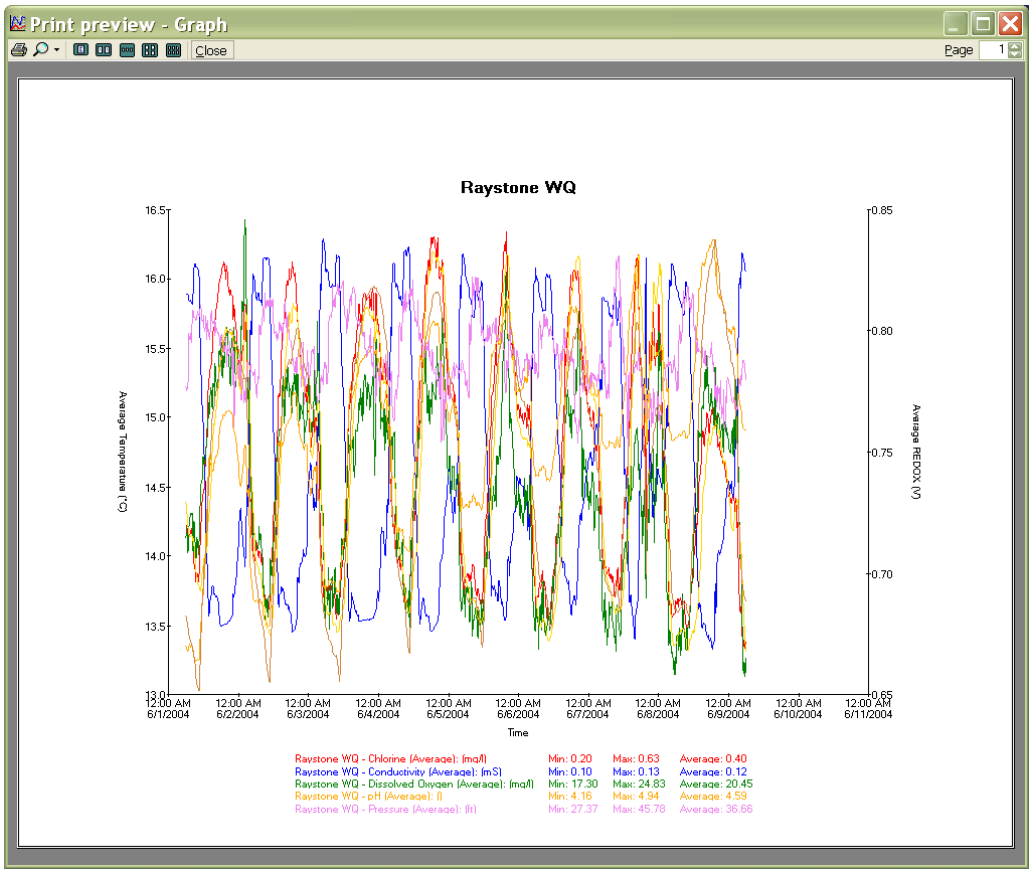
- Print, Print Graph, or Print Report
- Print Preview
- Page Setup, Graph Page Setup, *or* Report Page Setup
- View
- Properties
- Exit

Print

The **Print** menu option displays the **Print** dialog for the default Windows printer and allows the user to select print options such as the number of copies, page setup, finishing details, orientation, and paper type. The options available on the dialog reflect the capabilities of the printer. The dialog also allows the user to select other printers, when applicable.

Print Preview

The **Print Preview** option displays an on-screen representation of what the selected graph or report will look like upon printing. This allows the user to verify the output before final printing.

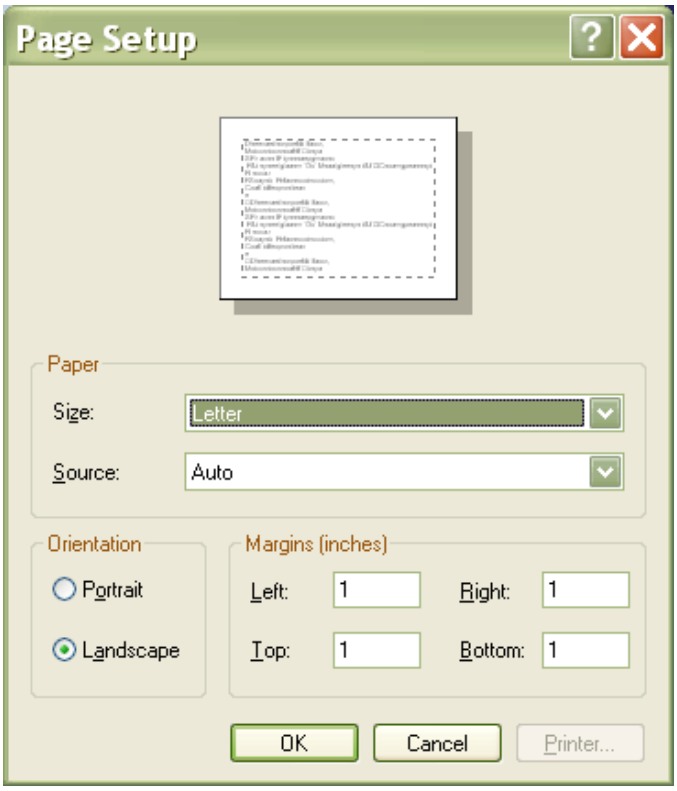


Print preview window

From the preview window, the user can send the items to print, select the number of pages to preview at one time, magnify or reduce the size of the data presented on the screen for viewing, or close the preview window without printing the items.

Page Setup

The **Page Setup** option controls the output format of **PrimeWorks**, allowing the user to modify settings for generating reports and graphs. For the best results, ADS recommends selecting the landscape mode for printing graphs and the portrait mode for printing reports.



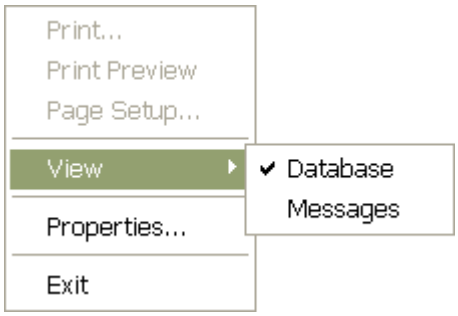
Page Setup dialog

The top part of the dialog displays a typical sample page with text and borders indicated by dotted lines. This sample page dynamically reflects any changes to the page settings made by the user.

> **Note:** The paper size and source options available are based on the default printer designated through the **Printer** dialog in the Windows **Control Panel**. Windows XP users typically can set this through the **Start > Settings > Control Panel > Printer and Faxes** options. Refer to the corresponding Windows documentation to access this location through other Windows versions and configurations.

View

The **View** menu includes two options:



View options

Database

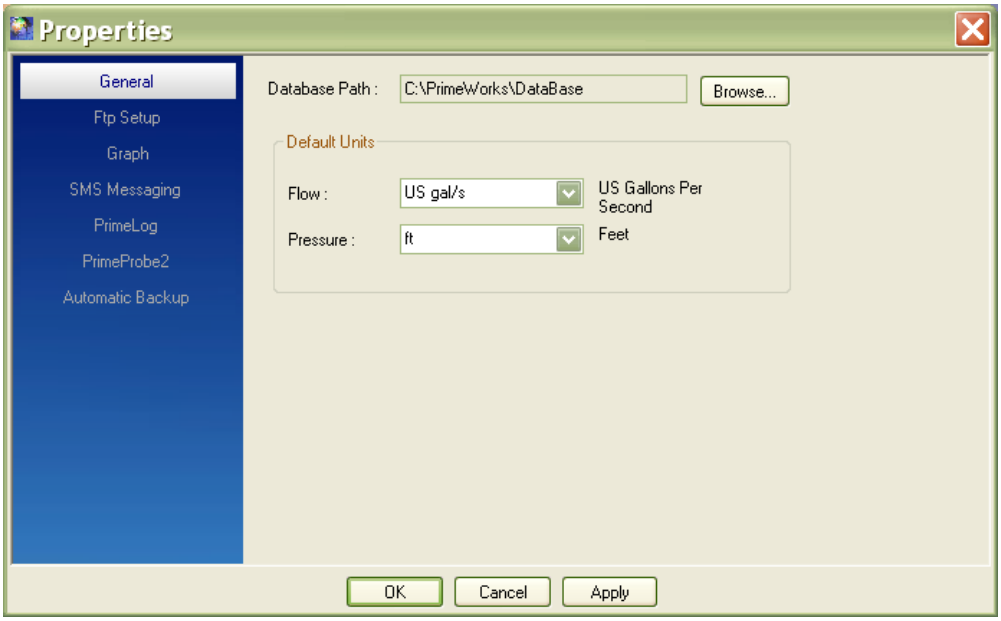
This option serves as a toggle button to show or hide the database navigation pane on the main screen. A check symbol (✓) displayed beside the **Database** option on the menu indicates the database currently displays on the main screen. Selecting this option (removing the check) hides the database.

Messages

This option serves as a toggle button to show or hide the **Messages** dialog. Once displayed, the user can close the dialog by either clicking on the close button on the dialog or selecting the **Messages** option on the menu.

Properties

The **Properties** option displays the **Properties** dialog.



Properties dialog (**General** tab)

The following tabs allow the user to select the individual properties:

- General
- Ftp Setup
- Graph
- SMS Messaging
- PrimeLog
- PrimeProbe2
- Automatic Backup

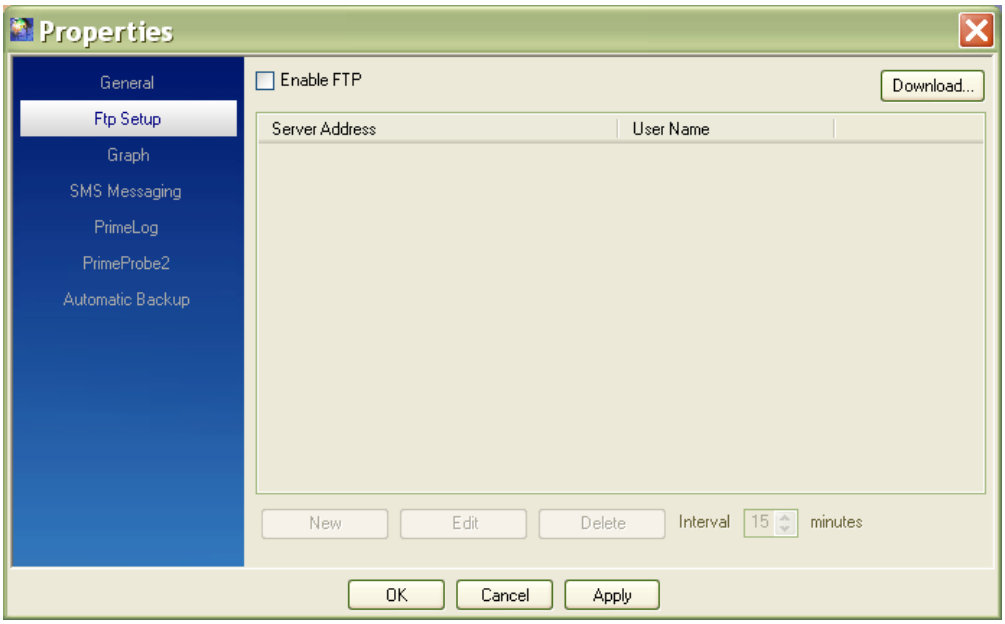
General

This tab displays the current database location. The user can designate an alternate location by clicking on the **Browse** button and navigating to the desired path. Once the path has been selected, the new path will display in the **Database Path** field on the **Properties** dialog.

To implement the new path for the database, click on the **Apply** button. Click on the **Cancel** button to retain the current database path.

Ftp Setup

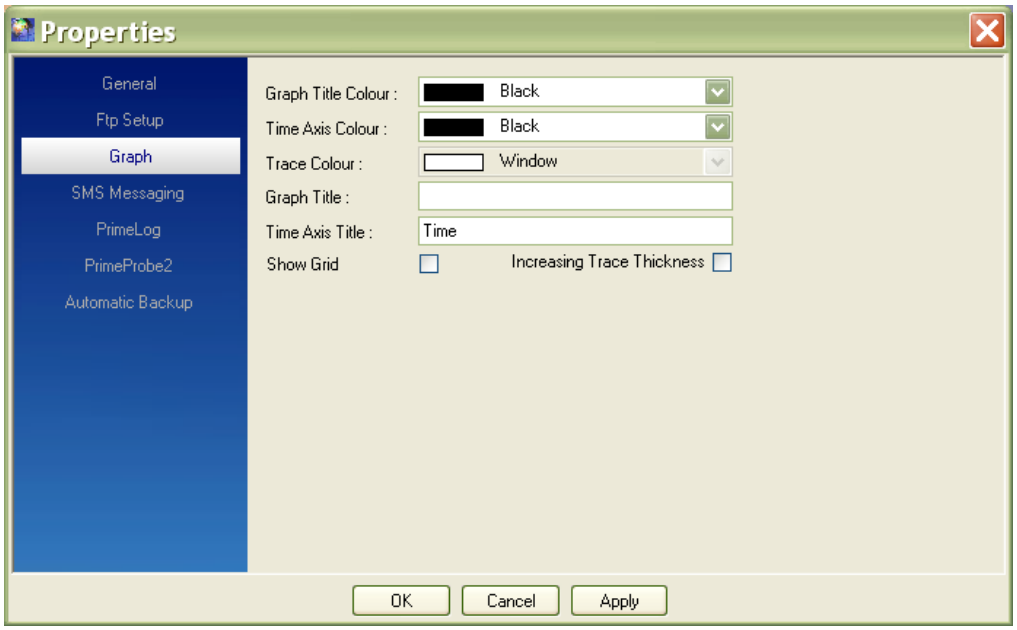
This feature is currently unavailable.



Ftp Setup tab

Graph

This tab displays the graphing properties indicating the current graph settings.



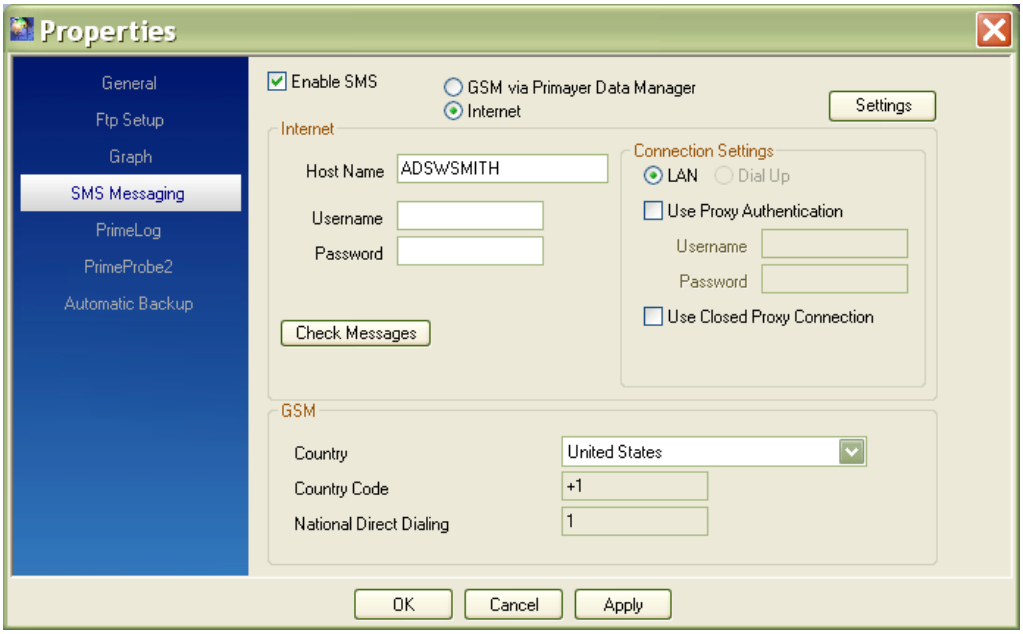
Graph tab

From this location, the user can change the colors of the graph titles, axis, and trace (i.e., data); designate titles for the graph and time axis; indicate whether to display an optional grid on a graph; and designate whether to increase the thickness of the trace.

After making the necessary selections or modifications, click on the **Apply** button to institute the changes or the **Cancel** button to ignore the changes.

SMS Messaging

This tab displays the necessary parameters for performing Internet communication or wireless GSM (Global System for Mobile Communications).

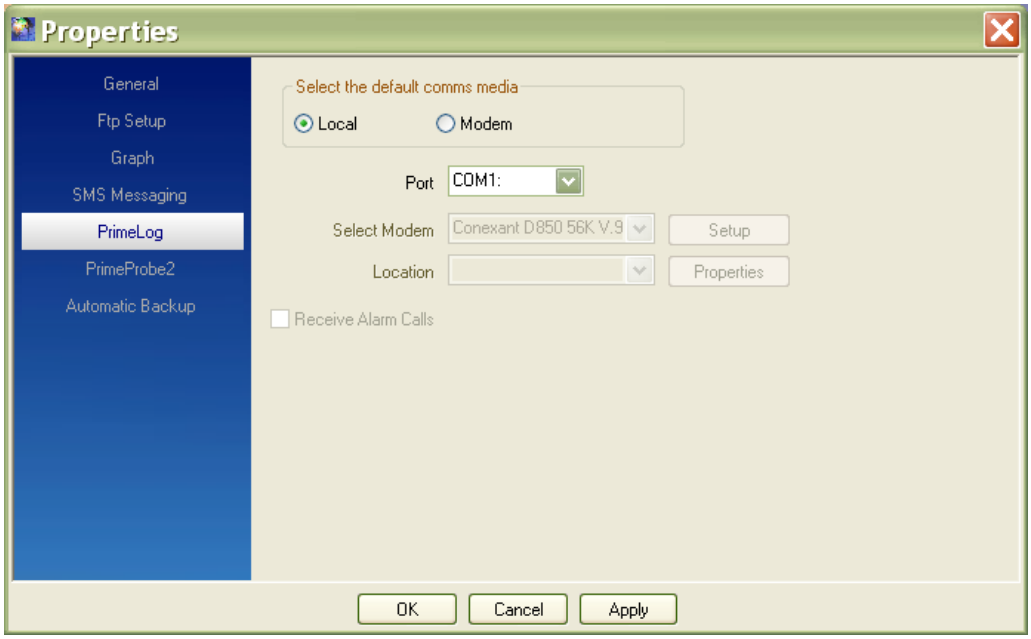


SMS Messaging tab

After making the necessary selections or modifications, click on the **Apply** button to institute the changes or the **Cancel** button to ignore the changes.

PrimeLog

This tab displays the media and hardware through which communication will occur and the corresponding parameters.



PrimeLog tab

Default Comms Media

This section indicates the kind of connection: **Local** (*cable*) or **Modem** (*remote*).

Port

This field identifies the communication port to which the logger will be connected when using the PrimeLog functionality. Select the appropriate port from the drop-down list. This list contains only those ports that are currently available for selection.

Select Modem

This field indicates the modem through which communication will occur. Select the proper modem from the drop-down list. This list contains only those modems available on the PC. *This option is available only when the **Modem** option is selected.*

Location

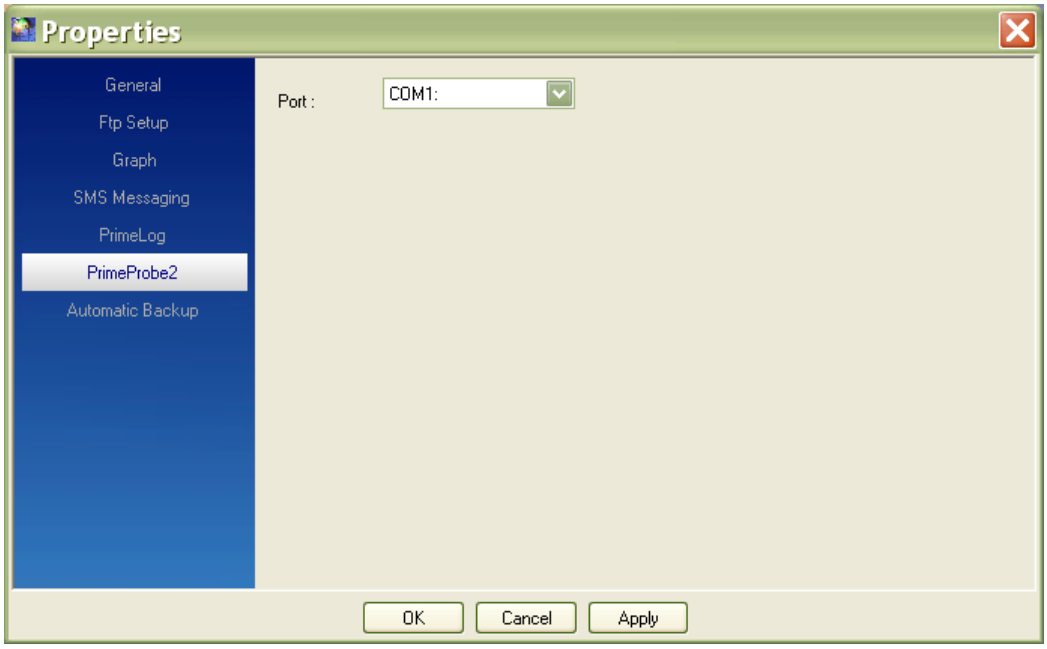
This field specifies the PC location for dialup. Select the appropriate option from the drop-down list. Clicking on the **Properties** button allows the user to select locations and dialing rules using the standard dialing functions in Windows. *This option is available only when the **Modem** option is selected.*

Receive Alarm Calls

This option switches the PC modem into the proper mode for the system to receive a call from the logger. *This option is available only when the **Modem** option is selected.*

PrimeProbe2

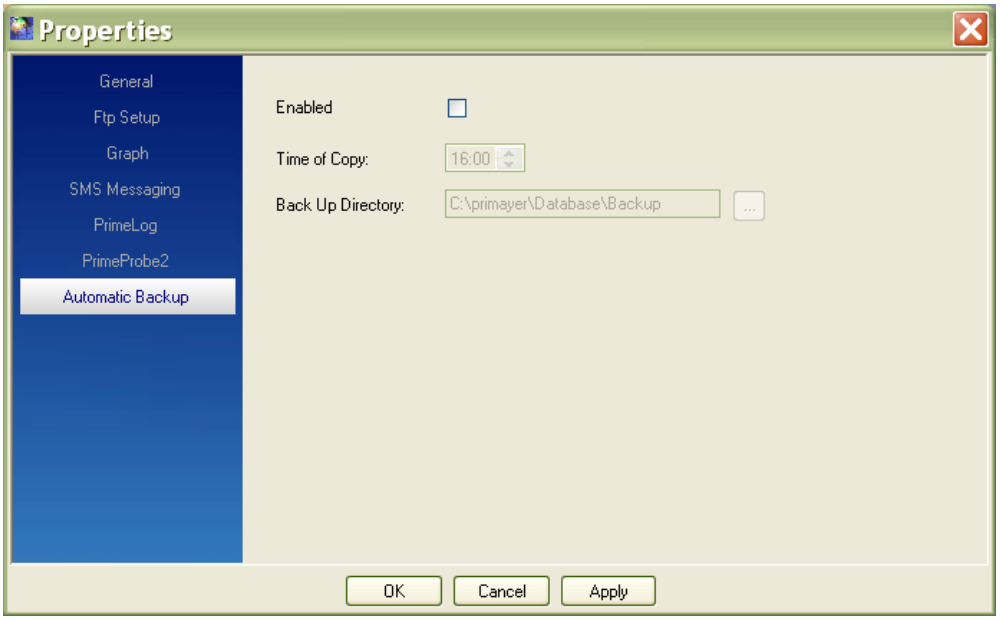
This tab provides the **Port** drop-down list from which to select the proper port for the PrimeProbe2 connection.



PrimeProbe2 tab

Automatic Backup

This tab enables the user to select a time (daily) at which to copy the backup data and designate a database location in which to store the backup data.



Automatic Backup tab

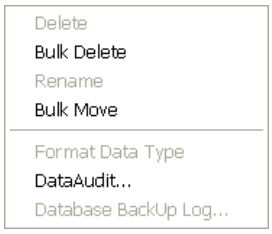
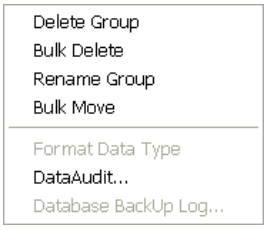
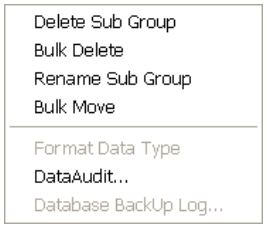
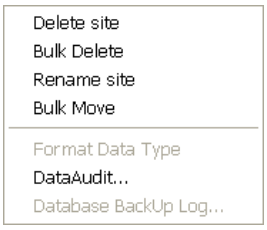
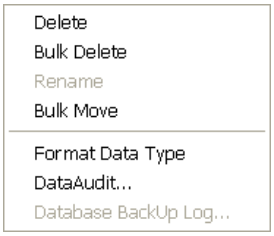
After selecting the time to make the copy and browsing to the directory location in which the data should be stored, click on the **Apply** button. Click on the **Cancel** button to exit the **Properties** dialog without saving any changes.

Exit

This option exits the **PrimeWorks** software. The user also can exit the software by clicking on the standard exit button ( ) at the top right-hand corner of the **PrimeWorks** application window.

Database Menu

The options available under the **Database** menu may vary based on the item selected in the database navigation pane. The following sections display the possible menu options and descriptions for the options.

Item Selected in Browser Control	Available Database Menu Options
Database	
Group	
Sub Group	
Site	
Logging Function	

The following sections offer descriptions of the **Database** menu options.

Delete

(*Includes the **Delete**, **Delete Group**, **Delete Sub Group**, **Delete Site**, and **Bulk Delete** options*)

The delete option deletes the database items selected in the browser control. Any items included within the selected item also will be deleted. The **Bulk Delete** option allows the user to delete several or all items from the database at one time.

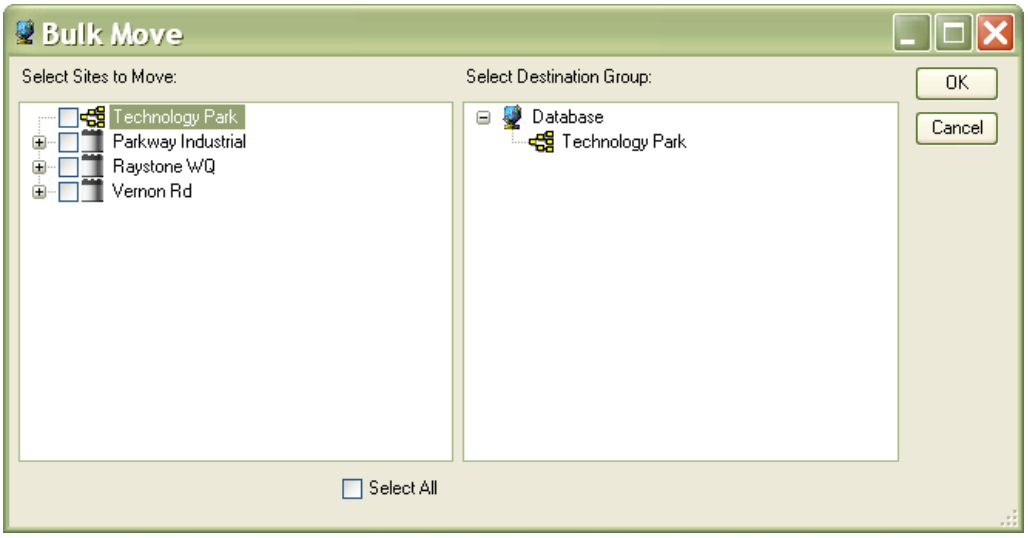
Rename

(*Includes the **Rename Group**, **Rename Sub Group**, and **Rename Site** options*)

The rename option places the selected database item into an editable mode for modification as necessary.

Bulk Move

This option displays the **Bulk Move** dialog that enables the user to move multiple items from one group or sub group to another group or sub group in a database at one time.



Bulk Move dialog

Perform a bulk move in the following way:

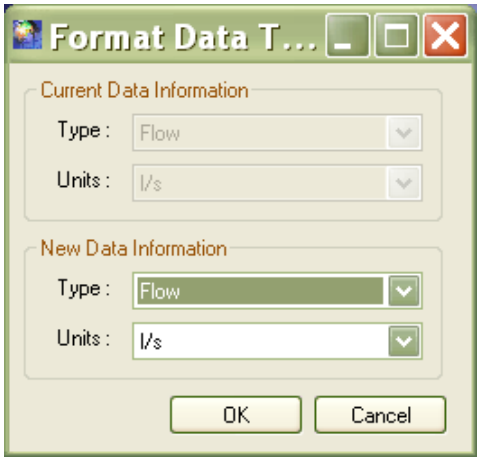
1. Select the checkboxes corresponding to the sub groups and/or sites for transfer from the **Select Sites to Move** box on the **Bulk Move** dialog. **PrimeWorks** also provides the option to select *all* items for transfer *at one time* by selecting the **Select All** checkbox.
2. Select the group or sub group to which to move the item(s) from the **Select Destination Group** box. The group or sub group to which the item is moved must in a higher position on the database hierarchy than the item undergoing transfer. It cannot be in a lower or equivalent

position. For example, a sub group (with its associated sites) can be transferred from one group to another group, but not to another sub group. To transfer all the sites from a specific sub group to another sub group, select the checkboxes for all the sites individually, without selecting the sub group from which they are being transferred.

3. Click on the **OK** button to initiate the move.

Format Data Type

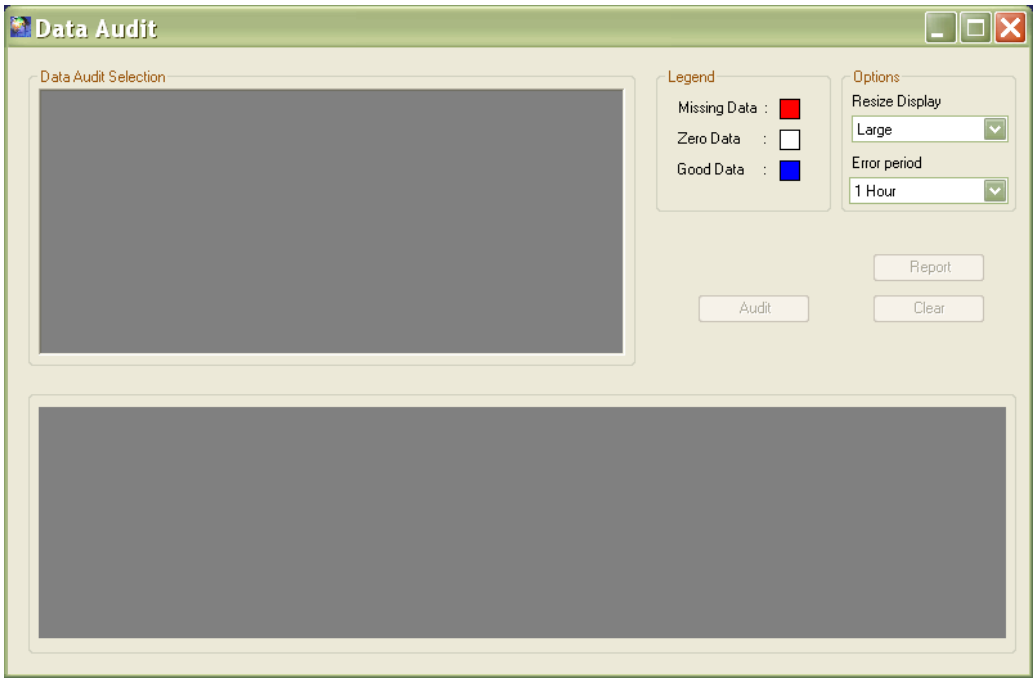
This option displays the **Format Data Type** dialog that allows the user to change the units of measure for the different data types. The user must select a logging function to access this feature and dialog.



Format Data Type dialog

DataAudit

This option displays the **Data Audit** dialog that allows the user to search for missing or zero data within a logging function.



Data Audit dialog

Perform an audit in the following way:

1. Drag the items to audit into the **DataAudit Selection** window.
2. Click on the **Audit** button.

PrimeWorks generates an audit report in the lower window with the data colored based on the data type. The **Legend** indicates the results that correspond to the colors.

The user can resize the display to simplify the search for missing data by selecting the appropriate option from the **Resize Display** drop-down list. Adjust the size of the display based on the size of the gap under investigation. Select the period from the **Error Period** drop-down list to serve as the threshold at which **PrimeWorks** identifies a gap in the data as missing data on the display.

Database Backup Log

This option displays a report listing the **PrimeWorks** database daily backups that have been attempted and the corresponding results of those attempts. It is enabled only if the user has configured the system to perform automatic backups and at least one log is available.

Refer to *Automatic Backup* on page 21 for more information on setting up **PrimeWorks** to backup the database automatically each day.

Mobile Device Menu

The **Mobile Device** menu provides the following options for importing data from the user's PDA or a remote location into the **PrimeWorks** database.

Mobile Device menu options

Import from PDA

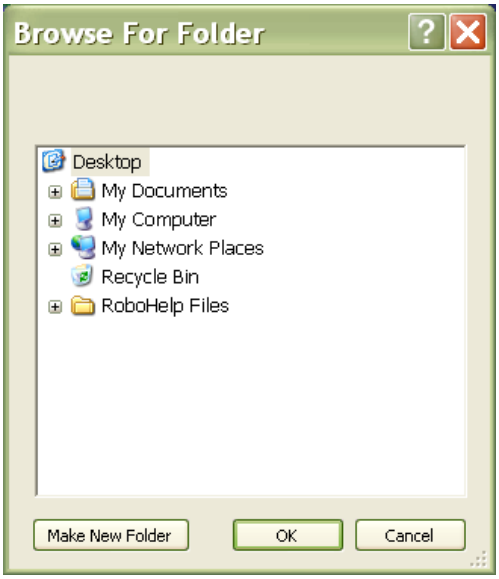
This menu option displays a dialog listing the sites available for import on the PDA, provided the link has been established between the user's PC and the PDA.

Import data from specific sites on the PDA to the **PrimeWorks** database by selecting the checkboxes on the dialog corresponding to the sites and then clicking on the **OK** button.

> **Note:** When the same site exists both on the PDA and in the user's database, **PrimeWorks** will incorporate the imported data into the corresponding site in the user's **PrimeWorks** database.

Import from Remote Location

This option displays the **Browse For Folder** dialog through which the user can navigate to another **PrimeWorks** database containing data to import into the user's **PrimeWorks** database.



Browse For Folder dialog

Import the data by navigating to the directory location containing the other database, selecting the checkboxes corresponding to the sites containing data for import, and clicking on the **OK** button to initiate the import.

> **Note:** When the same site exists in both databases, **PrimeWorks** will incorporate the imported data into the corresponding site in the user's database.

PrimeLog Menu

The **PrimeLog** menu includes the following options:

PrimeLog menu

- **Program** This option allows the user to program a logger.
- **Readback** This option allows the user to Readback data from a logger.
- **Pressure Autocal** This option sets the local barometric pressure as a reference instead of the factory default standard atmosphere setting (*or the Autocal setting designated previously*).
- **Reset** This option allows the user to prevent the logger from logging data, delete all data from the logger memory, delete site parameters, and restart the logger clock. This function typically is used to reduce power consumption for storage purposes.
- **Automatic Dialing** This option controls the automatic dialing of loggers.
- **Modem Activity Log** This option opens the modem activity log.

Refer to *Chapter 6, PrimeLog Operation*, on page 45 for more detailed information on PrimeLog.

Import/Export Menu

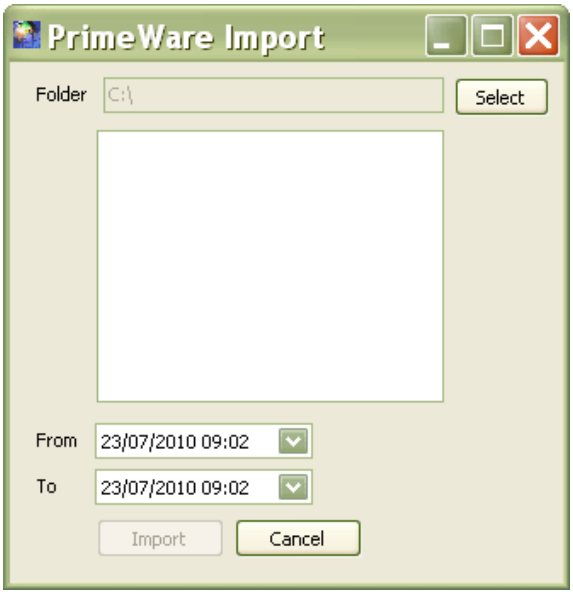
The **Import/Export** menu provides the options for importing and exporting data to and from the **PrimeWorks** database. The following import/export data type formats are available:

- SERCK
- Generic Date/Time stamping
- SLI interface

Import/Export menu options

PrimeWare Import

This option displays the **PrimeWare Import** dialog for importing data from PrimeWare databases.

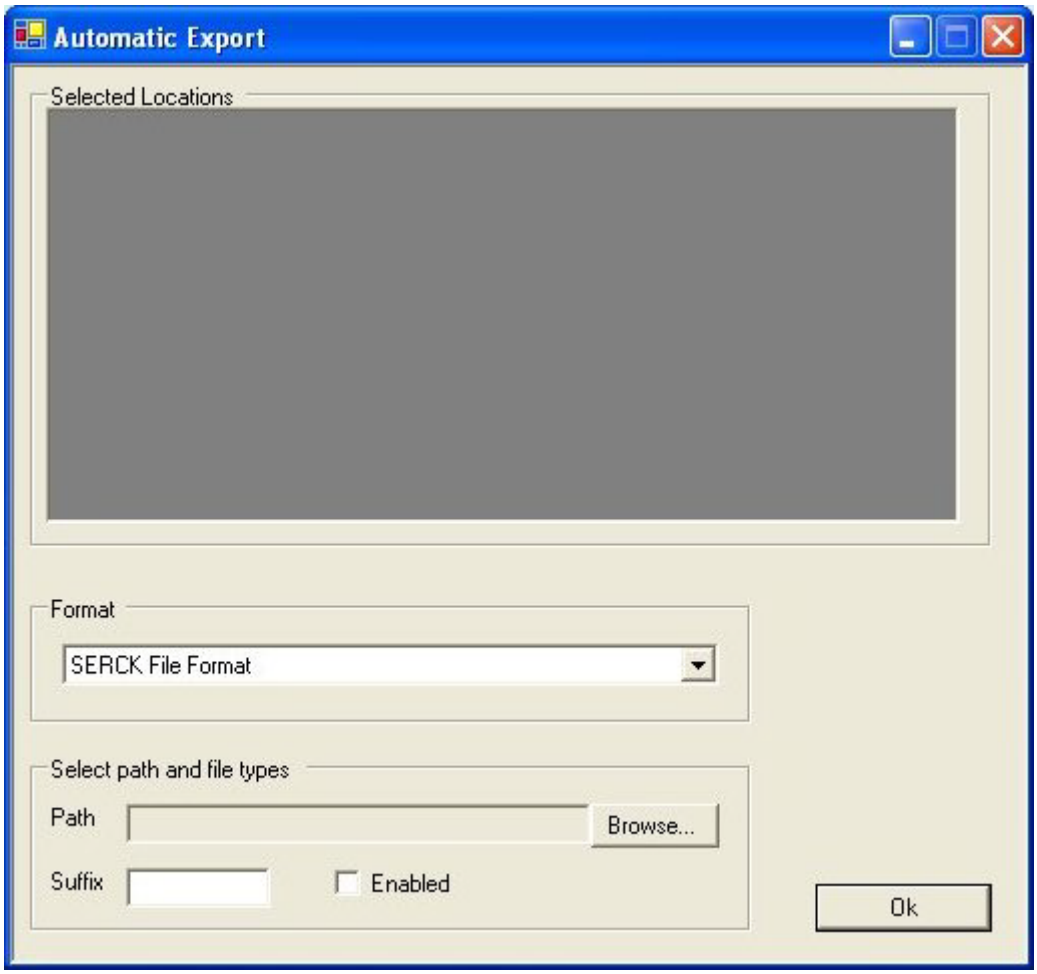


PrimeWare Import dialog

Navigate to the appropriate site(s) and then designate the range of data to import. Notice that the **From** and **To** fields automatically default to the earliest date/time and last date/time for the selected data items.

Automatic Export

This option displays the **Automatic Export** dialog that allows the user to setup **PrimeWorks** to export data automatically.



Automatic Export dialog

Set up **PrimeWorks** to perform automatic exports in the following way:

1. Drag and drop the location(s) to be exported into the **Selected Locations** window from the database navigation pane.
2. Select the format for the output file from the **Format** drop-down list.

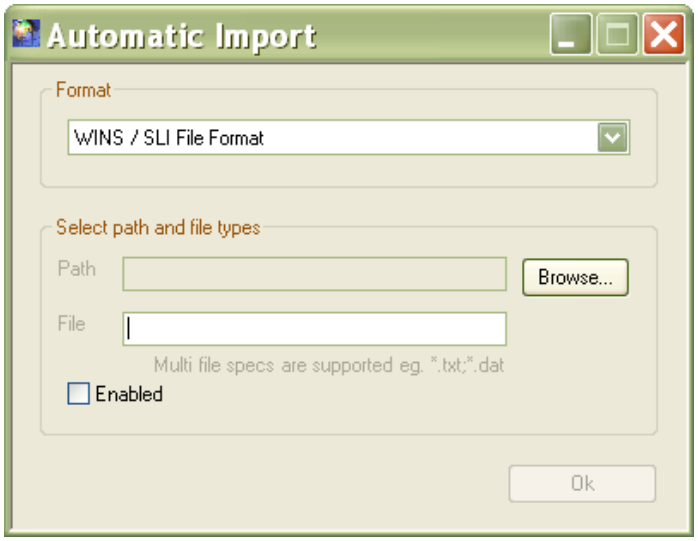
Output file types

3. Select the **Browse** button to navigate to and designate the path to which to export the data.
4. Enter the appropriate suffix for the files in the **Suffix** field.
5. Select the **Enabled** checkbox to ensure the automatic export feature is activated.
6. Click on the **OK** button.

Any new data available in **PrimeWorks** will be exported automatically as designated by the selected parameters.

Automatic Import

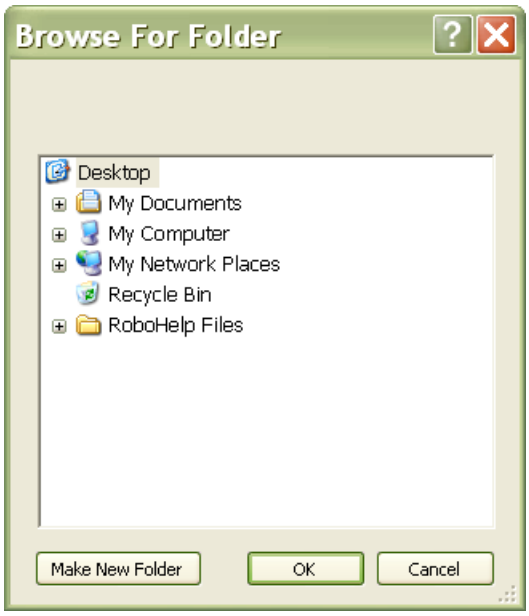
This option displays the **Automatic Import** dialog that enables the user to set up **PrimeWorks** to import data automatically.



Automatic Import dialog

Set up **PrimeWorks** to perform automatic imports in the following way:

1. Select the format in to import the data file from the **Format** drop-down list. Typically, data is imported in a **WINS/SLI File Format**.
2. Click on the **Browse** button to navigate to and designate the directory location from which to import the data files. The selected location will display in the **Path** field.



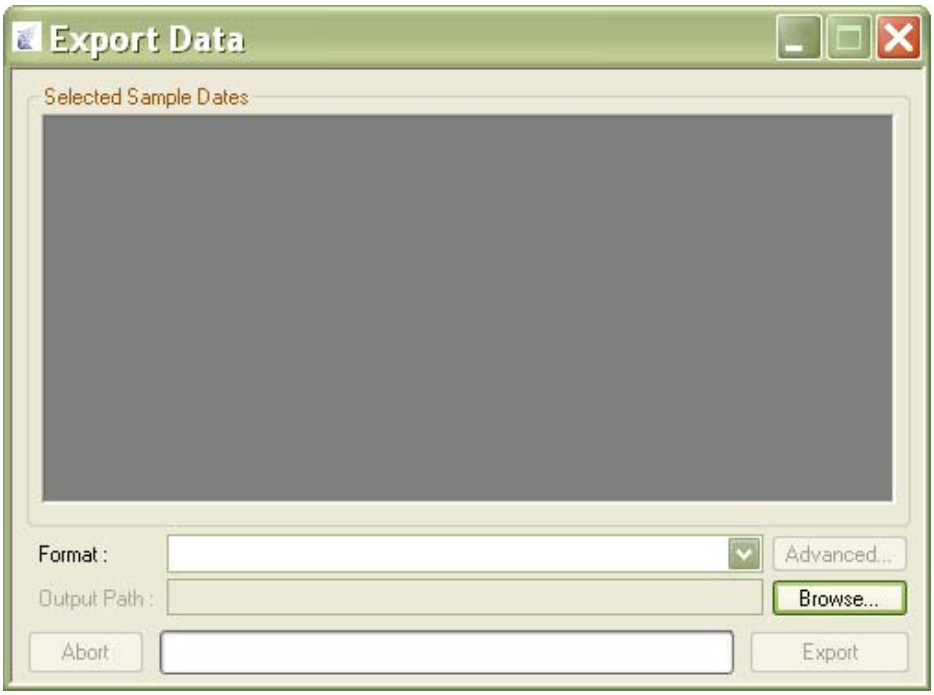
Browse For Folder dialog

3. Enter the extension(s) in the **File** field corresponding to the type of files to import from the designated directory location.
4. Select the **Enabled** checkbox to ensure the automatic import feature is activated.
5. Click on the **OK** button.

Any new data files of the designated file type that appear in the selected directory location will be imported automatically into **PrimeWorks** and stored in an Imported **PrimeWorks** folder.

Export Data

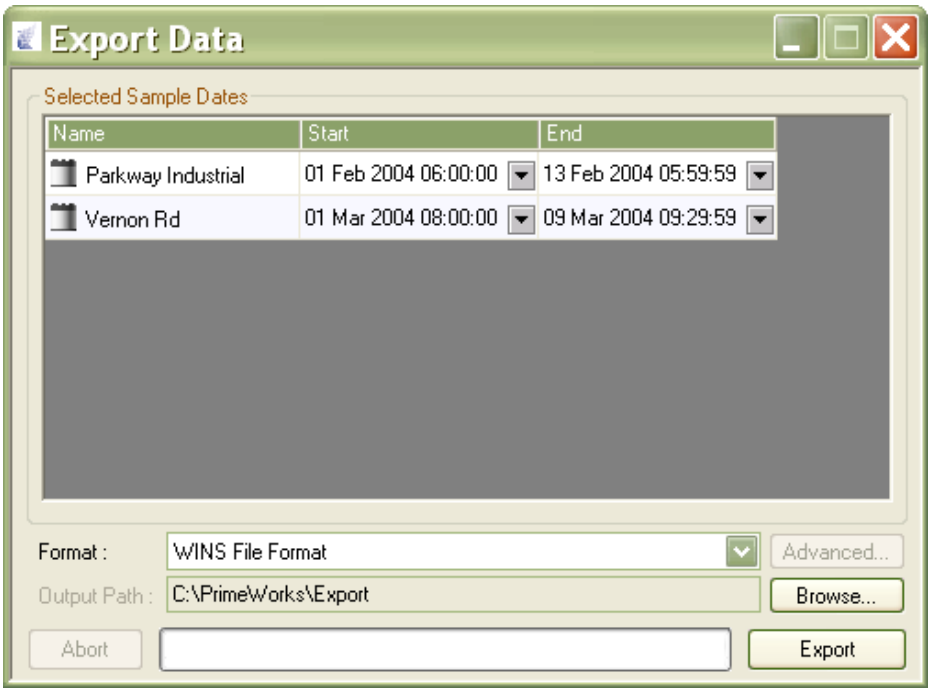
This option displays the **Export Data** dialog for setting up an operation to export data from **PrimeWorks**. From this dialog, the user can select the items to export, date/time range of the data, and output directory and file format.



Export Data dialog

Export data from **PrimeWorks** in the following way:

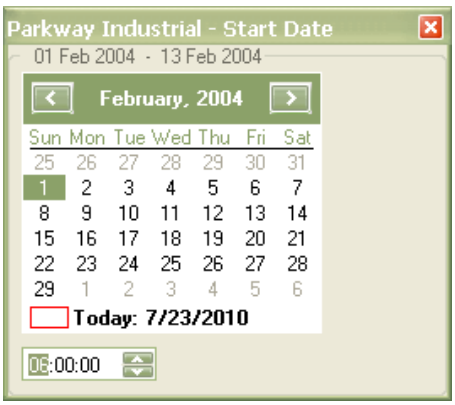
1. Drag and drop the groups, sub groups, and loggers from which to export data from the database navigation pane to the **Select Sample Dates** dialog. The items for export and the date/time range of data available for each item display in the window. *The following example shows two loggers.*



Export Data dialog

2. To export only a portion of the data available from a logger, modify the date/time range for each item in the following way:

   ❑ Click on the pull-down arrow corresponding to the **Start** date/time for modification. The date/time selection dialog displays, highlighting the date on which the earliest data is available in **PrimeWorks**.



   ❑ Click on the desired start date. Scroll through the months and years using the left and right arrows, as necessary.

   ❑ Use the up and down arrows in the time field at the bottom of the dialog to designate the start time.

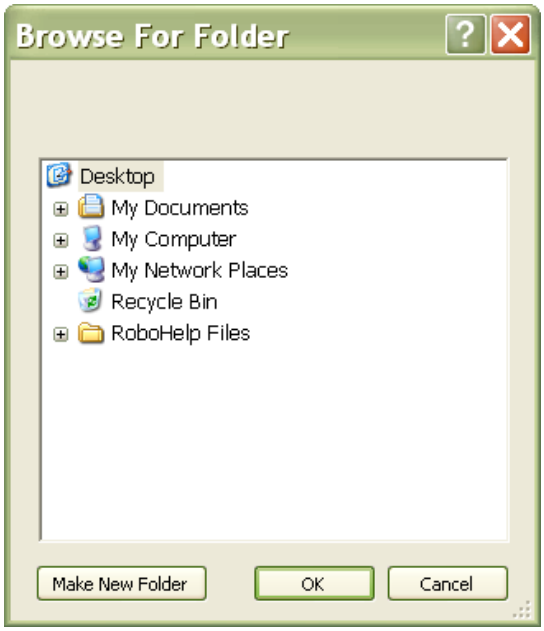
   ❑ Close the date selection dialog once the start settings are complete.

   ❑ Repeat the same process for the **End** date/time of the range.

3. Select the format in which to export the data from the **Format** drop-down list.

4. Verify that the directory location designated in the **Output Directory** section is the appropriate location to which to export the data. Designate another location in the following way:

   ❑ Click on the **Browse** button. *The **Browse For Folder** dialog displays.*



Browse For Folder dialog

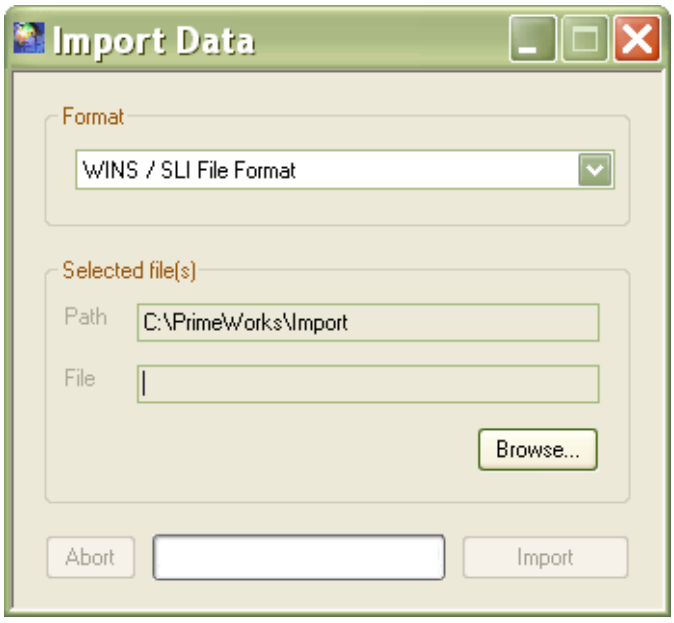
   ❑ Navigate to the appropriate directory location in which to save the exported data files. If necessary, create a new folder by clicking on the **Make New Folder** button.

   ❑ Click on the **OK** button. *The file path displays in the **Path** field in the **Output Directory** section.*

5. Click on the **Export** button to initiate the export process.

Import Data

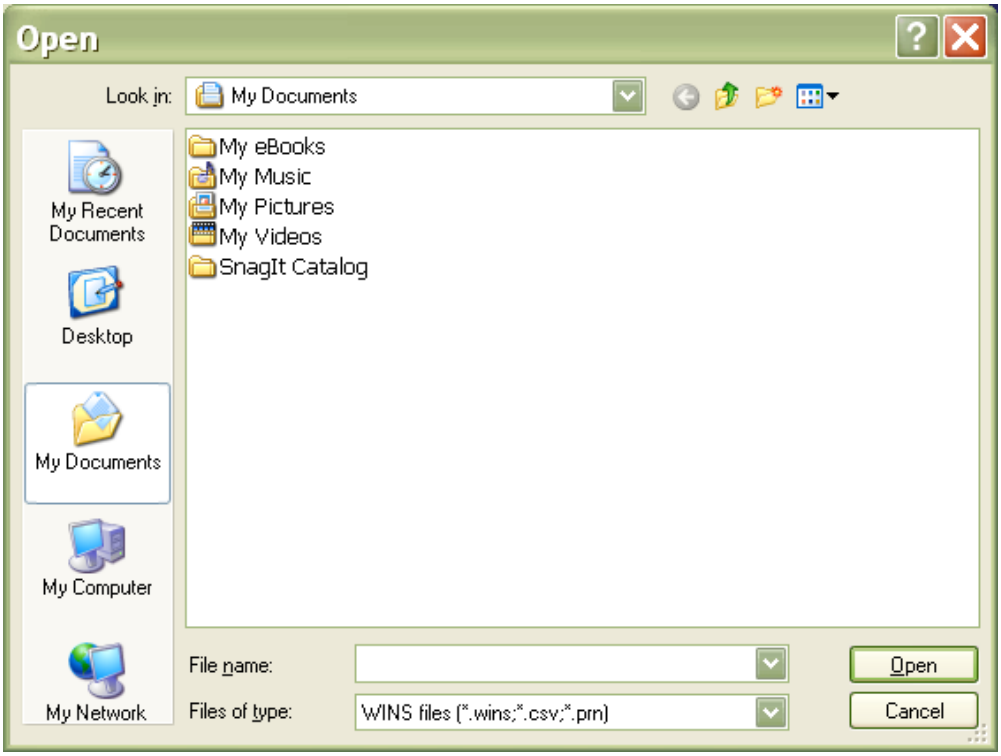
This option displays the **Import Data** dialog for setting up an operation to import data into **PrimeWorks**. From this dialog, the user can select the format in which to import the data, the location from which to import the data, and the type of files to import.



Import Data dialog

Import data into **PrimeWorks** in the following way:

1. Select the format in which to import the data into **PrimeWorks** from the **Format** drop-down list.
2. Click on the **Browse** button. *The **Open** dialog displays.*
3. Navigate to the directory location in which the data files for import are currently stored.



Open dialog

4. Select the files to import, and then click on the **Open** button. *The directory location from which the files will be imported displays in the **Path** field in the **Selected File(s)** section.*
5. Click on the **Import** button to initiate the import process. Discontinue the data import process at any time by clicking on the **Abort** button.

Edit Site IDs

This option displays the **Site IDs** dialog for creating site reference IDs that may be used when exporting site data from **PrimeWorks** databases. These IDs are not used within **PrimeWorks**. However, they may be useful or essential during the export process to ensure greater flexibility or to compensate for issues such as file name limitations or reference requirements involving the export location.

Site IDs dialog

The user may create one site ID of up to 5 alpha numeric characters for each site in the database by entering the identification name in the field in the **Site ID** column corresponding to the **Site Name**.

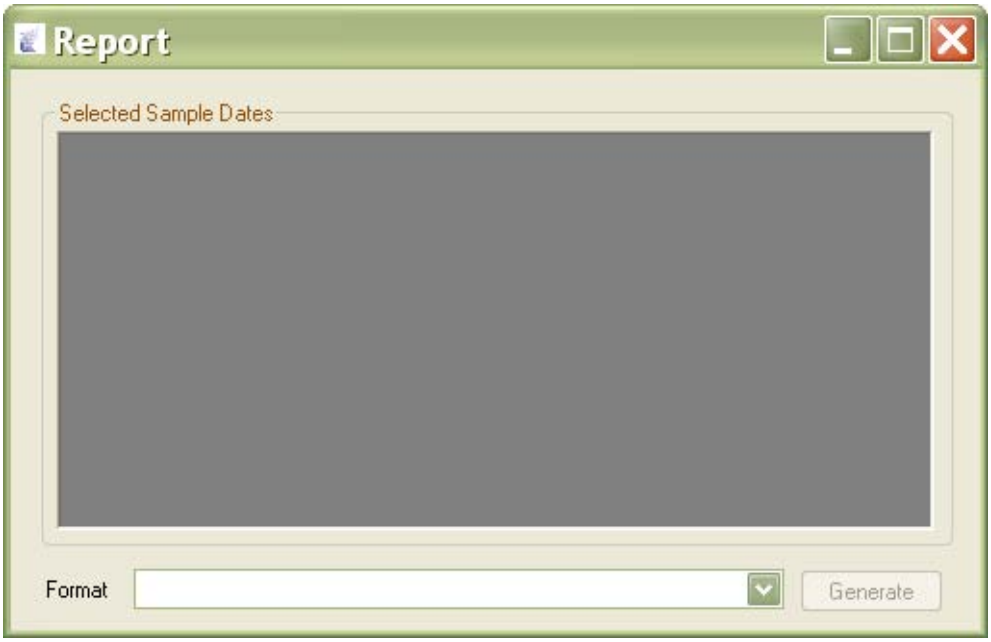
Report Menu

Report menu **Reporting** option

The **Report** menu includes only the **Reporting** option.

Reporting Option

This option displays the **Report** dialog used for generating **PrimeWorks** data reports.



For detailed information on generating reports, refer to *Chapter 8, Reporting*, on page 69.

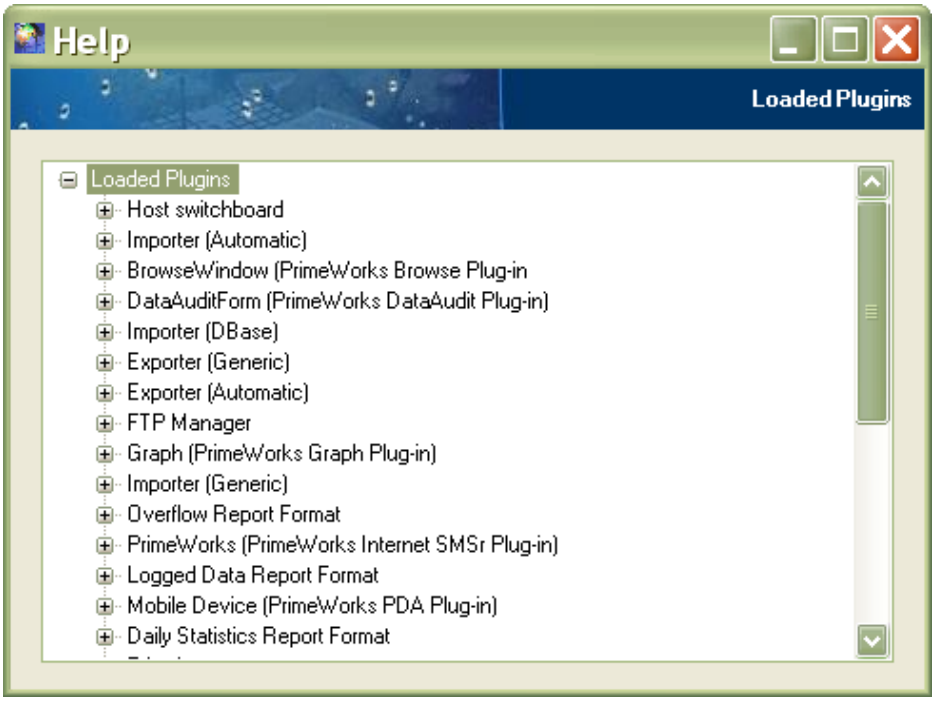
Help Menu

The **Help** menu includes three options:

- Plug Info
- About
- Manual

Plug Info

This option displays the **Help – Loaded Plugins** dialog listing the Plugins installed in **PrimeWorks** and information related to each Plugin. Click on the expansion symbol (+) on the tree corresponding to a specific item to reveal information about that item.



Loaded Plugins dialog

About

This option shows version, contact, and customer support information concerning the **PrimeWorks** software.

About dialog

Manual

This option launches an electronic version of the *ADS PrimeWorks User Manual*.

CHAPTER 5

Toolbar

This chapter provides detailed descriptions for the toolbar buttons and the find feature located directly beneath the main menu in **PrimeWorks**.

PrimeWorks toolbar buttons

Database Navigation Buttons

The database navigation buttons perform tasks related to the database. They can be used to add or remove a group, sub group, or a site.

The database item selected determines the buttons that are available (*enabled*) for use to accomplish a particular function. A *disabled* button indicates that the function corresponding to that button is not relevant or available for the selected item. For example, a user cannot add a group to a sub group.

Add and Delete Group Buttons

Add Group and **Delete Group** buttons

Clicking on the **Add Group** or **Delete Group** button adds/removes a group based on the selected position. The user can rename a group by right-clicking on the group name and selecting the **Rename** option *or* by selecting the **Rename Group** option from the **Database** menu.

Add and Delete Sub Group Buttons

Add SubGroup and **Delete SubGroup** buttons

Clicking on the **Add SubGroup** or **Delete SubGroup** button adds/removes a sub group based on the selected position. The user can rename the sub group by right-clicking on the sub group name and selecting the **Rename** option *or* by selecting the **Rename Sub Group** option from the **Database** menu.

Add and Delete Site Buttons

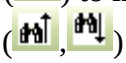
Add Site and **Delete Site** buttons

Clicking on the **Add Site** or **Delete Site** button adds/removes a logger based on the selected position. The user can rename a logger by right-clicking on the logger name and selecting the **Rename** option *or* by selecting the **Rename Site** option from the **Database** menu.

Find Function

The find function allows the user to search for a text string in the database navigation pane. This function is useful particularly when a large number of groups, sub groups, and/or loggers exist in the database.

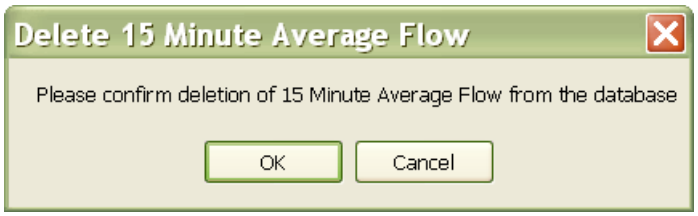
Find functions

Use the find text box and buttons to manage the find function. To search for a text string, enter the text to be found into the text box and then click on the Search button ( ) to initiate the search. Use the **Search Previous** and **Search Next buttons** () to search up and down the database hierarchy as necessary.

Remove Logging Function

Delete Logging Function button

This button enables the user to delete a logging function. Select the logging function for deletion, and then click on the **Delete Logging Function** button. Once the confirmation dialog displays, click on the **OK** button to delete the function. Clicking on the **Cancel** button closes the dialog without deleting function.



Logging function deletion confirmation dialog

CHAPTER 6

PrimeLog Operation

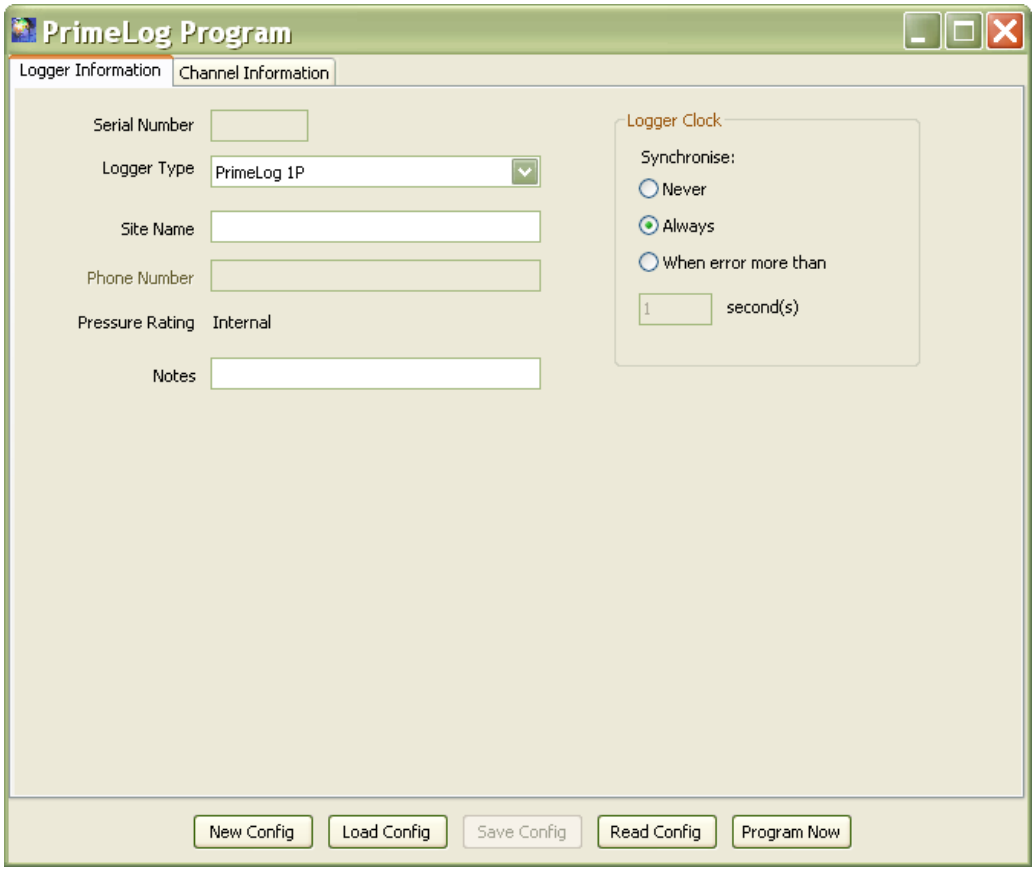
PrimeLog is used to program loggers and/or read data from loggers. This chapter describes how to use PrimeLog.

Before using PrimeLog, the user must connect the logger to the serial port. Select the proper communication (com) port from the **PrimeLog** tab on the **Properties** dialog. Refer to *Port* on page 19.

Program

The **Program** option launches the **PrimeLog Program** dialog. The PrimeLog Program function enables the user to program the logger with all the necessary parameters.

This program is very flexible, allowing the user to load a data file, program a logger, read a logger, change the settings, save data to a file for future logger programming, and perform other essential tasks.



PrimeLog Program window

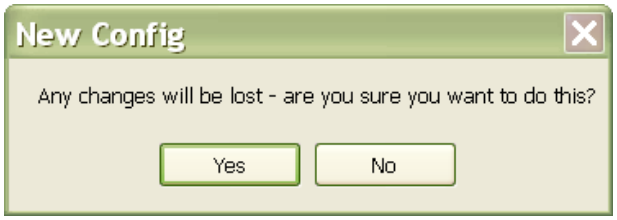
PrimeLog Program Buttons

The buttons located at the bottom of the dialog perform the following functions:

- **New Config** Sets up a new configuration file
- **Load Config** Loads a saved configuration file
- **Save Config** Saves the configuration stored in memory to a file
- **Read Config** Reads the configuration of the logger
- **Program Now** Writes the program data to the logger

New Config

Selecting the **New Config** button displays the **New Config** dialog with a warning message indicating that creating a new configuration file eliminates any changes made since saving the configuration file. To continue with the new configuration file, click on the **Yes** button; to abandon the new file, click on the **No** button.



New Config dialog

Load Config

Selecting the **Load Config** button displays the **Browse For Folder** dialog for navigating to a previously saved logger configuration file.

Browse For Folder dialog

After locating and selecting the file, click on the **OK** button to read the configuration file into the program. Configuration files have the following filename format: **[*site name*].setup.xml**.

Save Config

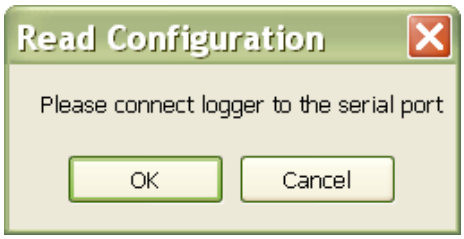
Selecting this button saves the configuration data currently stored in memory to a file. **PrimeWorks** provides the file with the filename **[*site name*].setup.xml** and saves the file to a folder with the same site name. The **Save Config** dialog

indicates the configuration has been successfully saved. Click on the **OK** button to return to the main program.

Save Config dialog

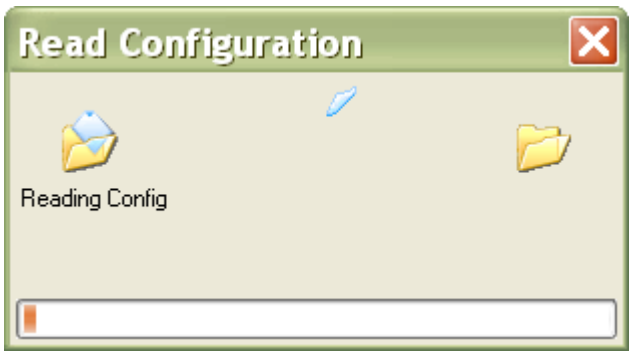
Read Config

Selecting this button displays the **Read Configuration** dialog to enable the user to read data from the logger. The logger must be connected to the PC's serial port.



Read Configuration dialog

Clicking **OK** initiates the reading process and displays the **Read Configuration** window with a scrolling bar indicating the progress of the data reading process.



Read Configuration progress window

When reading is complete, the fields in the **PrimeLog Program** dialog will be populated with the data read from the logger.

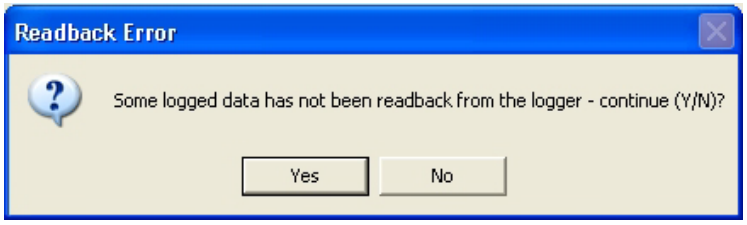
Program Now

Selecting this button displays the **Program Logger** dialog instructing the user to verify that the logger is connected to the PC serial port.

Program Logger dialog

Once this connection is confirmed, click on the **OK** button to program the logger with the current settings.

If the user attempts to program the logger before all the data is read back from the logger, **PrimeWorks** will display a warning.

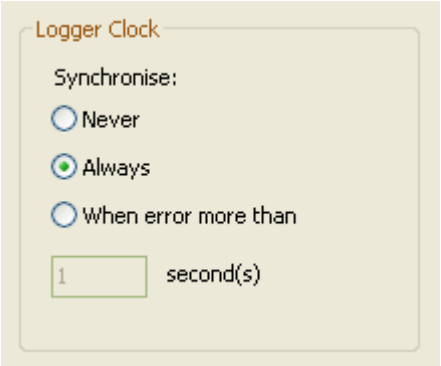


Readback Error dialog

Clicking on the **Yes** button will program the logger without reading back some of the logged data stored in the logger. This data will be lost. Clicking on the **No** button will discontinue logger programming.

Logger Clock

The **Logger Clock** section on the **Logger Information** tab enables the user to configure the software to check the logger clock and synchronize it to the user's PC clock when necessary or based on a user-defined difference.

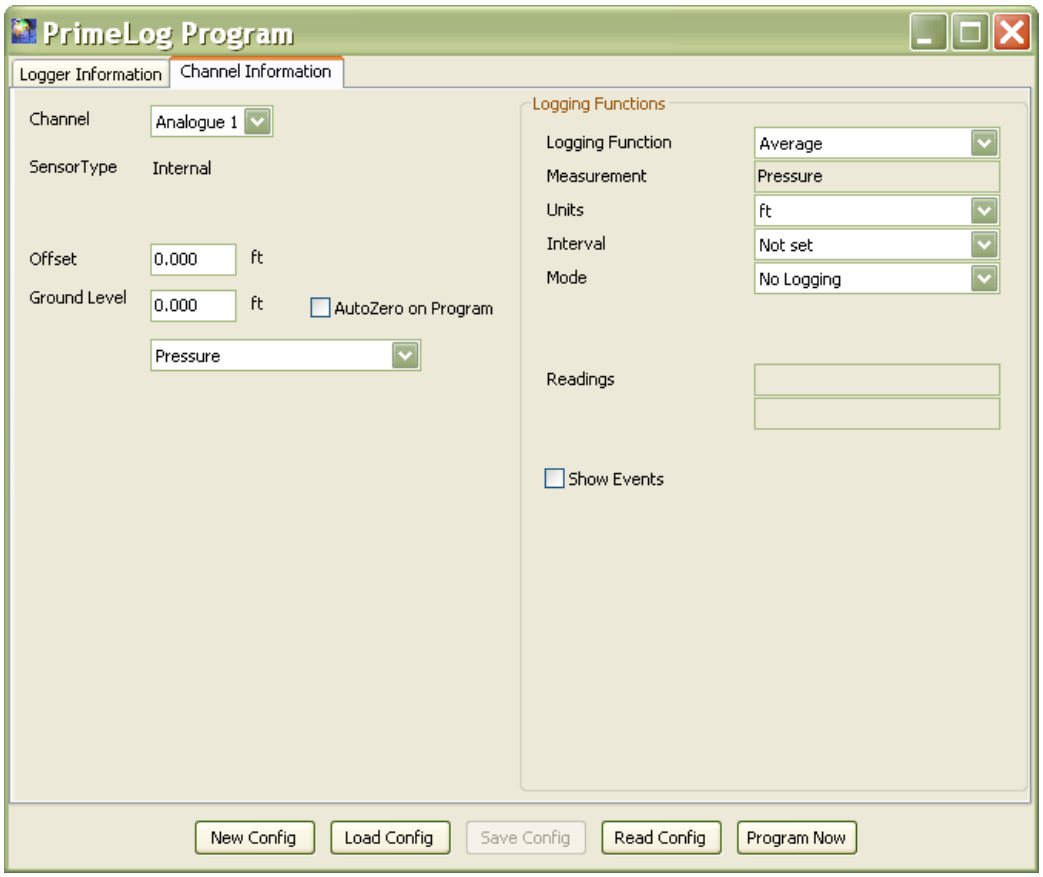


Logger Clock section on Logger Information

A warning displays when the software detects a time difference between the PC and the logger clocks.

Channel Parameters

Selecting the **Channel Information** tab displays the channel data.



PrimeLog Program dialog (**Channel Information** tab)

The **Channel** drop-down list on the **Channel Information** tab lists the channels available on the selected logger. Two channel types are available: *Analog* and *Digital*. The selected channel type determines the categories of logging that are available and the settings/parameters that display on the tab. For example, a user can log data from a bi-directional digital flow meter by selecting the appropriate meter type from the Digital 1a options. A user can log uni-directional flows using two meters at independent locations in a single flow channel by selecting the meters separately from the Digital 1a and Digital 1b options.

Digital Screen Description

Four types of logging are available through PrimeLog:

- **Flow Meter** This involves standard, periodic logging. The other three are event-driven, recording the times at which pulses occur rather than the number of pulses.
  - ❑ **Meter Type** Select the type of flow meter. This is critical to ensuring the proper powering of the meter.
  - ❑ **FCal** Enter/select the amount per pulse, and then select the units upon which the amount is based. Refer to the *Chapter 9, Appendix – Meter Scaling* Tables, beginning on page 75, for the proper amount to enter.

- **Flow Total Index** Enter the reading from the meter at installation so the total in PrimeLog will be consistent with the meter.
- **Low Flows** Select this checkbox if the meter will send less than one pulse per minute.
- **Logging Functions** Modify the logging function selection to setup the appropriate function. Average & Total data can be logged independently.
- **Show Events** Select this checkbox to program the PrimeLog to record/provide notification based on internal (threshold) events or to trigger an output on the logger based on control output events.

- **Rain Gauge** This involves logging only when a specific amount of rainfall accumulates in a rain gauge tipping bucket. The user must designate the amount of rainfall required to cause the tipping mechanism in the bucket to tip.
- **Pump** This involves logging only when a user-defined high or low indicates a pump is on or off. The user also must designate the flow rate at which the pump turns on.
- **Overflow** This involves logging only when a user-defined high or low indicates an overflow state.

Analog Screen Description

Select the type of sensor (Transducer/Voltage/Current).

- **Transducer** Enter the PCal for the transducer. Select the **Autozero on Program** checkbox to remove the atmospheric offset when programming the logger.
- **Voltage** Enter the minimum scale and maximum scale values in user units and the offset in volts that the minimum scale represents.
- **Current** Enter the minimum scale and full scale values in user units and the offset in mA that the minimum scale represents.

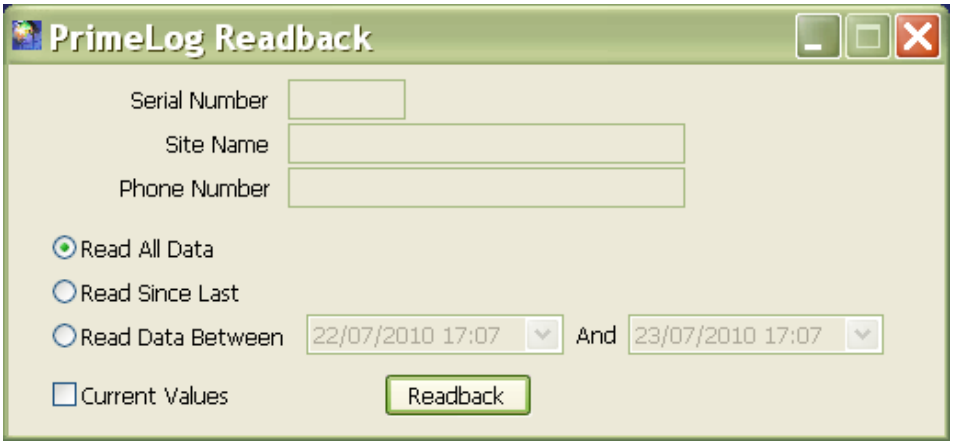
> **Note:** When using analog inputs on a PrimeLog, use the correct cable to connect to the logger source. Current and voltage cables cannot be interchanged. Improper use could cause internal damage to the logger. It also is important to use a voltage cable of the appropriate rating. Do not apply a 10-volt source using a 2-volt or 5-volt cable. This will overload the logger.

The user can select an application for all analog sensors. This will determine what is logged by the logger. When using a depth transducer to measure open channel flow, both the depth and the derived flow will be saved during readback.

Readback

The Readback function enables the user to download data from a logger into the **PrimeWorks** database.

Selecting the **Readback** option from the **PrimeLog** menu displays the **PrimeLog Readback** dialog. Empty fields indicate that no data is available because readback has not yet occurred.



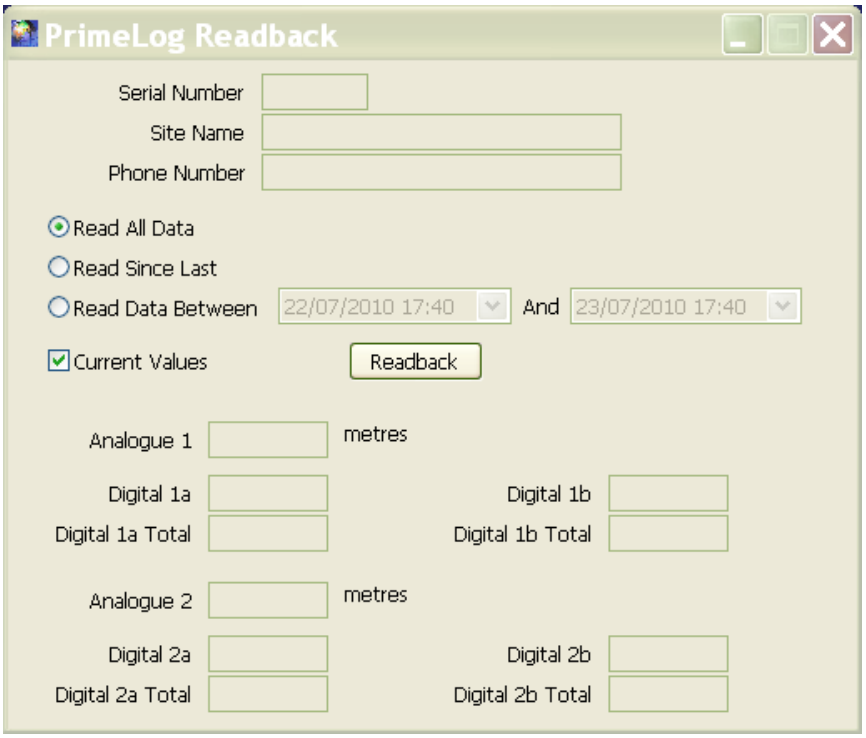
PrimeLog Readback dialog

The radio buttons on the dialog allow the user to designate whether to readback all or only a portion of the data from the logger:

- **Read All Data** Selecting this options reads back all data contained in the logger. If the logger configuration has just been read, the range of data available in the logger will display in the start date/time and end date/time fields adjacent to the **Read Data Between** radio button.
- **Read Since Last** Selecting this option reads back all data since the last readback for the selected logger.
- **Read Data Between** Selecting this option allows the user to designate the date/time range for which to readback the data from the logger. If the logger configuration has just been read, the range of data available in the logger will display in the corresponding start date/time and end date/time fields. Designate the start and end dates/times using the data selection tool accessible by clicking on the down arrows associated with each date/time field.

Current Values

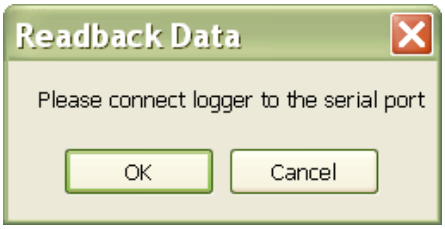
Selecting this checkbox expands the dialog to reveal additional data fields. These fields are filled with current values from the data logger. These values will update every 10 seconds.



Expanded **PrimeLog Readback** dialog

Readback

Clicking on this button displays the **Readback Confirmation** dialog instructing the user to verify that the logger is connected to the PC serial port.



Readback Data dialog

Once this connection is confirmed, click on the **OK** button to initiate the readback process from the logger.

A progress bar displays showing the status as data is read from the logger. Please note that large amounts of data may take additional time to readback.

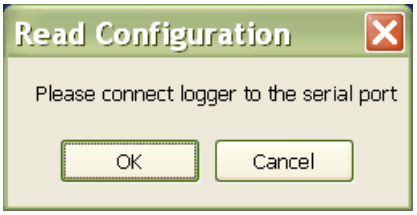
Once readback is complete and the designated data is added to the database, the data will display in the database navigation pane.

Pressure AutoCal

The Pressure AutoCal function is used to set the local air pressure value as the reference for calibration. By default, the calibration pressure is set to standard atmospheric pressure.

> **Note:** To AutoCal a logger, the pressure connection pipe for the appropriate channel must be disconnected and the logger sensor must be open to the ambient air pressure that will be used as the calibration value.

To run the AutoCal function, select the **Pressure AutoCal** option from the **PrimeLog** menu. **PrimeWorks** opens the **Read Configuration** dialog instructing the user to verify that the logger is connected to the PC's serial port.



Read Configuration dialog

Connect the logger to the serial port, and click on the **OK** button. The progress will display in the lower right section of the main window.

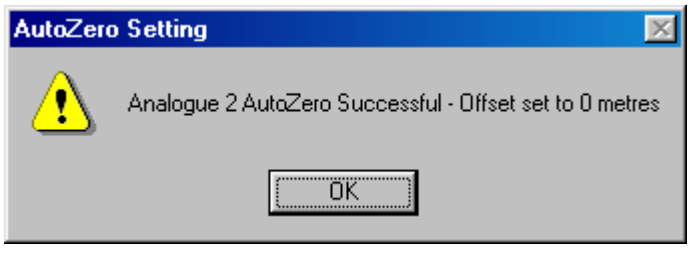
Once communication is complete, the **Pressure AutoCal** dialog will display.

> **Note:** Autocal is available only for loggers recording data from pressure or depth transducers.

The dialog displays the serial number, site name, and logger type. Select the checkbox corresponding to the **Sensor Information** channel on which to perform the AutoCal process.

Verify that the logger pressure transducer pipe is not connected to the logger, and then click on the **AutoCal Now** button to initiate the AutoCal process.

Once the process is complete, an **AutoZero Setting** dialog will display the depth value representing the calibration factor that has been measured and set.



AutoZero Setting dialog indicating a local zero value has been set

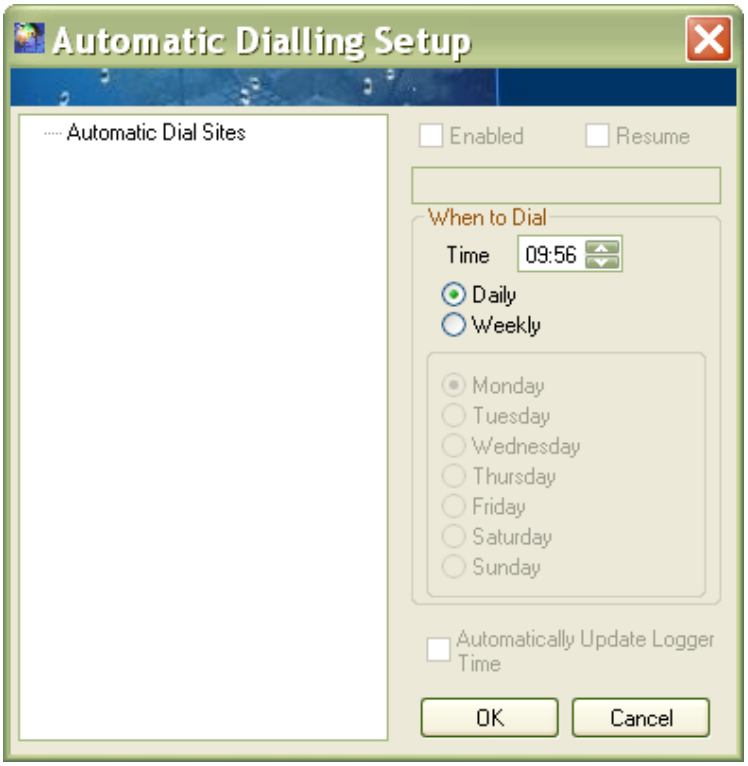
> **Note:** Remember to reconnect the logger pressure measuring pipe as required.

Reset

The **Reset** function resets the logger without affecting the database on the user's PC. It involves discontinuing any logging activities that may be occurring with the logger, deleting all data existing in the logger memory, deleting all site details, and restarting the logger clock. This places the logger into storage mode, in which it consumes the least amount of power. Resetting the logger essentially powers down and restarts the logger without re-establishing the previous logger configuration.

Automatic Dialing

This menu option displays the **Automatic Dialing Setup** dialog through which the user can configure **PrimeWorks** to call selected PSTN (public switched telephone network) sites automatically on a daily or weekly basis to readback data.



Automatic Dialing Setup dialog

Setup sites for automatic dial-up in the following way:

1. Select and drag the site(s) for automatic dial-up from the database navigation pane on the main screen to the **Automatic Dial Sites** window on the **Automatic Dialing Setup** dialog.
2. Choose the frequency at which to call the site(s) from one of the following options in the **When to Dial** section:

   - **Daily** Select this radio button to dial the site(s) one time every day.
   - **Weekly** Select this radio button to dial the site(s) once a week. Selecting this option enables the radio buttons representing the days of the week. Choose the radio button corresponding to the day of the week to dial the site(s).

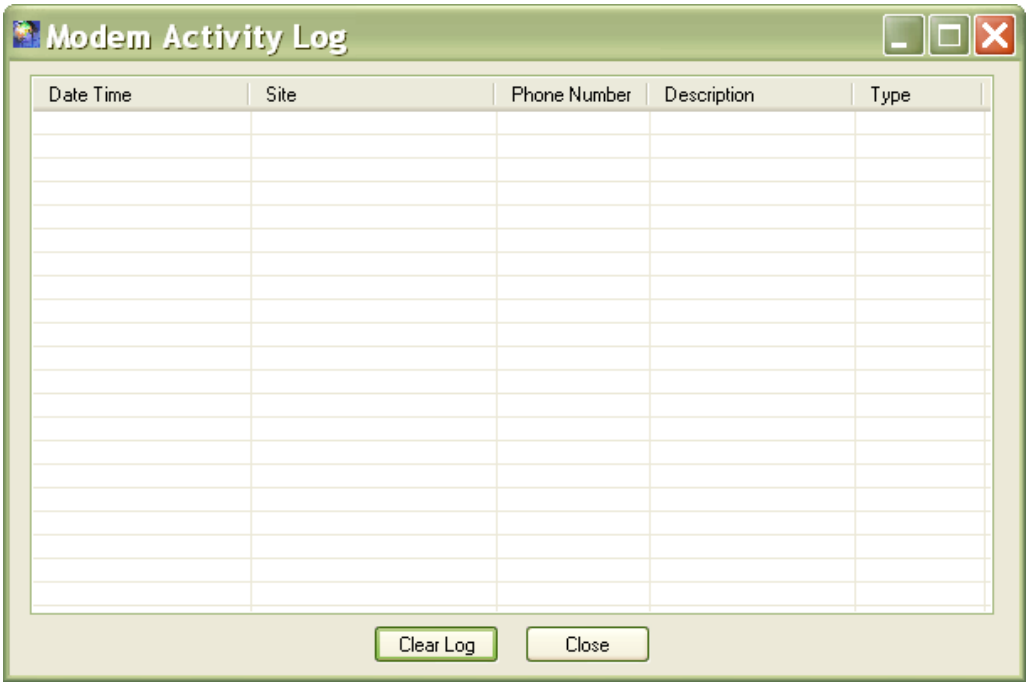
3. Use the **Time** up and down arrows in the **When to Dial** section to designate the time at which to call the site(s) during the selected day(s).
4. Select the **Enable** checkbox at the top of the dialog to ensure **PrimeWorks** calls the selected site(s) at the designated intervals and time following activation.

5. Select **Resume** to ensure that, if the automatic dialing process is terminated prematurely during a specific interval, **PrimeWorks** resumes calling sites at the next scheduled interval at the same point on the **Automatic Dial Sites** list at which the process was previously discontinued.
6. (*optional*) Select the **Automatically Update Logger Time** checkbox to ensure the PC automatically sets the logger clock during communication.
7. Select the **OK** button to activate automatic dial-up based on the selected configuration.

Once activated, AutoDial displays as a new icon in the user's Windows taskbar. Passing the cursor over the icon displays the current status of AutoDial. While AutoDial is in operation, the user cannot use **PrimeWorks** to call a logger manually.

Modem Activity Log

Selecting this option from the **PrimeLog** menu opens the **Modem Activity Log** dialog displaying all modem activity.



Modem Activity Log dialog

The user can clear the log by clicking on the **Clear Log** button.

CHAPTER 7

Graphing

One of the primary features of **PrimeWorks** is producing graphs for visual analysis of logged data. This capability includes several options, such as graphing multiple sources, scaling, selecting units, and printing.

This chapter describes the process for creating or generating a graph, which essentially involves the following three stages:

- Selecting the data
- Generating the graph
- Modifying the parameters (as required)

Selecting the Graph Data

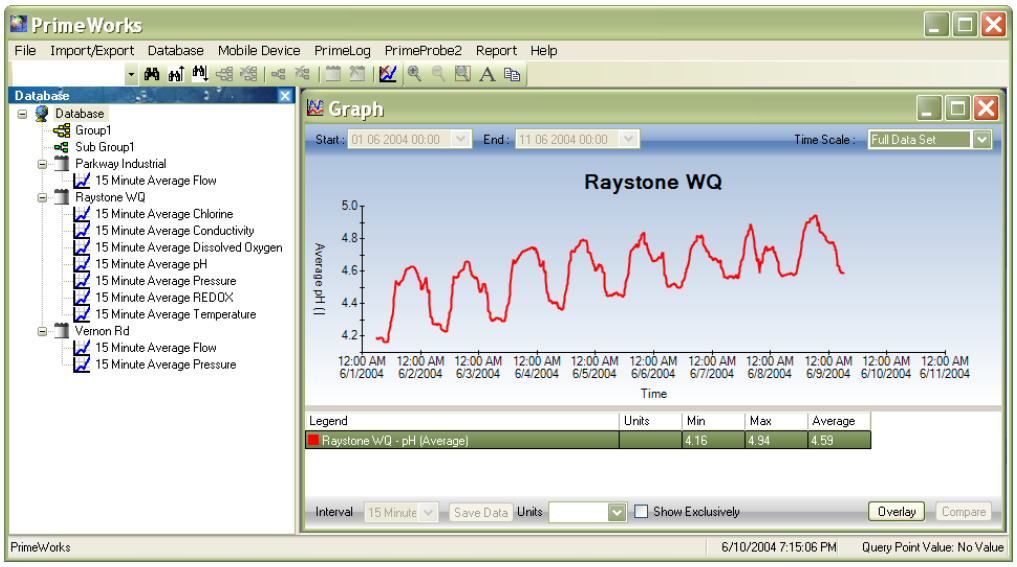
The data navigation pane contains all the data that is available for graphing. Select the exact source data to be graphed by highlighting an item in the pane at the appropriate level. All items or data contained within (or under) that level in the data tree will be included on the graph.

Generating the Graph

Once the appropriate item or database element at the desired level has been selected, right-click and select the **Graph** option from the menu. The selected data displays in graphical format.

The user can include additional elements in an existing graph by clicking and dragging them from the database navigation pane into the graph window.

The graphing feature allows the user to graph either periodic logged data or event data. For *pump event data*, **PrimeWorks** calculates the average flow and displays it adjacent to the events. For *rain gauge event data*, **PrimeWorks** calculates the average and total rainfalls for display adjacent to the events.



Logged data displayed in a graphical format

Modifying the Parameters for the Graph

This section addresses the following topics concerning the modification of graph parameters:

- Viewing area
- Legend
- Date/time range
- Current trace
- Query point (x and y values)

Viewing Area

Moving the cursor over the scale and title areas of the graph causes the cursor to change into a dot and arrow. Clicking when the left, right, up, or down arrow and dot are shown moves the graph area in the direction of the cursor. The scales re-calculate and display based on the movements.

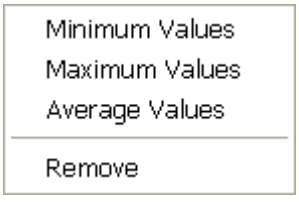
Clicking the maximize button on the graph window expands the graph to the maximum size and removes the window's borders.

Legend

The **Legend** indicates the colors representing each trace on the graph and the parameters for the trace data. When the graph includes more than 3 traces, the **Legend** window provides a scroll bar for scrolling through the colors and details of all the traces. The user also can use the mouse wheel to scroll through the **Legend** window.

Legend below graph display

Increase the boldness of a trace by clicking on the appropriate trace on the **Legend**. Right-clicking the trace name displays the following menu:



Menu displayed when right-clicking a trace entry on the **Legend**

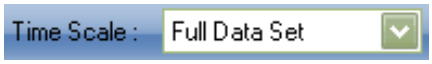
Selecting one of the value options from the menu displays a line on the graph corresponding to that value for the selected trace. Remove a trace from the graph by selecting the **Remove** option.

Start and End Times

Start and **End** dates/times

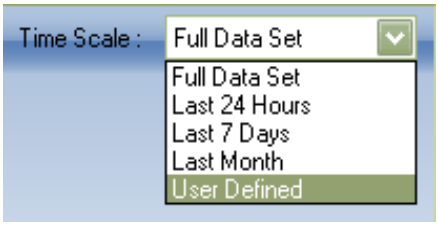
The **Start** and **End** fields at the top left of the graph display the starting and ending dates and times representing the range of data visible on the graph.

Time Scale



Time Scale drop-down list

The **Time Scale** drop-down list located at the top right of the graph display contains the scaling options for displaying data on the graph. The following options are available for selection from the list:



Time Scale options

Choosing the **User Defined** option enables the **Start** and **End** fields for modifying the range.

Start and **End** fields and **Time Scale** drop-down list

Modifying the Start/End Date

Modify the date in the **Start** or **End** field using the date selection dialog accessible by clicking on the down arrow in the corresponding field. The date highlighted in the calendar represents the date displayed in the **Start** or **End** field.

Date selection dialog

Select the appropriate date from the date selection dialog. If necessary, scroll to another month and/or year using the right and left arrow buttons. Select today's date by clicking on **Today: [*current date*]** at the bottom of the dialog.

Repeat this process for the other end of the date range as necessary.

Modifying the Start/End Time

Modify the time in the **Start** or **End** field by highlighting the hour and/or minute in the corresponding field and then entering the desired value.

Repeat this process for the other end of the time range as necessary.

The selected start and end time apply only to the data being plotted. Based on the selected values, the time axis may *autoscale* to show a slightly larger timescale.

Control Bar

The control bar displays below the **Legend** at the bottom of the graph.

Control bar

> **Note:** The **Interval** field and **Save Data** button are available only when graphing data derived from event data.

Interval

Select the interval from the drop-down list over which to average the event data.

Save Data

Click on this button to save the data after changing items on the graph.

Units

Designate the units of measure to use for the data on the graph from this drop-down list.

Units drop-down list

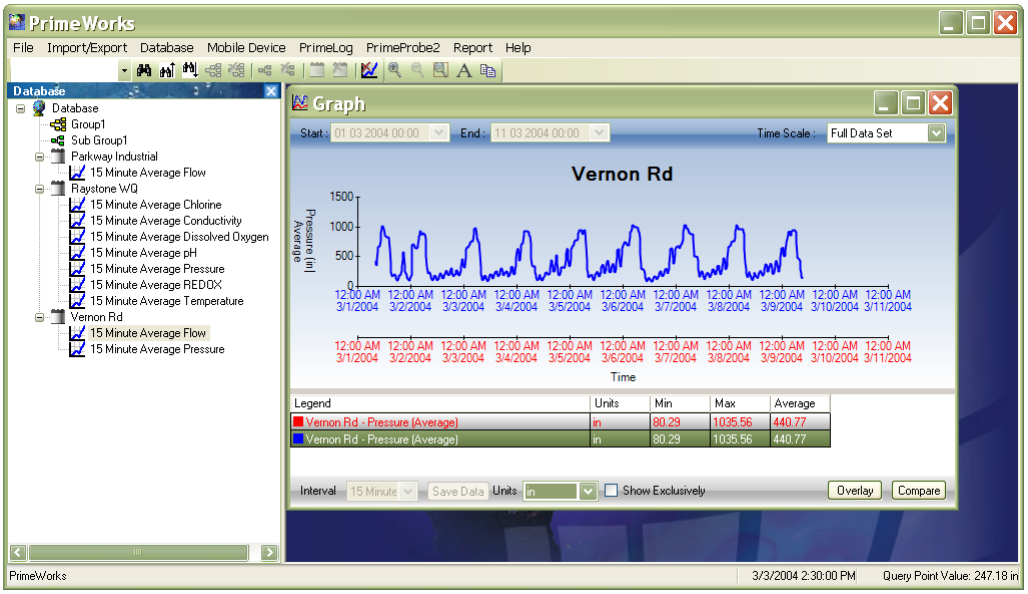
Show exclusively

Select this checkbox to show only the *highlighted* trace from the **Legend** on the graph. Leaving this box unselected displays *all* the traces on the graph.

Overlay Button

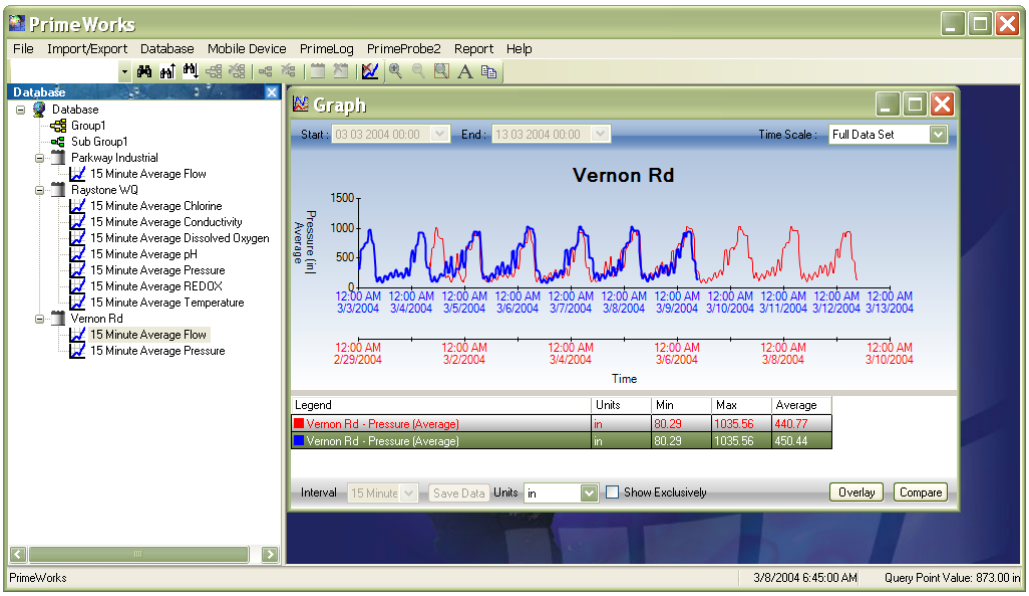
The overlay function allows the user to view data for a particular trace over different time periods on the same graph for comparison.

To implement this function, click on the **Overlay** button at the bottom right below the graph.



Graph showing the overlay feature

On the overlay graph, click to the left and right of the top trace to shift it within the graph for comparison of the traces. The corresponding timescale also moves to show the relative times of the traces.



Moving the trace for comparison

Right-Click Menu (Graph)

Right-clicking on the graph displays the following menu options:

Right-click menu

Zoom In

Selecting this option shifts the cursor into zoom mode, allowing the user to click and drag a section on the graph into which to zoom. Once the mouse button is released, the graph will automatically zoom into that designated region. This option performs the same function as clicking on the zoom button.

Zoom Out

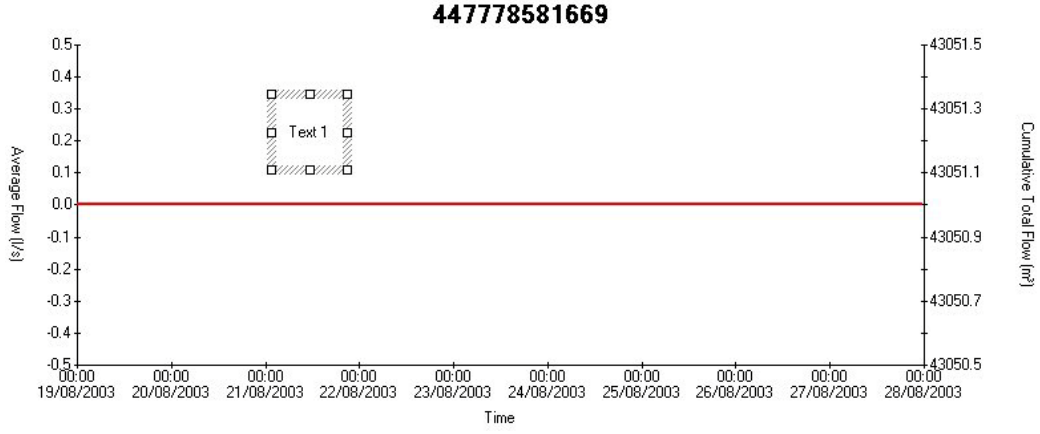
Selecting this option undos the most recent zoom on the graph. It performs the same function as clicking on the zoom out button.

Restore

Selecting this option restores the original graph display. It performs the same function as clicking on the full view button.

Insert Text

Selecting this option creates a text box on the graph. The user can add/edit text as required, modify the shape of the text box, and move the text box around using standard Windows editing features.



Right-clicking on a text box allows the user to attach a comment to a specific point on the graph. When the graph is closed, **PrimeWorks** will save the comment to the file so that it will display again the next time the user graphs the data.

Print

Selecting this option prints out the current graph.

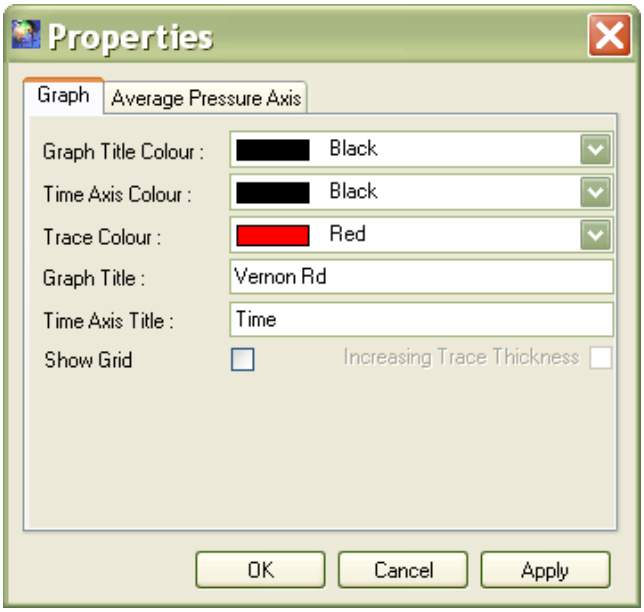
Print Preview

Selecting this option displays a printable version of the graph on screen based on the current settings.

Properties

Selecting this option displays the **Properties** dialog, which includes several tabs containing features that allow the user to modify the presentation and structure of the graphs.

Graph Tab

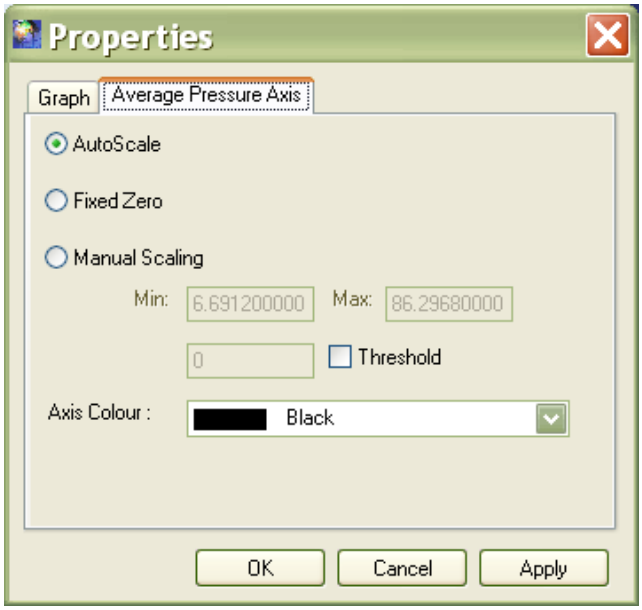


Properties dialog (**Graph** tab)

The **Graph** tab enables the user to designate various graphing parameters, including titles and colors. Only the color of the current trace can be changed. To change the color of other traces, close the **Properties** dialog, select other data, and re-open the **Properties** dialog.

One **Property** tab is available for each axis displayed on the graph.

Average Axis



Properties dialog (**Average [*trace name*] Axis** tab)

PrimeWorks provides three options for scaling the axis:

- **Autoscale** Selecting this option allows the software to select the best fit.
- **Fixed Zero** Selecting this option designates the lower limit of the axis as zero and autoscales the higher limit of the axis.
- **Manual Scaling** Selecting this option enables the corresponding **Min** and **Max** fields to allow the user to designate both the upper and lower limits manually.

Select the **Threshold** checkbox to display a line representing a threshold on the graph based on a user-defined value.

Choose the color for the axis on the graph from the **Axis Color** drop-down list.

CHAPTER 8

Reporting

PrimeWorks enables the user to generate, view, and print out reports of logged data. This chapter describes the process for producing reports, which primarily involves four stages:

- Selecting the data
- Designating the parameters
- Generating the report

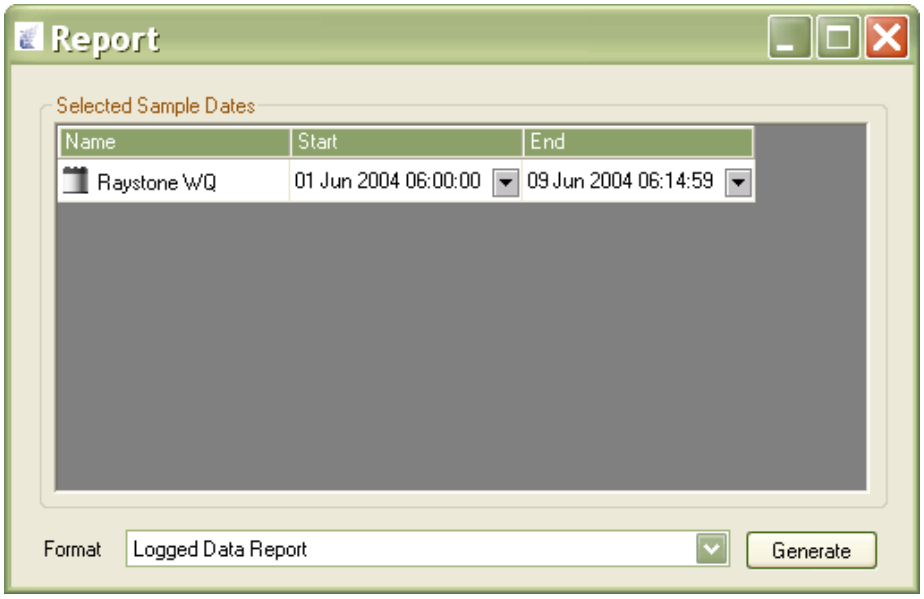
Selecting the Data

The first step involved in generating a report is selecting the data to include in the report. Select the data for the report from the appropriate level in the database navigation pane, right-click on the item, and select the **Report** option from the menu. This displays the **Report** dialog.

The user may select other items from the navigation pane while the report dialog is open, and **PrimeWorks** will add those items to the report. However, to start a new report, first close the open **Report** dialog.

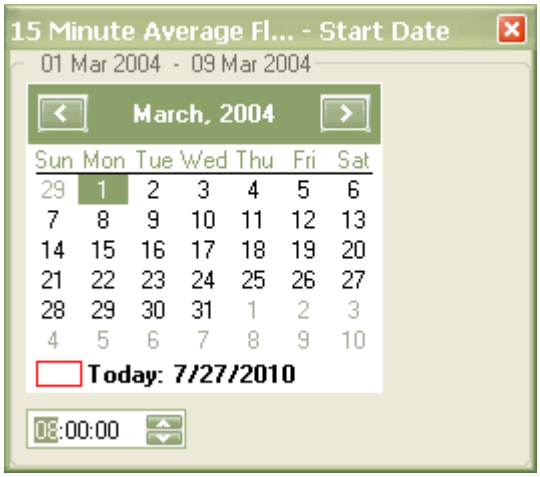
Designating the Parameters

The **Report** dialog displays the items currently selected for the report and the default start date/time and the end date/time. The default start and end dates and times represent the range of data currently available for the selected item(s). The user can modify the date and time range for the report from these fields.



Report dialog

To modify the report date and/or time range, click on the down arrow corresponding to the **Start** or **End** field to display the date selection dialog.



Date selection dialog

Select the appropriate date from the date selection dialog. A user can select dates only for which data is available. To select today's date, click on **Today: [*current date*]**. If necessary, use the right and left arrow buttons to scroll through the calendar to select a date in another month and/or year.

Designate the appropriate time from the time field at the bottom of the date selection dialog. For each hour, minute, or second, select the corresponding field and enter the appropriate value or use the up and down arrows to scroll to

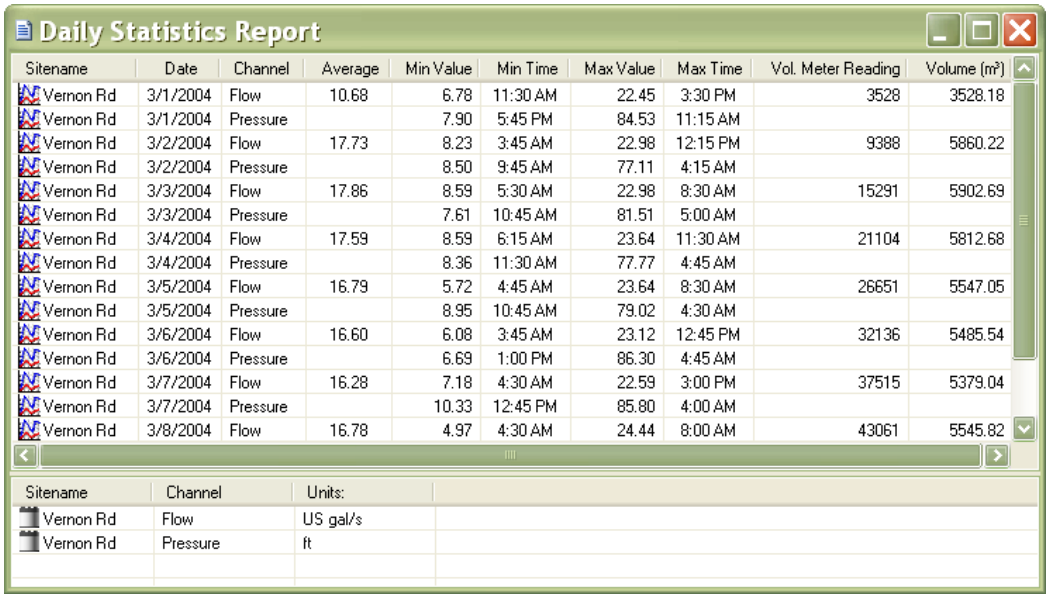
the appropriate number. Once date and time selection is complete, close the date selection dialog.

Repeat this process for the other end of the range, when necessary.

Select the type of report to generate from the **Format** drop-down list at the bottom of the **Report** dialog.

Generating the Report

To generate the report based on the selected parameters, click on the **Generate** button.



Daily Statistics Report

Sitename	Date	Channel	Average	Min Value	Min Time	Max Value	Max Time	Vol. Meter Reading	Volume (m³)
Vernon Rd	3/1/2004	Flow	10.68	6.78	11:30 AM	22.45	3:30 PM	3528	3528.18
Vernon Rd	3/1/2004	Pressure		7.90	5:45 PM	84.53	11:15 AM		
Vernon Rd	3/2/2004	Flow	17.73	8.23	3:45 AM	22.98	12:15 PM	9388	5860.22
Vernon Rd	3/2/2004	Pressure		8.50	9:45 AM	77.11	4:15 AM		
Vernon Rd	3/3/2004	Flow	17.86	8.59	5:30 AM	22.98	8:30 AM	15291	5902.69
Vernon Rd	3/3/2004	Pressure		7.61	10:45 AM	81.51	5:00 AM		
Vernon Rd	3/4/2004	Flow	17.59	8.59	6:15 AM	23.64	11:30 AM	21104	5812.68
Vernon Rd	3/4/2004	Pressure		8.36	11:30 AM	77.77	4:45 AM		
Vernon Rd	3/5/2004	Flow	16.79	5.72	4:45 AM	23.64	8:30 AM	26651	5547.05
Vernon Rd	3/5/2004	Pressure		8.95	10:45 AM	79.02	4:30 AM		
Vernon Rd	3/6/2004	Flow	16.60	6.08	3:45 AM	23.12	12:45 PM	32136	5485.54
Vernon Rd	3/6/2004	Pressure		6.69	1:00 PM	86.30	4:45 AM		
Vernon Rd	3/7/2004	Flow	16.28	7.18	4:30 AM	22.59	3:00 PM	37515	5379.04
Vernon Rd	3/7/2004	Pressure		10.33	12:45 PM	85.80	4:00 AM		
Vernon Rd	3/8/2004	Flow	16.78	4.97	4:30 AM	24.44	8:00 AM	43061	5545.82

Sitename	Channel	Units:
Vernon Rd	Flow	US gal/s
Vernon Rd	Pressure	ft

Example of a **Daily Statistics Report**

The kind of data posted on the report varies based on the report type (format) generated. Some of the most common information provided on reports includes the site name, date/time, channel, event type, minimum/maximum values, average values, and threshold. Some reports also include options for filtering report results based on event types.

Appendix – Meter Scaling Tables

This appendix contains scaling tables for the following kinds of meters:

- Elster/Kent Helix & Domestic Meters
- Schlumberger/Actaris/Stream Domestic & Helix Meters
- Sensus (Socam/Meinecke) Meters

Note: To obtain the scaling tables for other meters, please contact the ADS support center.

Elster/Kent Helix & Domestic Meters

Meter		PU10/LRP	PU100/HRP
	(mm)	FCAL	
Helix 2000	40-80	10	1
	100-300	100	10
Helix 3000	40-80	10	1
	100	10	1
	150	100	10
Master 2000	40-50	1	0.1
	80-100	10	1
		PVG100	PV14/BPG20
Helix 4000	80-125	10/1000	1
	150-300	100/10000	10
		PSM	MSM
PSM-PS15-PS20 (V100)	15/20	0.5	
PSM-PS25-PS30 (V100)	25-30	5	
PSM-PS40 (V100)	40	5	
PSM-LT (V210)	15 & 20	0.5	
MSM-T (V100)			1
KVM-T (V200)			1
MSM-RS			10

Supplementary Notes:

FCAL = NUMBER OF LITERS PER PULSE

Kent Meters:

* Some earlier 100-mm meters require the following:

  FCAL = 100(PU10/LRP) or 10(PU100/HRP). These meters can be distinguished by the center pointer dial registration = 1000 liters/rev.

** Applies to 7-digit counters only. The other FCALs apply to the 8-digit counters.

Kent combination meters use a Helix 3000 meter as the main meter and a PSM-T as the secondary meter. Select the appropriate FCAL from the table above for each of the meters.

The Master 2000 meter has been discontinued.

Schlumberger/Actaris/Stream Domestic & Helix Meters

Meter		CYBLE HF	CYBLE LF		
	(mm)	K=1	K=2.5	K=10	K=25
Aquadis (4X4)	15	0.1	0.25	1	2.5
Aquadis	15-40	1	2.5	10	25
P40M (4x4)	15	0.1	0.25	1	2.5
P40M	15	1	2.5	10	25
FlostarM	40-100	10	25	100	250
Woltex	50-100	10	25	100	250
	150-300	100	250	1000	2500
	400-500	1000	2500	10000	25000

Sensus (Socam/Meinecke)

<table>
<tr><th colspan="2">Meter</th><th>K510</th><th>K505R</th></tr>
<tr><th></th><th>(mm)</th><th colspan="2">FCAL</th></tr>
<tr><td>510/510PR</td><td rowspan="4">15-20</td><td>1</td><td rowspan="4">0.5</td></tr>
<tr><td>501L</td><td>10</td></tr>
<tr><td>501LM</td><td>100</td></tr>
<tr><td>501JM</td><td>1000</td></tr>
<tr><td>510/510PR</td><td rowspan="2">25-30</td><td>10</td><td rowspan="2">5</td></tr>
<tr><td>501JM</td><td>100</td></tr>
<tr><td colspan="2"></td><th>R01.1</th><th>OPTO 06</th></tr>
<tr><td rowspan="3">Cosmosil</td><td>50-125</td><td>100/1000</td><td>1</td></tr>
<tr><td>150-250</td><td>1000/10000</td><td>10</td></tr>
<tr><td>300-800</td><td>10000/100000</td><td>100</td></tr>
<tr><td colspan="2"></td><th>RD 01</th><th>OD 07</th></tr>
<tr><td>Cosmos</td><td>50-125</td><td>100</td><td rowspan="3">1</td></tr>
<tr><td rowspan="3">WP/WS-Dynamic</td><td rowspan="2">40-125</td><td>100/1000</td></tr>
<tr><td>10/1000</td></tr>
<tr><td rowspan="2">150-300</td><td>1000/10000</td><td rowspan="2">10</td></tr>
<tr><td>100/10000</td></tr>
</table>

Supplementary Notes:

FCAL = NUMBER OF LITERS PER PULSE

Socam meters:

*The 510 pulse unit is factory fitted and cannot be removed. The FCAL is determined at the factory and the table above shows the values available. Check the individual meter before selecting the appropriate FCAL.

Index

A

about, 39
automatic backup, 21
automatic dialing, 56
automatic export, 30
automatic import, 31

B

buttons, 41
  application window, 12

C

creating a graph, 59

D

database backup log, 25
database menu, 22
  bulk move, 23
  data audit, 24
  delete, 23
  format data type, 24
  rename, 23
database navigation pane, 9, 16
  toolbar buttons, 42

E

edit site IDs, 36
exit, 21
export
  automatic, 30
export data, 32

F

file menu, 13
find function, 43

G

generating a graph, 61
generating a report, 73
graphs, 59
  date/time range, 63
  inserting text, 66
  generating the graph, 61
  legend, 62
  modifying parameters, 62
  overlay, 65
  page setup, 14
  printing, 67
  properties, 17, 67
  selecting data, 60
  time scale, 63
  zooming in, 66
  zooming out, 66

H

hardware requirements, 4
help
  about, 39
  plugins, 38
help menu, 38

I

import data, 34
  automatic, 31
  PDA, 26
  remote location, 26
import/export menu, 29
installing PrimeWorks, 3, 5
interface overview, 7

K

Kent Meters, 76

M

main window, 8
menus, 11
menus, 8
  database, 22
  file menu, 13
  help, 38
  import/export, 29

mobile device, 26
PrimeLog, 28, 45
report, 37
messages, 16
meter scaling tables, 75
Master Meters, 76
Schlumberger/Actaris/Stream Domestic & Helix Meters, 77
Sensus (Socam/Meinecke), 78
mobile device menu, 26
import from PDA, 26
import from remote location, 26
modem, 19
modem activity log, 58

O

overview, 1

P

page setup
graphs, 14
reports, 14
PDA, 26
plugins, 38
pressure AutoCal, 54
PrimeLog menu, 28, 45
automatic dialing, 56
modem activity log, 58
pressure AutoCal, 54
program
readback, 52
reset, 55
PrimeLog, 19
channel parameters, 49
logger clock, 49
operation, 45
port, 19
PrimeProbe2, 20
PrimeWare Import, 29
PrimeWorks
installation, 3, 5
interface, 7
overview, 1
print, 13
print preview, 13
programming PrimeLog, 46
buttons, 46
channel parameters, 49
logger clock, 49
properties, 16

R

readback, 52
receiving alarm calls, 20
report menu, 37
reporting, 37, 69
designating parameters, 71
generating the report, 73
page setup, 14
selecting data, 70
resetting loggers, 55

S

scaling tables, 75
search, 43
site IDs, 36
SMS messaging, 18
Socam meters, 78
software requirements, 4

T

technical support, 2
toolbar, 8
buttons, 41
database navigation, 42
delete logging function, 44
find function, 43

U

user access requirements, 4

V

version, 39
view, 15

W

wireless communication
properties, 18
working/viewing pane, 10