

AirVision®



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Introduction to

AirVision Concepts

Welcome to AirVision, the first software that addresses current air monitoring needs while accommodating future technical innovations. Developed by industry veterans and engineered from the ground up in response to users' needs, AirVision is the first software to successfully combine:

- ◆ Open data acquisition and import
- ◆ Combined -Data and Quality Assurance tools
- ◆ Post-processing/Workflow
- ◆ User-defined shortcuts for communication activities
- ◆ Sophisticated data relationships

Open Data Acquisition and Import

AirVision supports an open system of modular drivers that can be added to provide connectivity to any source of data. The driver manages the details of data collection and uses standard interface to exchange data with AirVision's core. Third parties and end users can construct new drivers for AirVision, providing an open solution to manage future requirements. AirVision is designed specifically along the concept that eventually networks (or significant parts of networks) will consist of smart instruments connected to a central AirVision data management hub through broadband connections.

To normalize these data sources, AirVision utilizes an open system that allows providers to develop drivers for a particular data source. The driver incorporates all the necessary knowledge and logic to collect data and return data to the database through a standardized data access layer.

Combined Data Editing and QA Tools

To optimize quality assurance, AirVision opens up the process between data collection and final reporting through an open modular approach. Open Data Processors can be scheduled and triggered by the Task Manager to automate quality assurance while also controlling the points of data access and display, such as AirNow and web presentation.

The Automatic Data Validation Processor Module (ADVP) assigns a quality grade (or flag) for each data point based initially on instrument/data logger flags, but allows you to generate rules that affect the quality code. The ADVP can be triggered to run automatically after data collection to grade each data point, and the quality grade can be used to prevent suspect or bad data from being published to the web or shared with other organizations.

The ADVP can also be used to focus quality assurance efforts on the most suspect data points. Data can be compared against other parameters at the same site, different sites (spatial testing), or historical composite values for that particular parameter and/or site (e.g., comparing this hour's value to the same hour and day of the week over the previous five years). ADVP functions also include persistency checks.

Post-processing Workflow

AirVision's post-processing of data is not limited to data editing and other manual functions. Its powerful and expandable data post-processing capabilities optimize the quality assurance process.

AirVision opens up the process between data collection and final reporting through an open modular approach similar to Open Data Sources. Open Data Processors can be scheduled and triggered as defined by you in the Task Manager to automate quality assurance while also controlling the points of data access and display, such as AirNow and web presentation.

These post-processing tasks can include:

- ◆ AQI calculations and forecasts
- ◆ Automatic data validation
- ◆ Zero or other calibration data adjustments
- ◆ Automated AQS coding
- ◆ Web publishing, tables, real-time charts and maps
- ◆ AirNow or real-time Exchange Network transfers
- ◆ Email alarms
- ◆ Emailed reports
- ◆ Rolling up small interval data into longer term averages or compiling statistics (standard, deviation, etc.)

The open approach also ensures that known data paths can be easily updated to meet changing requirements, such as future alterations in the AQI calculation process (changes based on new standards, possibly including more complex algorithms that take into consideration the synergistic health effects of PM and ozone, requiring a multi-variate algorithm to calculate a more representative measurement of health effect).

Standardized Parameter Templates

The parameter editor allows you to define parameter data. In AirVision a parameter can come from any kind of data source--it is no longer correlated with data logger channels. The parameter editor contains basics such as units, EPA reporting codes, and graph limits. This editor allows you to enter/modify a list of parameter types that each parameter can be referenced to, so the application can more easily correlate parameters with different names (e.g., "O3" vs. "OZ" vs. "OZONE").

In E-DAS Ambient, many of these configurations had to be repeated for the same parameter at multiple sites, or an assumption was made regarding parameter names, such as ozone, to avoid the need for repetitive configuration entries. AirVision avoids the problems associated with this approach by using **Parameter Templates**.

Linking parameters to parameter types makes reporting easier and eliminates the necessity to link individual selections together (e.g., for AirNow reporting). Instead, details can be configured for an EPA parameter type. The Parameter Template Editor can be used to add new template definitions if a suitable one cannot be found in the default list.

Parameter information can be auto-filled by selecting a parameter template and the option to auto-fill EPA codes and units. Units are selected from a pick list, so that unit conversions (e.g., ppm to ppb) and unit types (e.g., whether rainfall or solar radiation is totaled, not averaged) are handled automatically. The parameter editor also supports the designation of alternate analyzer units that differ from reporting and editing units for digital data acquisition where the analyzer reports data in units different from those the customer prefers (ppm vs. ppb). The conversion is handled at the time of data acquisition (polling, file import) and data is stored in the regular EPA units in the database.

In both the site and parameter editors, you will be able to create meta-data fields to handle customer-specific data fields, such as analyzer serial number and installation date.

Sophisticated Data Relationships

Our Agilaire customers have requested that AirVision handle new and more complex data relationships such as managing data from parameters in a hierarchical fashion. For example, PM filter data that may exist both as a total mass/concentration value, but also may consist in detailed breakdowns from speciation monitors or XRF (X-ray fluorescence) lab data. AirVision supports these relationships as part of its original design, a feature unique in its industry rather than as an afterthought or modification to an existing database.

Parameter configuration also allows the designation of a parent parameter to form parent-child relationships that can be used to drill down in the data editor. A typical example is designating analyzer diagnostic parameters, such as sample flow and box temperature, to be children of the primary analyzer pollutant value (e.g., NOx), so that a suspect reading could be investigated by drilling down in the data editor. Another use could be to group parents & children in a columnar data report.

Chapter 1

Installing AirVision

AirVision is required to be installed on Windows 7, 8 or 10, Server 2008R2 or higher with a recommended 8GB of RAM or more, under the administrative login of the system, with 500GB hard drive **minimum** with Intel 5 processor, but Intel 7 is recommended. Before AirVision can be installed, the following software must be installed on your computer: **SQL Server 2008R2 SP3 or higher** with all available service packs, as well as **.NET Framework version 4.8**. Consult www.agilaire.com for up-to-date recommended system requirements.

Installing Microsoft .NET Framework

If you don't already have .NET Framework version 4.8 installed on your computer, you can download it from the Microsoft website. Follow the instructions in the installation wizard.

Installing SQL Server

⇒ **Important!** Although AirVision will operate with either SQL Server or SQL Express, SQL Express has a file size limit of 10G, so if you convert files from E-DAS Ambient to AirVision (i.e., to SQL files) you may run out of room quickly in SQL Express, especially if you are converting and collecting minute data. Even though SQL Express is a free download, Agilaire recommends that you start with the full version of 2017 or later.

SQL Express will stop functioning when it has reached its capacity of 10G.

To install SQL Server or SQL Express, insert the media with the installation set and follow the instructions in the wizard. In the first screen check the box to accept the license agreement and click **Next**.

The default features are sufficient in the **Feature Selection** screen, but you can select the program features you want installed. The most important feature to install is **Client Tools** (or install SSMS separately).

Click **Next**.

- Selecting the 'default' install instance is acceptable.
- System and Local Service accounts should be selected if not prepopulated.
- A desired user should be added as **admin**.

Collation must be set to **Latin1General_CP1_CI_AS**.

The remaining setup screens are self-explanatory. Follow the directions and click **Finish** in the **Completing Microsoft SQL Server Setup** screen.

► **NOTE:** If you set up SQL in **Windows Authentication mode**, you must log in to SQL with Windows Authentication, not SQL Server Authentication, or the AirVision Service won't start.

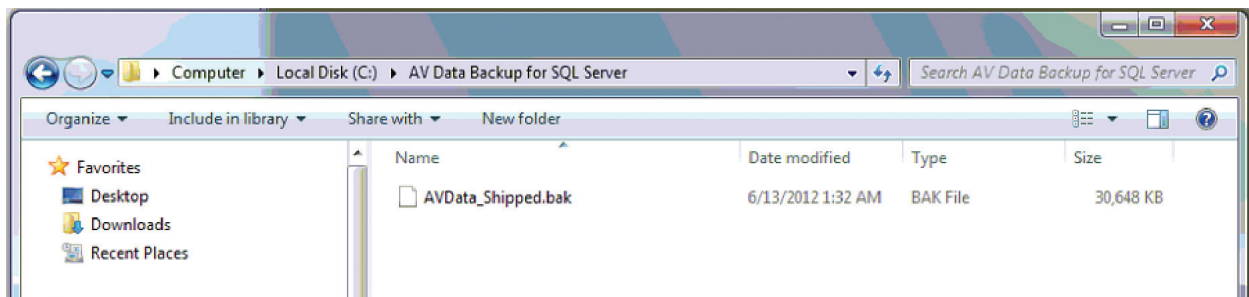
⇒ **Important!** If SQL Express is installed on the same computer as AirVision Server, the **SQL Express login name** must be **.\SQLEXPRESS** instead of your computer name.

SQL will request that the Windows Component **Internet Information Services (IIS)** be added, but IIS is not necessary for AirVision at this time and does not have to be enabled.

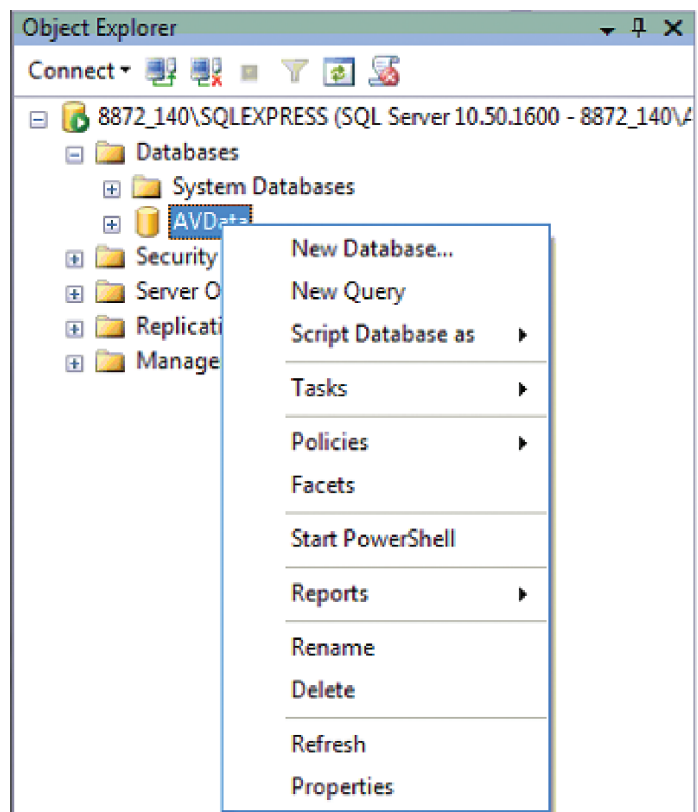
Installing the AirVision Database

After you have installed SQL Server:

1. From the Windows **Start** menu, select **All Programs > Microsoft SQL Server** (or **Microsoft SQL Server 2008R2**) > **SQL Server Management Studio**.
2. Right-click the **Databases** folder and select **New Database**. For the **Database name**, enter **AVData** and click **OK**.
3. **Click** to select the database you just created (AVData).
4. Confirm you have an 'As Shipped' or 'blank' database backup.



6. Open SQL Server, log in, expand "Databases" on the left, right click on the AVData database and choose **Tasks->Restore Database**.



7. Select **'From device'** and click the '...' button. The '!' button is called the ellipsis button.

Specify the source and location of backup sets to restore.

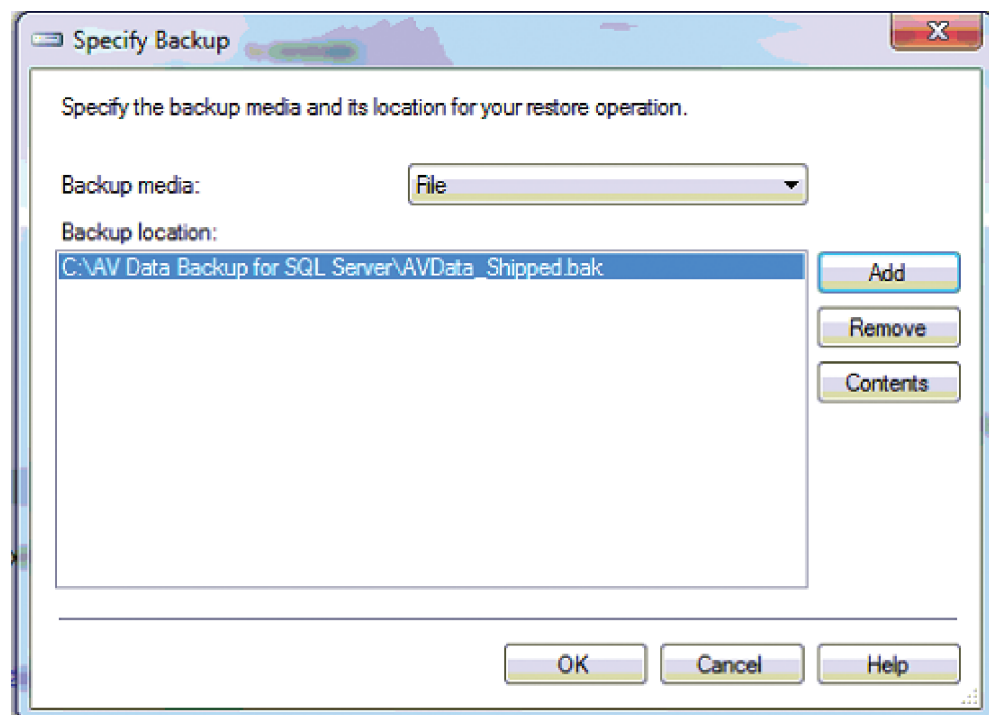
From database:

From device:

Select the backup sets to restore:

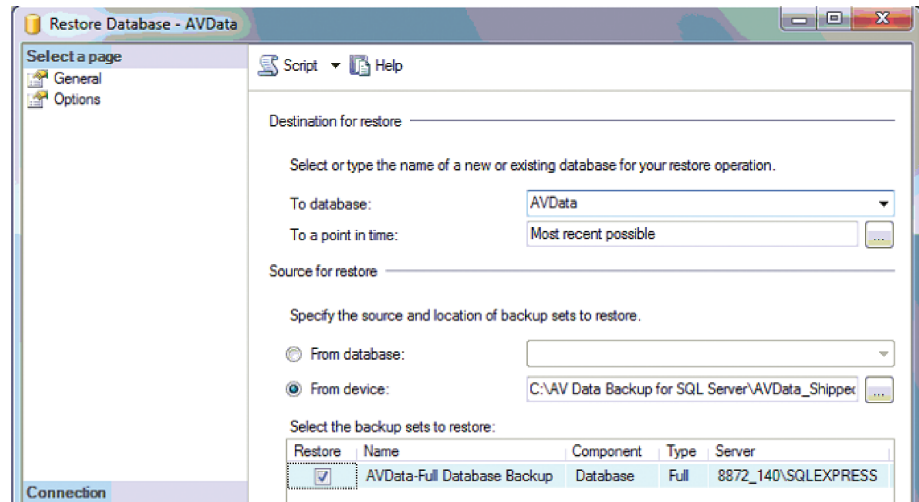
Restore	Name	Component	Type	Server	Database	Position	First LSN	Last LSN

8. Click the Add button and select the AVData_Shipped.bak file provided by Agilaire, then click **OK**.

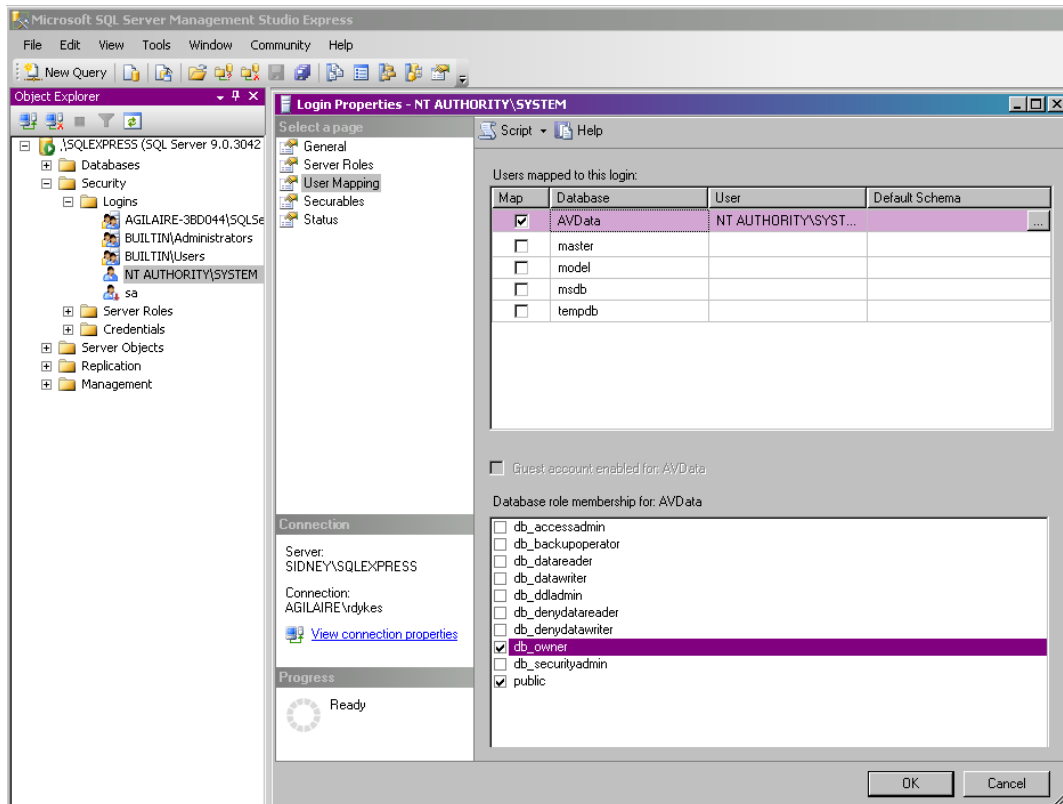


9. Set the 'To database' as AVData, place a check mark in the box next to the .bak file you selected, then click **OK**.

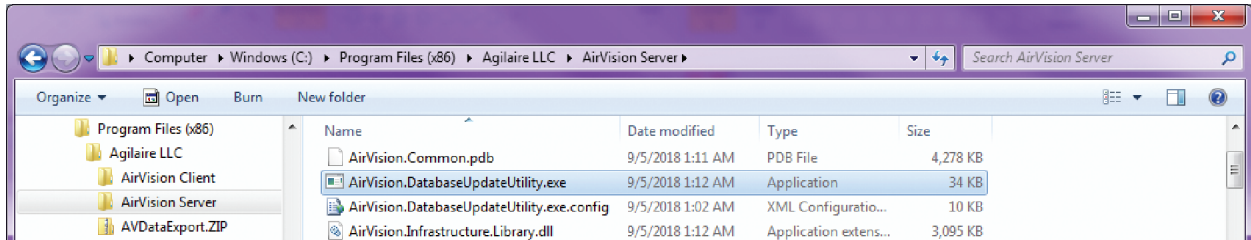
10. Once the restore completes, start the AirVision Server service that you stopped in step 3.



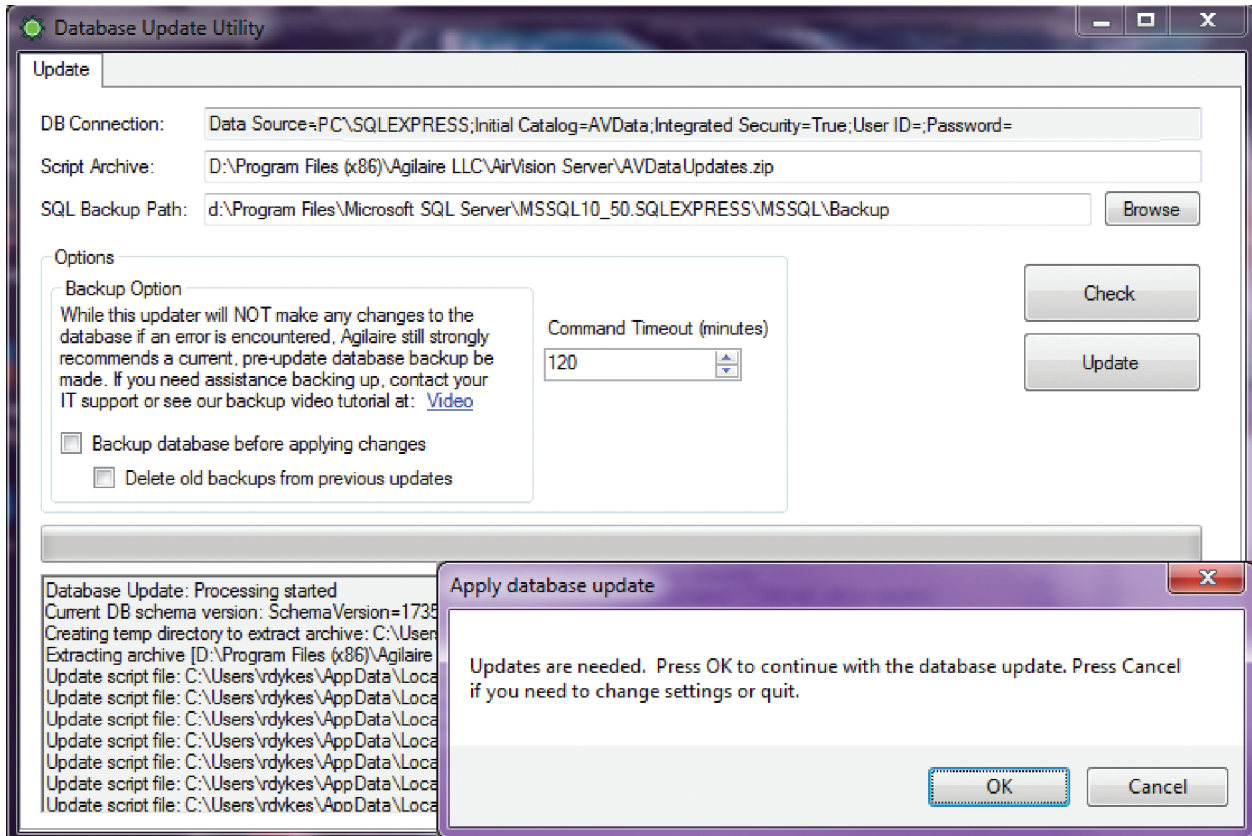
► **NOTE:** If using SQL 2012 or above, when the database is created/restored, the **Local System does not have privileges to the database** and they have to explicitly be added in SQL. To do this, open SQL Management Studio. Expand Security then Logins. Double click on **NT AUTHORITY\SYSTEM** to open the Login Properties screen. Click **User Mapping**, put a check in the box beside of **AVData** and in the Database role membership section at the bottom, check the box beside of **db_owner**. Click the OK button at the bottom.



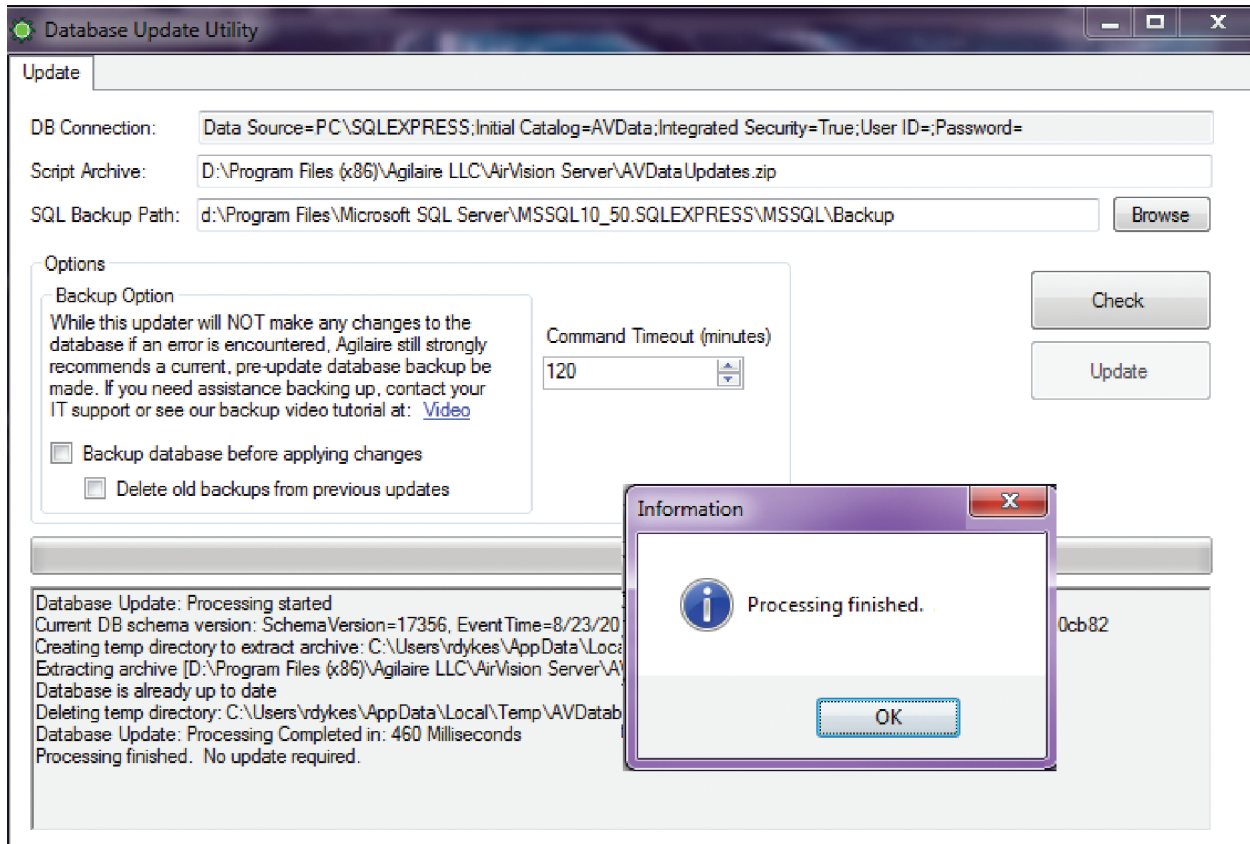
11. If you are not 100% certain that your database matches the version of the software you are running, navigate to **C:\Program Files\Agilaire LLC\AirVision\Server** and launch the **AirVision.DatabaseUpdateUtility**.



12. If you have a newer version of AirVision installed than what was originally loaded on the system, the Database Update Utility will open. Click the OK button to update the database.



13. When the updates complete, you should see the following message:



14. Click OK and the Database Update window will close.

15. Restart the AirVision Service.

16. SSMS and the Windows Services window can both be closed as well.

Installing the AirVision Server

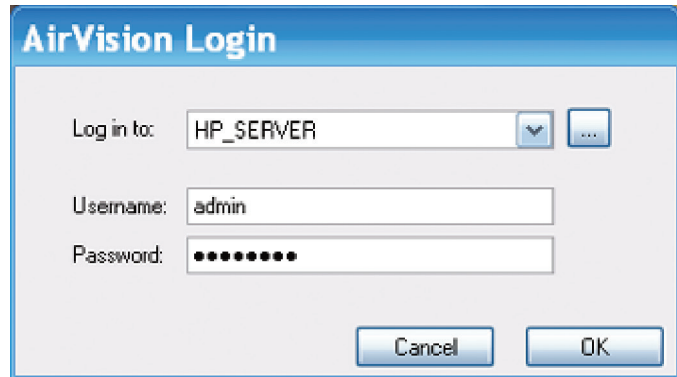
1. After you run the appropriate script to install the database for the first time or upgrade the database as described in the previous section, continue to browse the AirVision installation media. Double-click to open the **Server** folder.
2. Within the **Server** folder, double-click the setup.exe file to install the server part of the AirVision software.
3. When the installation begins, most of the screens are self-explanatory.
 - You will want to review and accept the **End-User License Agreement** in order to proceed with the install.
 - The default install directory is C:\Program Files\Agilaire LLC\Server (you can also browse to change the install directory if desired).
4. Click **Next** to accept the default destination directory (C:\Program Files\Agilaire LLC\Server) or browse to change the directory and then click **Next**.
5. The final screen will say the AirVision Server has been successfully installed. Check the selection box to launch the **Server Settings Editor** and click **Finish**.
6. You will be prompted if you want to install the AirVision Client. If you do not want to install the Client, unclick this box and click OK.

Installing the AirVision Client on Secondary Computers

- **Note:** If you are upgrading AirVision from a previous version, you no longer have to uninstall the old version before you run the Client installation.
1. After you have installed the AirVision Server and the AirVision SQL database, continue to browse the AirVision installation CD (double-click to open **My Computer**, then right-click the **CD drive** and select **Open**). Double-click to open the folder **Client**. Within the Client folder, double-click to run **AirVisionClient_Installer.exe**. Click **Next** in the first screen to continue.
 2. Accept the license agreement and click **Next**.
 3. Enter your **User Name**, **Company Name** (optional), and the unique **Product ID** (required) supplied by Agilaire. Click **Next**.
 4. Click **Next** to accept the default destination directory (C:\Program Files\Agilaire LLC\Server) or browse to change the directory and then click **Next**.
 5. The final screen will say the AirVision Client has been successfully installed. Click **Finish**.

Logging In to AirVision

Double-click the AirVision icon on your desktop and log in to the AirVision Client. If you are logging in for the first time click the square button to open the **Profiles** screen.

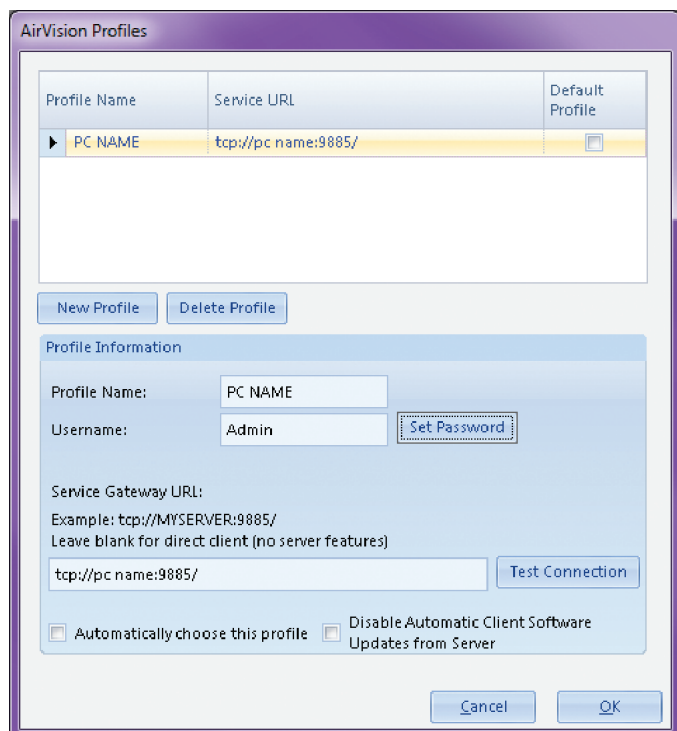


AirVision Login

In the profiles screen, click the **Add Profile** button. If your Server and Client are on the same machine, accept the default PC name. If you are installing a remote Client, change the default name in the box to the name of the server you wish to log into.

Enter **admin** as the **Username**, click **Set Password** and enter **Agilaire**.

Click the **Test Connection** button to see if AVTrend is communicating with the database.

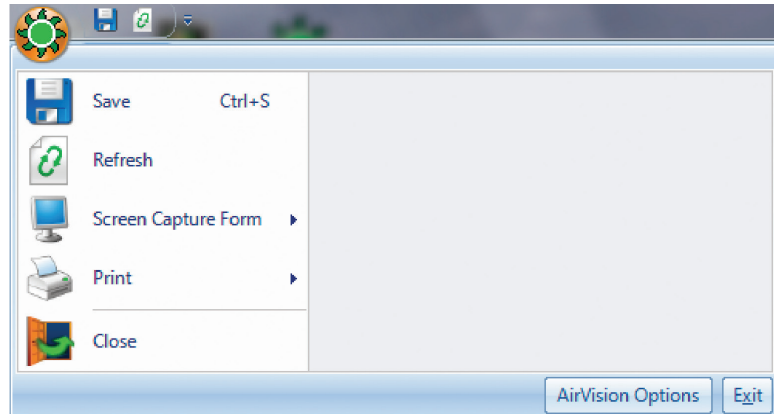


Air Vision Profiles

Accessing Profiles After Logging In

After you are logged into AirVision, you can access the Profiles screen by clicking the AirVision icon in the upper left corner of the screen (beside the **Save** icon). From this Profiles screen you can:

- ◆ **Save**
- ◆ **Capture** the AirVision screen
- ◆ **Print**
- ◆ **Close** the Profiles screen.
- ◆ You can also open **AirVision Options**, which brings up the same Profiles screen you saw when you logged in.
- ◆ You can close AirVision altogether by selecting the **Exit** button.



AirVision Profiles seen by clicking the AirVision icon in the upper left corner of the AirVision screen after you have logged in.

Chapter 2

Configuring AirVision

AirVision provides nearly unlimited flexibility in setting up systems and configuring servers. This chapter explains how to set up the following parts of AirVision:

- ◆ Configuring System Preferences
Configuration Editors > Site/Parameter
- ◆ Importing (Converting) E-DAS Data
Utilities > EDAS Import
- ◆ Site and Parameter Setup
Configuration Editors > Site/Parameter
- ◆ Adding and Editing Sites
Configuration Editors > Site/Parameter
- ◆ Adding and Editing Parameters
Configuration Editors > Site/Parameter
- ◆ Configuring Parameter Templates
Configuration Editors > Parameter Template Editor
- ◆ Adding Loggers to Sites
Configuration Editors > Data Source Details
- ◆ Text Strings in Digital I/O
- ◆ Adding Channels to Data Loggers
Configuration Editors > Data Source Details
- ◆ Other Channel Types: External Channels
- ◆ Validation and Flags
- ◆ Adding Communication Routes
Configuration Editors > Server Configuration
- ◆ TCP/IP Routes
- ◆ Associating an Existing Route to a Logger
Configuration Editors > Server Configuration
- ◆ Testing Your Connection
Utilities > Link to Logger

Chapter 2

Configuring AirVision

- ◆ Sending Configurations to Logger
(Model 8816 / 8832 / 8864 only)
- ◆ Setting up Calibrations
Configuration Editors > Data Source Details
- ◆ Configuring Input/Output Lines for Digital Events
- ◆ Setting Up Email Services and Alarms
- ◆ Scheduling Tasks
Configuration Editors > Task Scheduler
- ◆ Schedule Task Wizard
Configuration Editors > Task Scheduler > Run Schedule Wizard
- ◆ Task Status Display
Status Displays > Task Status
- ◆ Favorites Editor
Configuration Editors > Favorites Editor
- ◆ Configuring Security
Configuration Editors > Security
- ◆ GSI/Modbus Driver Editor
Configuration Editors > GSI/Modbus Drivers
- ◆ Configuring Reports
Configuration Editors > Report Configurations
- ◆ AirNow/FTP Setup
Configuration Editors > Report Configurations
- ◆ AQI Program Editor
Configuration Editors > Report Configurations > AQI Program Editor

For information about starting the AirVision Service and logging in to AirVision, see “Chapter 1 Installation.”

Configuring System Preferences

To set up system preferences, open the **Site/Parameter** screen from **Configuration Editors** and double-click the **System** icon. Typically, each agency setup will only have one System, but it is possible to set up more than one by clicking the **Add System** button. (A second system could be used to help separate, for example, air toxics or water quality data from the other quality data).

Enter the following:

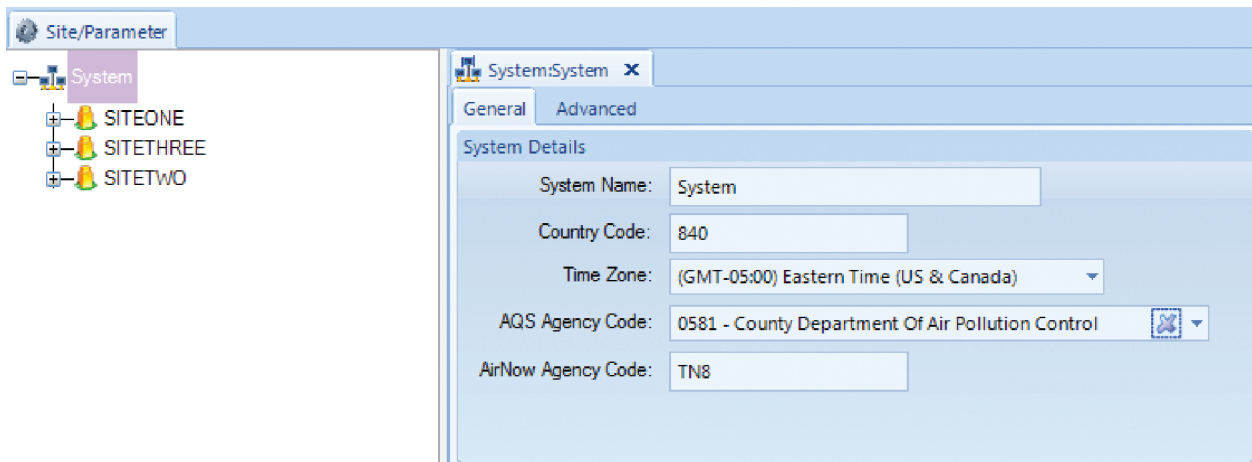
System Name can be left defaulted to System.

Country Code is defaulted to 840 for the United States.

Time Zone is the zone where the central polling PC is located.

AQS Agency Code (four digit numerical code provided by EPA, used for AQS reporting of 1-point QC checks) and can be selected from the drop down list.

AirNow Agency Code (three digit alpha numeric code provided by US EPA, used for hourly AQCSV reports to AirNow).



System Configuration from Site/Parameter Config Editor

Importing (Converting) E-DAS Data

If you will be using existing historical data from E-DAS Ambient systems, the AirVision E-DAS Import Utility (**Utilities>EDAS Import**) can convert it to AirVision data with sites and parameters configured. In the E-DAS Ambient to AirVision Conversion screen, browse to find the **E-DAS Ambient Data Directory**.

Select:

Data Type(s) to be converted:

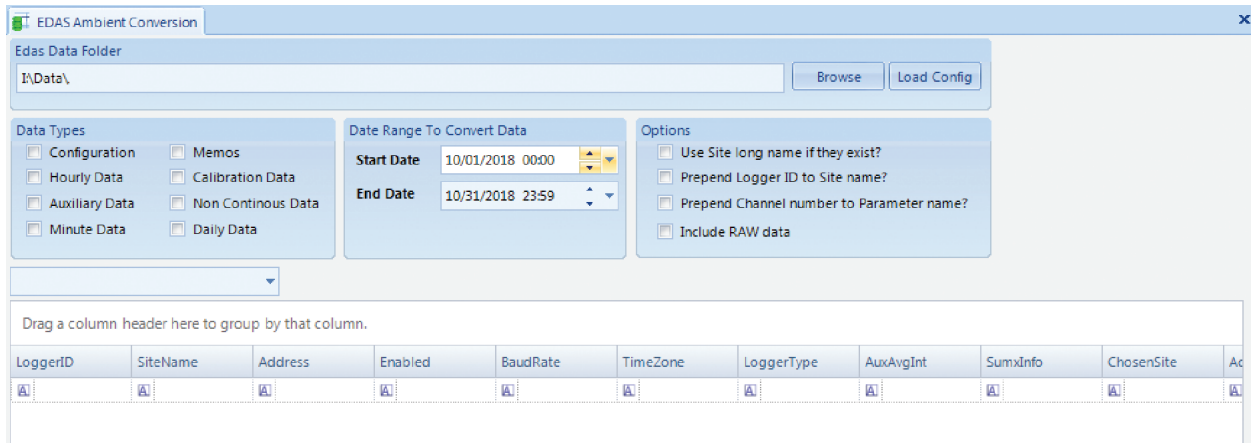
- Configuration
- Hourly Data
- Auxiliary
- Minute Data
- Calibration Data
- Non Continuous Data
- Daily Data

Date Range.

Options are:

- Use Site Long name if they exist
- Append Logger ID to front of site name
- Append Channel Number to Parameter name
- Include RAW data

Converted data will be in your SQL database in AVData and available when you open AirVision. Some configuration information may be missing, such as central modem settings and scheduled tasks.



Converting E-DAS data to AirVision

Site and Parameter Setup

The **Site/Parameter Editor** from the **Configuration** menu allows administrators to add, edit, and delete sites and parameters. A **Site** is a logical organization of a physical monitoring area and can contain data from several sources, such as data loggers, PM samplers, and directly polled analyzers. However, users may also use multiple sites for the same physical site to separate measurement types (e.g., air toxics, FRMs), or to distinguish co-located sites, so the users can use similar parameter names or templates without conflicts.

The screenshot shows the 'Site/Parameter Editor' window for a site named 'AirLab'. The window has two tabs: 'General' and 'Parameters', with 'Parameters' currently selected. The 'General' tab contains the following fields:

- Name:** AirLab
- Description:** (empty)
- Abbreviation:** (empty)
- Time Zone:** (GMT-05:00) Eastern Time (US & Canada)
- Enabled:**

Below these are two main sections:

- Miscellaneous:**
 - Latitude:** 35.998530 (e.g., 45.04580)
 - Longitude:** -83.210390 (e.g., -75.4085)
 - File Import Code:** (empty)
 - EPA Site:** 1166
 - AIRNow Mnemonic:** (empty)
 - EPA County or Tribal Code:** 47 - TN, 093 - Knox
 - Site Group:** (empty)
 - Website Display Name:** (empty)
- Address:**
 - Street Address 1:** (empty)
 - Street Address 2:** (empty)
 - City:** (empty)
 - County:** (empty)
 - State Region:** (empty)
 - Zip Code:** (empty)

Below these sections are:

- Service Dates:**
 - In Service Date:** (empty)
 - Out of Service Date:** (empty)
- Additional Information:**
 - Site Metatags:** A table with columns 'Name' and 'Value'. The table is currently empty.

At the bottom left of the window, there is a small asterisk icon (*).

Site Configuration from the Site/Parameter Editor in Configuration Editors

Adding and Editing Sites

To add a site, select **Configuration Editors > Site/Parameter**, and highlight your **System name**. Click the **Add Site** button and enter a **Name** for the **Site**. To edit a Site, double-click a **Site** from the Site/Parameter tree.

To save new or edited sites, click the **Save** icon from the upper left-hand corner of the AirVision screen, or click the Agilaire icon and select **Save**. Fields in the Site Configuration Editor are described below.

The Site Editor contains the following fields for information about the site:

- ◆ Name (Required) Alphanumeric characters to refer to the site, e.g., NKnox.
- ◆ Description (optional) Brief description of the site, e.g., North Knoxville.
- ◆ Abbreviation This field is used for special file import formats only
- ◆ Time Zone (Required) Select from drop-down list the zone where the site is located.
- ◆ Enabled
 (Required for polling
 & reporting) Check the box to enable the site. If this box is not selected the site will not be polled.
- ◆ Latitude To comply with EPA standards, enter latitude in decimal format. For example, 75 degrees, 15 minutes, and 0 seconds would be entered as 75.250000. Enter up to 2 places and a minus sign if needed to the left of the decimal and up to 6 places to the right of the decimal.
- ◆ Longitude To comply with EPA standards, enter longitude in decimal format. For example, 75 degrees, 15 minutes, and 0 seconds would be entered as 75.250000. Enter up to 2 places and a minus sign if needed to the left of the decimal and up to 6 places to the right of the decimal.
- ◆ EPA Site Type in the four-digit site code provided by EPA.
- ◆ AirNow Mnemonic Optional, used only by the now obsolete OBS format.
- ◆ File Input Code Single character used for file import templates in special cases only.
- ◆ EPA County or Tribal
 Code Select from the drop down list the county or Tribal code provided by EPA.
- ◆ Site Group - (Optional) Allows user to organize sites into user-defined groups (e.g., “Rural”, “Downtown”, “NCore”). Names of parameter groups must first be entered into the **Site Groups Editor** in Configuration->List Editors. Normally, this is an AirVision Server-Side function, and is only shown in the 8872 / Site AV-Trend PCs for display purposes.

- ◆ **Web Site Name** Alternate name to use in AgileWeb. Optional, if not set, the Site Name will be used.

- ◆ **Address** Physical address of the Site.

- ◆ **Additional Information** You can add notes at the bottom of the Site Editor by clicking on the asterisk at the bottom of the screen. Enter a **Name**, for example "Distance to tree line," and a **Value**, for example "70 feet." When you have completed your entry press the **Enter** key on your computer keyboard. Your entry will be moved to the next row in the Additional Information section.

These "meta data" fields may also be used by some specialized reports or instrument polling programs. Consult your specific application notes for details and syntax.

Adding and Editing Parameters

To add a parameter configuration, select a **Site** from the **Site/Parameter** tree and click the **Add Parameter** button on the Ribbon at the top of the AirVision screen. To edit a parameter select a **Site** and then double-click a **Parameter**. To hide disabled parameters in the Site/Parameter tree, check the box for **Show Disabled Items** on the Ribbon at the top of the AirVision screen.

Site:

Parameter:

Parent Parameter:

Parameter Group:

Website Display Name:

Parameter Template:

Truncate Round Rule: Round Truncate

Reported Units:

Analyzer Units (if different):

Graph Minimum:

Graph Maximum:

Calibration Span:

Instrument Detection Limit:

Limit Of Quantization:

Minimum Detectable Limit:

Practical Quantitation Limit:

Parameter Report Order:

Totalize in Reports Minimum in Reports

Enabled: Enable AIRNow Reporting:

Filter From Web Site:

Parameter Data Type: Average / Continuous
 Continuous Sample
 Sample / Non-Continuous

Description:

Math Equation (if Calculated):

EPA POC:

EPA Method:

EPA Units:

EPA Parameter:

Reported Digits:

Precision: Calibration Precision:

Additional Information

Parameter Metatags	
Name	Value
<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/>
▶ ParmIdentifier	44201

Parameter Configuration from the Site/Parameter Editor in Configuration Editors

The **Parameter** screen displays the following fields:

- ◆ Site The Site you selected in the Site/Parameter tree will automatically be displayed.
- ◆ Parameter Alphanumeric characters to identify the Parameter

- ◆ **Parent Parameter** A Parent Parameter can be designated to form relationships that can be used for drill-down in the Data Editor. For example, a primary analyzer pollutant such as NO_x could be a parent and designated diagnostic parameters such as sample flow or box temperature could be children. Another example would be to assign particulate parameters as parents and metals for XRF (X-ray fluorescence) analysis as children. If the parameter has a parent parameter, select it from the drop-down list.

- ◆ **Parameter Group - (Optional)** Allows user to organize parameters into user-defined groups (e.g., “Gases”, “Met”, “Particulate”, “PAMS”). Names of parameter groups must first be entered into the **Parameter Groups Editor** in Configuration->List Editors. Normally, this is an AirVision Server-Side function, and is only shown in the 8872 / Site AV-Trend PCs for display purposes.

- ◆ **Web Site Name** Alternate name used by AgileWeb. Optional, if not set, the Parameter Name is used.

- ◆ **Parameter Template** Parameter information can be filled in automatically by selecting a Parameter Template, which will set up EPA codes and units. Basic Parameter Templates are provided in AirVision. They can also be configured in the **Parameter Template Editor**, which defines basics like units, EPA reporting codes, and graph limits. (See “Configuring Parameter Templates.”) Must be unique to each site. If you want to automatically fill in parameter information using a template, select a parameter template from the drop-down list and click **Apply**. If you have converted your data from E-DAS and the information is already filled in, you can still select a template but do NOT click Apply or AQS codes will be overwritten.

- ◆ **Enabled** Check the box to enable the parameter.

- ◆ **Enable AirNow Reporting** For AirNow parameters only, check the box to include this parameter in AirNow reports. Submitting AirNow reports consists of three steps:
 Check **Enable AirNow Reporting** in the **Site/Parameter setup**,
 Enter **AirNow Transfer Details** in **AirNow/FTP Setup (Configuration Editors)**,
 Schedule **AirNow FTP Transfer task** in **Task Scheduler (Configuration Editors)**.

- ◆ **Filter from Web Site** Check the box to filter data from website.

- ◆ **Parameter Data Type** Select a data type: **Average** for continuous data, **Sample/Non-Continuous** for data that is not continuous (e.g., FRM, AirToxics, PAMS, etc). **Continuous Sample** for auto-GC data.

- ◆ Description Enter a brief description of the parameter (optional).
- ◆ EPA POC Enter an EPA Parameter Occurrence Code if needed POC is used for different monitors measuring the same parameter at one site.
- ◆ EPA Method EPA sampling Method Code
- ◆ EPA Units Select EPA Units (including the EPA unit code) from the drop-down list (e.g., 007-parts per million, 015-degrees Fahrenheit).
- ◆ EPA Parameter Select a parameter (including EPA parameter codes) from the drop-down list (e.g., 44201 - Ozone).
- ◆ Reported Digits Total number of digits, including decimal places, that will be reported to the EPA.
- ◆ Precision Number of decimal places for reporting precision. X's and Y's to the right of the reporting precision field illustrate the format of the digits/precision, e.g., XX.YY indicates a total of four Reported Digits with a Reporting Precision of two.
- ◆ Calibration Precision Number of decimal places to the right to use for calibration report, calibration error calculations, and AQS reporting of 1-Point Precision Checks. This will allow users to specify more or less precision as desired for calibration data. It applies to calibration reports, calibration calculations, and the AQS output for 1 Point QC records.
- ◆ Truncate/Round Rule Determines whether data in reports will be rounded or truncated.
- ◆ Reported Units Units that will be used for reports e.g., PPM
- ◆ Analyzer Units If the analyzer units are different from the primary parameter, select analyzer units from the drop-down list. If this field is selected, the system will automatically try to determine a conversion factor based on the units and convert values during polling of a logger or import via the File Import Tool.
- ◆ Analyzer Units (if different) This field is only used for Direct Polled instruments, to provide for unit conversions (e.g., BAM provides values in mg/m³, but user wants to report in ug/m³). Do not use for any other attempt for unit conversion. For 8872 analyzer unit conversion, see 8872 User Manual and “Channels” for “Scaling Factor.”
- ◆ Graph Minimum Lower y-axis limit for graph display
- ◆ Graph Maximum Upper y-axis limit to for graph display

- ◆ Calibration Span This field is determined by the instrument. Enter the configured calibration span value for the parameter to determine the parameter's calibration error (at the data logger).

- ◆ Instrument Detection Limit (DL) Minimum concentration of an analyte that can be measured by an instrument. The DL is an estimate of concentrations at where you can be fairly certain that the compound is present. Concentrations below this limit may not be detected. Used for air toxics measurements only (can be blank if not needed).

- ◆ Limit of Quantization (LOQ) A minimum criterion or region for quantization that should be clearly above the detection limit. The lowest concentration of an analyte in a sample that can be determined (quantitated) with acceptable precision and accuracy under the stated operational conditions of the method. Traditionally, this is approximated as 10 times the signal-to-noise (S/N) ratio.

- ◆ Minimum Detectable Limit (MDL) EPA defines the MDL as the minimum concentration of a substance that can be measured and reported with a 99% chance that the analyte concentration is greater than zero. Must be filled in for reporting Violation of Standards report for ozone.

- ◆ Practical Quantization Limit (PQL) The lowest concentration of an analyte that can be reliably measured within specified limits of precision and accuracy during routine laboratory operating conditions.

- ◆ Parameter Report Order Parameters in reports are printed in the same order that they are shown under each site. Select Parameter Report Order to change the order parameters appear in reports. Report Order only applies to Daily Summary and Monthly Reports.

- ◆ Totalize in Reports If this option is selected, Monthly Reports will show a total of data rather than an average. Totalize in Reports is most commonly used for rainfall.

- ◆ Minimum in Reports If this option is selected, Monthly Reports will show a minimum of data rather than a Maximum. Minimum in Reports is most commonly used for temperature.

- ◆ Additional Information You can add notes at the bottom of the Parameter Editor by clicking on the asterisk at the bottom of the screen. Enter a **Name**, for example "Data Last Certified," and a **Value**, for example "9/1/2008." To add another row when you have completed your entry, press the **Tab** key on your computer keyboard. A blank row will be displayed.

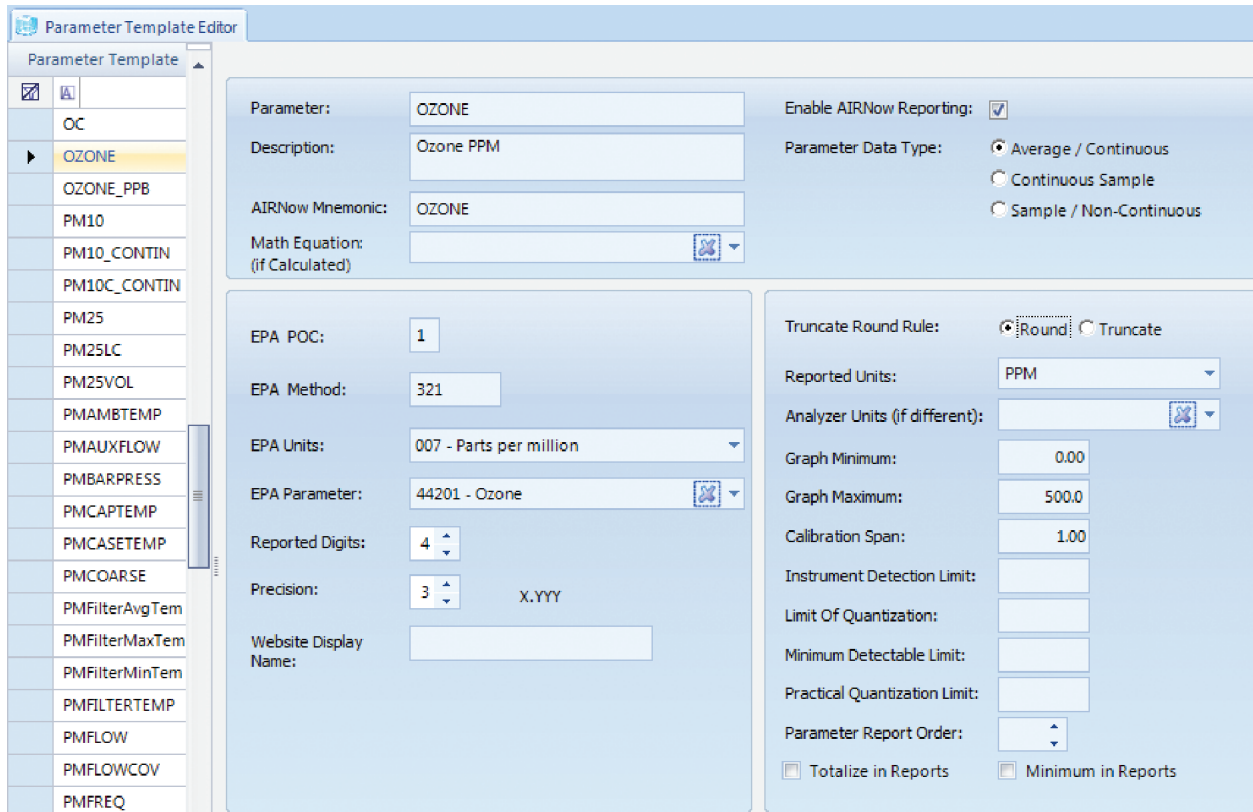
Configuring Parameter Templates

Basic **Parameter Templates** are provided by AirVision (**Configuration Editors > Site/Parameter**), such as ozone, PM10, PM25, NO2. You generally would not need to make changes to the standard Parameter Templates, but if you have unique setups you can configure new templates in **Configuration Editors > Parameter Template Editor**. The Parameter Template Editor defines basics like units, EPA reporting codes, and graph limits, and allows you to configure details for an EPA parameter type.

Parameter templates allow you to avoid repeating configurations for the same parameter at multiple sites, for example, file import templates, report setups, ADVP rules. The Parameter Template Editor allows you to enter or modify a list of parameter types that each parameter can be referenced to, so AirVision can correlate parameters with different names (e.g., O3 , OZ, OZONE). Linking parameters to parameter types makes reporting easier and eliminates the necessity to link individual site/parameter selections together (e.g., for AirNow reporting).

All fields in the Parameter Template Editor were explained in the previous section “Adding and Editing Parameters.”

- **Note:** A Parameter Template is required for any parameter imported with the File Import Tool, E-Mail Alarms, or ADVP. File Import is the the most common reason for a user to add to the Parameter Template table.



Configuring Parameter Templates

- **Note:** The values in the template editor are only used when the "Apply" button is used in the Parameter Editor to do a one-time copy from the template. Afterwards, the values here have no effect on reports or system operation.

Adding Loggers to Sites in Data Source Details

The next step, after configuring sites and parameters, is to add **Loggers** to sites.

- ▶ **Note:** Data loggers must be added to sites **BEFORE** channels are configured. Channels are added to loggers after the loggers are set up.

Still in the **Configuration Editor**,

- ◆ select **Data Source Details**,
- ◆ select a **Site**,
- ◆ then click the **Add** button and
- ◆ select **Logger**.
- ◆ enter a **Source Name**, e.g., 01Logger, do NOT use only the 2 digit Logger ID.
- ◆ enter the **Logger ID**, e.g., 01,
- ◆ select a **Logger Type** from the drop down list, e.g., 8832 or 8864,
- ◆ click **Enabled**.
- ◆ optionally, you can enter a **Description**
- ◆ check **Send Central Messages to LogBook** to automatically put polled **Central Messages** into the Logbook as Logbook entries (**Reports>Logger Reports>Central Messages**)
- ◆ click the **Save** button.

The screenshot shows the 'Logger Configuration' window for 'SITEONE'. The window has a title bar 'Logger:SITEONE' and a menu bar with 'Source', 'Communication', 'IO Labels', 'Math Constants', and 'Analog Outputs'. The 'Source' menu is open, showing 'Source Information' and 'Logger Details'.

Source Information:

- Site: SITEONE
- Source Name: SITEONE
- Description: (empty text area)
- Enabled:
- Retry Attempts: 3
- Retry Delay: (empty field with a dropdown arrow and a refresh icon)

Logger Details:

- Logger Identifier: 01
- Logger Type: Model 8832
- Debounce Digital Inputs:
- Send Central Messages to Logbook:
- Send Chart Memos to Annotations:

Logger Configuration from Data Source Details in Configuration Editors

Logger Properties Tabs

Communications - This tab is used in AirVision and AV-Trend to set the method by which the software communicates with an external logger (see “Adding Communication Routes”).

Route	Priority	Polling	Emulation	Init Command	Final Command
Logger (on PC)	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Digital I/O

IO Labels - This tab is used in to set the properties of the digital inputs and output lines in the data logger, and how they relate to other elements of the software. Properties include.

- ◆ **Physical Inputs / Physical Outputs:** This is only used in AirVision and AV-Trend in association with ESC 8816/8832/8864 loggers, and can help avoid download errors associated with pseudo inputs and outputs when the number of input and output cards do not match. They can be blank in most cases, and is not used with the Model 8872.
- ◆ **IO Number:** 1 through 88 inputs and outputs downloaded to the data logger.
- ◆ **Name:** 20-character label downloaded to the data logger.
- ◆ **Description:** Optional, allows for a longer description.
- ◆ **Modbus Instrument / Coil:** Leave blank for physical inputs/outputs in ESC loggers. Set for internal modules on the 8872 and for any external Modbus-capable instrument or calibrator to map pseudo-inputs and pseudo-outputs to analyzer/calibrator control or status monitoring functions. See tutorial videos under “Training” at Agilaire.com for more details on connecting to commonly used calibrators.
 - ▶ **Note:** When mapping pseudo-outputs in ESC loggers to analyzers/calibrators, the corresponding pseudo-input must be unused (and vice-versa for mapped pseudo-inputs).
- ◆ **Open Star Text/Closed Star Text (8872 only):** This allows the user to enhance how status inputs and relay outputs are shown in the 8872 real time display, to be other than "open" or "closed" (e.g., "Pump On" or "Cal Running").
- ◆ **Line State Triggering Alarm / Alarm Definition:** Used for the Advanced Alarm Feature in AirVision/CEM. See AirVision/CEM manual, Digital Alarm Trigger for details. Not used in regular ambient applications.
- ◆ **Enabled:** Check the enabled box if the label is to be downloaded to the logger.

Math Constants - This tab is used to set primary values and, optionally, secondary or tertiary values (switched by physical or pseudo digital inputs) of math constants (K01-K32) used by the data loggers in math equations. The math equation will use the primary value, unless the status input pattern matches that set for either the secondary or tertiary value, and a secondary/tertiary value has been set. This feature is used commonly in CEM applications for fuel factor / GCV value switching, but can also be used in ambient applications as holding registers for values updated by channel averages (e.g., holding end of hour BAM values) or values written during the calibration process (e.g., expected values read back from calibrators). See the “write to math constant” functions in the Channel Configuration->Validation and in the Calibration configuration sections.

Number	Name	Primary Value	Secondary Pattern	Secondary Value	Tertiary Pattern	Tertiary Value	Description
1	K01	-	Select Lines	-	Select Lines	-	K01
2	K02		Select Lines		Select Lines		K02
3	K03		Select Lines		Select Lines		K03
4	K04		Select Lines		Select Lines		K04
5	K05		Select Lines		Select Lines		K05
6	K06		Select Lines		Select Lines		K06
7	K07		Select Lines		Select Lines		K07
8	K08		Select Lines		Select Lines		K08
9	K09		Select Lines		Select Lines		K09
10	K10		Select Lines		Select Lines		K10
11	K11		Select Lines		Select Lines		K11
12	K12		Select Lines		Select Lines		K12
13	K13		Select Lines		Select Lines		K13
14	K14		Select Lines		Select Lines		K14
15	K15		Select Lines		Select Lines		K15
16	K16		Select Lines		Select Lines		K16

Analog Outputs - This tab is used to set analog output settings for the Model 8816, 8832, 8864, or 8872 loggers. Consult the Analog Outputs section/appendix in the relevant logger manuals for more details on usage.

DAC Channel Number	Channel	Interval	High Input	Low Input	High Output	Low Output	Action On Error
1	RD : [06] SO2	001m	2000	0	20	4	Hold

Channel Configuration

“Channels” are the entities that tell a data logger (8832, 8864, 8872) how to acquire data in real-time from an instrument to form averages, that are then passed on to *Parameters* in AirVision to store the data. Channels represent the physical side (instruments, wires, RS-232 connections, etc), while Parameters represent the logical side or “slots in the database.” It’s possible to have *Parameters* but not *Channels* if the data comes from some source other than being averaged by the data logger, such as the File Import Tool, or direct instrument polling.

The information for *Channels* is set up in Data Source Details in AirVision (or “Logger Channels” in the 8872 menu).

Basic Channel Information

In the setup of most of the channel types the Channel tab will have identical fields on the Channel tab as the Standard channel setup has, except where noted in descriptions below in this document.

The screenshot displays the 'Channel' configuration window with the 'General' tab selected. The interface includes the following fields and options:

- Associated Source:** NCore_Datlogger
- Channel Name:** NO2_T500
- Parameter:** NCore : NO2_T500
- Channel Type:** Modbus
- Enable Channel ?**
- Channel Number:** 6
- Round Precision:** (empty)
- Scale Factor:** 1.0000
- Base Average:**
 - Average Interval:** 001m
 - Store In Database?**
- Extended Averages:**
 - Extended Average 1:**
 - Average Interval:** 015m
 - Store In Database?**
 - Extended Average 2:**
 - Average Interval:** 001h
 - Store In Database?**

Do not use spaces in the channel names and avoid using equation symbols in the channel names as these can cause problems with math channels if such channel names are used in a math equation.

When a Channel is first created the Channel Name will be displayed as Chan1, Chan2, etc. If you have already configured a parameter (recommended), when you select the associated Parameter in the top right, the name will automatically propagate over to the Channel Name field once the next field has been selected. However, channel names are limited to 8 characters (as a holdover from 8816s and 8832s), but the Channel Name can be edited.

The Channel Number will automatically be filled in with the next available number, but it can be changed by using the radio buttons to select the logical number of the channel being configured.

Set the Average Intervals for the Base, Extended1, and Extended 2 and their Storage Times. 001M data is usually setup on the Base Average. The data logger will average instantaneous readings over the Base Avg Interval, and then those base intervals are used to build the two extended intervals. To change the interval click the down arrow and select another interval type from the drop down list.

The Extended Average 1 is usually used for auxiliary data, the most common being 005M or 015M data. If the Base Average Interval is 1 minute, then the first extended average may be an auxiliary, hourly, or daily interval type (of which have to be divisible by 60 and a multiplier of the base). To change the interval click the down arrow and select another interval type from the drop down list.

The Extended Average 2 is usually used for hourly data, but can be used for daily data as Average 1 is set to hourly data. Average 2 must use a higher interval type than Average 1, and must be a multiplier of the base average. To change the interval click the down arrow and select another interval type from the drop down list.

Storage Time for all three intervals is the length of time the 8816, 8832 or 8864 data logger will store the averages (not used/visible for the 8872). Each interval has its own storage time setting which can be set between 0 to 999. Click the down arrow and select from the from down list the time span of: S = seconds, M = minutes, H = hours, D = days.

For Model 8872s, the storage time fields are replaced by checkboxes for “Store In Database”. This allows the user to designate that the 8872 should not store any unnecessary / undesired intervals. The storage time is managed by the Purge and Archive functions (see 8872 User Manual).

Basic Channel Types

Channel “types” define the methodology for either acquiring the data (e.g., what kind of input) and/or how the resultant average is to be calculated. The channel types supported are as follows.

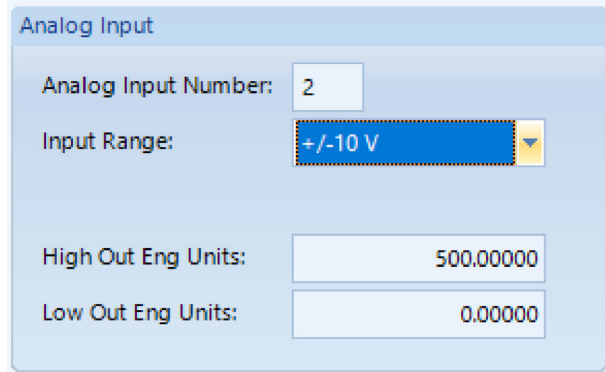
The **Analog In (Standard)** channel takes readings from a physical analog input, scales the voltage (or current) to an engineering value, and then performs a simple arithmetic average of all the values. The settings under the Misc. tab define the information required:

- ◆ The Analog Input Number specifies the physical input that the analyzer wires are connected to. The analog input number does not have to be the same as the channel number.
- ◆ For Model 8816, 8832 or 8864, The High and Low In Voltage/mA are where the Voltage or Milliamps are entered. Typical values are -10 to +10 V for a voltage card and 4 to 20 mA for a current card. For the Model 8872, the High and Low In are assumed to be the full voltage/current range set on the input module (e.g., 0-5V or 4-20mA) for that input.

The screenshot shows a software interface with three tabs: 'Channel', 'Validation', and 'Misc'. The 'Misc' tab is active. Below the tabs is a section titled 'Analog Input' containing five input fields:

- Analog Input Number:
- High In Voltage/mA:
- Low In Voltage/mA:
- High Out Eng Units:
- Low Out Eng Units:

- ◆ For the 8872, the High and Low Input voltage fields are replaced by a pick list for the full scale range of the analyzer. High Output is associated with the full scale voltage, while Low Output is associated with the zero voltage level.
- ◆ The High and Low Out Eng Units of the instrument corresponding to the High or Low Input are entered.



Analog Input

Analog Input Number: 2

Input Range: +/-10 V

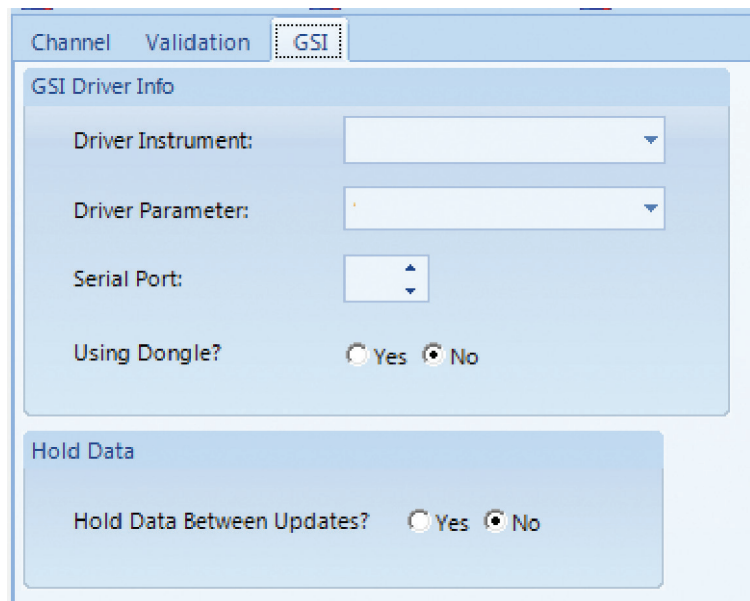
High Out Eng Units: 500.00000

Low Out Eng Units: 0.00000

For example: If the high input to the data logger from the instrument is 10V when the output reading of the instrument is 50°C, then a High Input of 10V indicates a corresponding High Output of 50°C. Or if the low input to the data logger from the instrument is 0V when the low output reading of the instrument is 0°C, then a Low Input of 0V indicates a corresponding Low Output of 0°C.

The **GSI or RS-232 channel** uses a serial communications interface used by the data logger to retrieve data from devices such as analyzers and digital control systems. The interface can receive data strings and stores values into GSI Channels for data collection. For these channel types, the “Misc” screen allows the user to define which RS-232 port is to be used, the type of instrument being connected, and the value within that instrument that is desired. Note that the baud rate of the RS-232 port is set in the PC Settings editor.

On the Misc tab an option is given for Hold Data Between Updates? is set to Yes or No. If Yes is selected it will use the last value received until the next value arrives, for instruments that send data infrequently. Normally, this is set to “No.”



Channel Validation GSI

GSI Driver Info

Driver Instrument: [Dropdown]

Driver Parameter: [Dropdown]

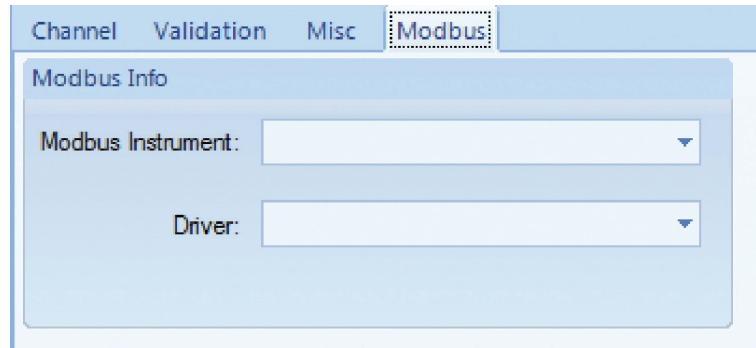
Serial Port: [Dropdown]

Using Dongle? Yes No

Hold Data

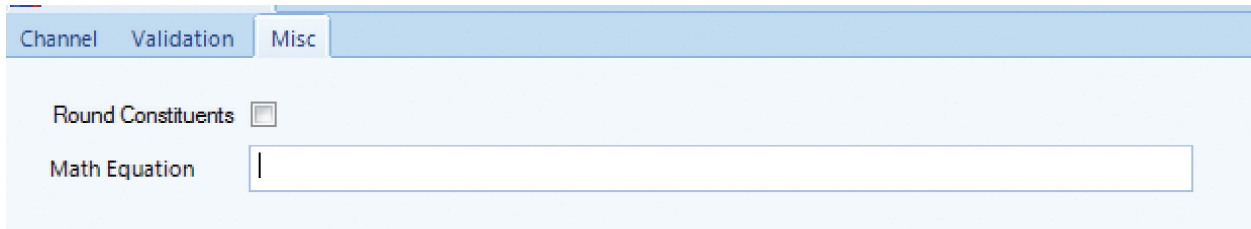
Hold Data Between Updates? Yes No

The **Modbus channel** is used to take data from a Modbusused to take data from a Modbus-capable instrument via an Ethernet connection.A Logger Modbus Instrument needs to first be created before the Modbus channel is created so that the instrument that was created will show in the drop down list for the Modbus Instrument on the Modbus tab (similar to the GSI/RS-232 channel).



The **Math Pack channel** is useful when special functions are required. Math pack channels are used to calculate results by combining information from other channels and/or constants according to user-defined equations, such as “SO2 * 1.3”. The allowed syntax is defined in Section X.X Math pack channels are used to calculate results by combining information from other channels and/or constants according to user-defined equations, such as “SO2 * 1.3”. The allowed syntax is defined in Section X.X.

On the Misc. tab Round Constituents will round to the number of places specified in the Decimal Positioner field, before the equation and average are calculated (used primarily in special CEM applications). Channel names that contain spaces cannot be used in a math pack formula.



The **Average math pack** channels function like math pack channels except instead of performing calculations on instantaneous readings and then averaging the results, these channels wait until the end of an averaging interval and perform calculations on the averages. The Average Math Channel configuration screen is identical to the Math Channel configuration screen except for the channel type.



The **General channel** is used to run special calculations based on the input of another channel that is already configured (e.g., analog input, Modbus, etc). The different calculation types include:

- ◆ Maximum (find highest sub-interval in a given interval, e.g., highest minute in hour)
- ◆ Minimum (same, but finding the lowest)
- ◆ Accumulate (totals sub-intervals into final average)
- ◆ Number of Valid Averages (number of sub-intervals that are valid)
- ◆ Percent Valid (similar, but result expressed as a percentage 0-100)
- ◆ Difference (calculate difference of current average from previous average)

The Maximum method is commonly used on SO₂ channels to find the highest 5 minute average in an hour, or for peak wind speeds. The Difference method is often used against a “raw” rainfall analog input to calculate the difference in the voltage to determine rainfall in an hour.

On the Misc. tab:

- ◆ Input Average Interval is the data type the general channel is to be based on, such as minute or hourly data (e.g., the “sub-interval” for the calculation).
- ◆ Input Channel Number is the channel number of the configured channel that will be the data source.
- ◆ General value Duration is the average basis for the General Channel Result.
- ◆ The Data Channel Type sets the calculation type; accumulative, maximum, minimum, number of valid runs, percent complete number of runs, or difference.
- ◆ Ignore Input Channel Flags are the flags to be ignored when verifying the validity of the current data point.
- ◆ Reset Input Status Pattern allows the user to set a digital status input pattern that, if observed, a reset will be generated to the calculation so far (e.g., previous sub-intervals will be ignored). This is not commonly used.

The screenshot shows the 'Misc' configuration tab for a channel. The 'Specific' section contains the following settings:

- Input Average Interval:** A dropdown menu.
- Input Channel:** A dropdown menu.
- General Value Duration:** Two spinners with a refresh icon.
- General Value Storage Time:** Two spinners with a refresh icon.
- Data Channel Type:** A dropdown menu.
- Ignore Input Channel Flag(s):** A dropdown menu with 'Channel Flags' selected.
- Reset Input Status Pattern (Max of 8):** A button labeled 'Status Pattern'.

The **Rolling channel** calculates an extended rolling average from another channel's average, such as hourly averages rolling on the minute. The rolling average is updated when the base average is updated. For example, if the base average interval is one minute and the rolling average interval is one hour, the rolling average channel will store a new data point every minute; each data point will be an average of the previous 60 one-minute averages.

On the Misc. tab:

- ◆ Input Channel is the input channel number used for the rolling channel average.
- ◆ Input Interval is the data used to input into the rolling channel averages, and is the frequency at which the rolling average channel will create data.
- ◆ Duration is the length of the 'buffer' of input intervals used to calculate each average.

The screenshot shows the 'Rolling Average Details' configuration window with the 'Misc.' tab selected. The window contains the following fields and controls:

- Input Channel:** A dropdown menu.
- Input Interval:** A dropdown menu set to '001m'.
- Duration:** A numeric input field with a dropdown arrow and a refresh icon.
- Exclude Offline Data?:** A checkbox.
- Clear at Rolling Interval?:** A checkbox.
- Storage Time:** A numeric input field with a dropdown arrow and a refresh icon.

Meteorological Channel Types

The **Vector Wind Speed channel** computes average wind speed as a vectored average. A corresponding Vector Wind Direction Channel must also be configured to support the Vector Wind Speed Channel. Input types can be analog inputs, or GSI (RS-232) based sensors, with a specific channel type for each approach. For the analog input type, the "Misc" tab is similar to the Analog Input Channel, while for the GSI version, the "Misc" tab looks like the GSI channel. The main difference is the manner of calculation, handling zero crossover, 0-360 and 0-540 degree instruments, etc.

For vector wind channels, an additional input is given for the companion channel (e.g., the Vector Wind Direction Channel for VWSP, and the Vector Wind Speed Channel for VWDR). The selection is the channel number for 8816s, 8832s and 8864s, use a pick list from already configured channels.

The screenshot shows the 'Misc' configuration window for a Vector Wind Speed channel. The window contains the following fields and controls:

- WSP Analog Input Number:** A text input field containing the value '2'.
- Input Range:** A dropdown menu set to '+/-5 V'.
- WSP High Out Engineering Units:** A text input field containing the value '50.00000'.
- WSP Low Out Engineering Units:** A text input field containing the value '0.00000'.
- Companion Channel:** A dropdown menu set to 'VWDR'.

Before this field can be filled in both the vector wind and vector speed channels have to be created and saved, then you can go back and fill in the companion channel field. Once this field has been filled in, it is very important to click out of the field so that SQL sees the field has been completed, otherwise it will not save the setting and will blank out the field when the save button is selected.

The **Vector Wind Direction channel** performs the direction part of the vector calculation, and is similar to the Vector Wind Speed channel listed above, including the Companion channel field.

Channel	Validation	Misc	Modbus
WDR Analog Input Number:		<input type="text" value="7"/>	
Input Range:		<input type="text" value="+/-5 V"/>	
WDR High Out Engineering Units:		<input type="text" value="360.00000"/>	
WDR Low Out Engineering Units:		<input type="text" value="0.00000"/>	
Companion Channel:		<input type="text" value="VWSP"/>	<input type="button" value="✕"/>

The **Wind Speed channel** is configured the same as the Vector Wind Speed channel minus the Vector Wind Direction channel companion field.

Channel	Validation	Misc	Modbus
WSP Analog Input Number:		<input type="text" value="8"/>	
Input Range:		<input type="text" value="+/-5 V"/>	
WSP High Out Engineering Units:		<input type="text" value="50.00000"/>	
WSP Low Out Engineering Units:		<input type="text" value="0.00000"/>	

The **Wind Direction channel** is configured the same as the Vector Wind Direction channel minus the Vector Wind Speed channel companion field.

Channel	Validation	Misc	Modbus
WSP Analog Input Number:		<input type="text" value="8"/>	
Input Range:		<input type="text" value="+/-5 V"/>	
WSP High Out Engineering Units:		<input type="text" value="50.00000"/>	
WSP Low Out Engineering Units:		<input type="text" value="0.00000"/>	

The **Sigma Theta** takes the input of a wind direction channel and calculates a USEPA sigma theta (Yamartino method). For a Model 8816, 8832 or 8864, the input must be designated as an analog input, while in an 8872, the input is set to a Wind Direction or Vector Wind Direction channel. The RMS interval is the sub-interval for the root-mean-square combination of sub-intervals, and for most applications is set to 15 minutes.

Channel Validation **Misc**

RMS Average Details

Average Interval:

Storage Time:

WDR Analog Input Number:

WDR High Input (V):

WDR Low Input (V):

WDR High Output (E.U.s):

WDR Low Output (E.U.s):

The **Linear Sigma** channel takes data from an analog input to calculate a standard deviation/mathematical sigma (measure of standard deviation) of an analog input or another channel.

Channel Validation **Misc**

WDR Analog Input Number:

WDR High In Voltage:

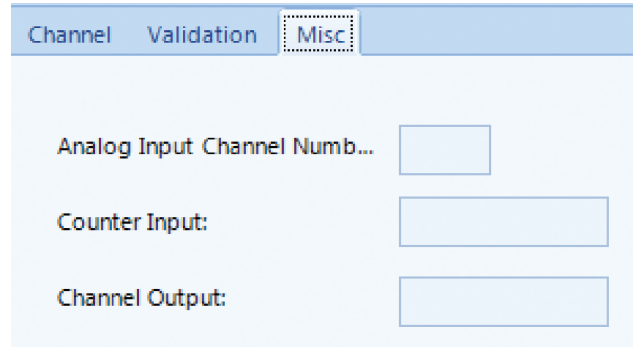
WDR Low In Voltage:

WDR High Out Voltage:

WDR Low Out Voltage:

The **Rainfall channel** uses the meteorological input card in the 8832 and 8864 logger or a status input in an 8872 (set to “Counter” mode), and calculates accumulation by counting the number of pulses received during the averaging interval, typically received from a tipping bucket rain gauge. This count is then scaled to engineering units, usually inches of rain per hour.

- ◆ The Counter Input is the number of pulses that will equal one engineering unit (normally 1).
- ◆ Channel Output is the engineering units corresponding to the number of pulses counted.



The screenshot shows a configuration window with three tabs: "Channel", "Validation", and "Misc". The "Misc" tab is selected and highlighted with a dotted border. Below the tabs, there are three input fields:

- "Analog Input Channel Numb..." with a small rectangular input box.
- "Counter Input:" with a larger rectangular input box.
- "Channel Output:" with a larger rectangular input box.

Adding Channels to Data Loggers

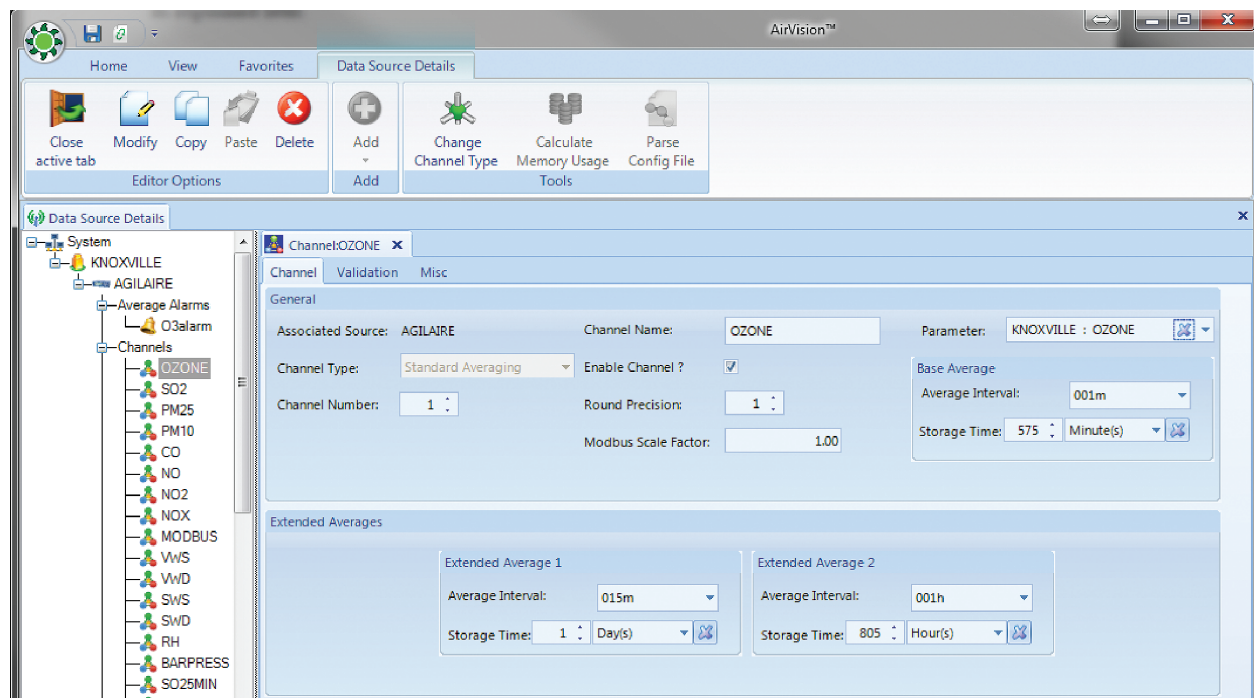
Still in the **Configuration Editor, Data Source Details**,

- ◆ select a **Logger** that has already been added to a **Site** (see “Adding Loggers to Sites”)
- ◆ click the **Add** button.
- ◆ select **Add Channels** and
- ◆ select a **Channel Type**, e.g., Standard Averaging, GSI, VWS, etc.
- ◆ select a **Channel Number** (a channel number will automatically be added in order)
- ◆ select a **Parameter**. When you select a parameter, the Channel Name will automatically be changed to match the Parameter name.

For the remainder of the prompts on the form, consult the ESC Model 8816/8832 User Manual or ESC|8864 Data Controller User Guide.

- ▶ **Note:** When you first open the Channel editor the **Channel Name** will be displayed as Chan1, Chan2, etc. When you select a Parameter, the Channel Name will automatically be changed to match the Parameter name; however, you can edit the Channel Name if you choose. After the channel is downloaded to the data logger, the Channel Name will be displayed as the **Instrument Name** in the logger.
 - ◆ select an **Average Interval** and **Storage** for the **Base Average**, **Extended Average 1**, and **Extended Average 2**.
 - ◆ Click the **Save** button

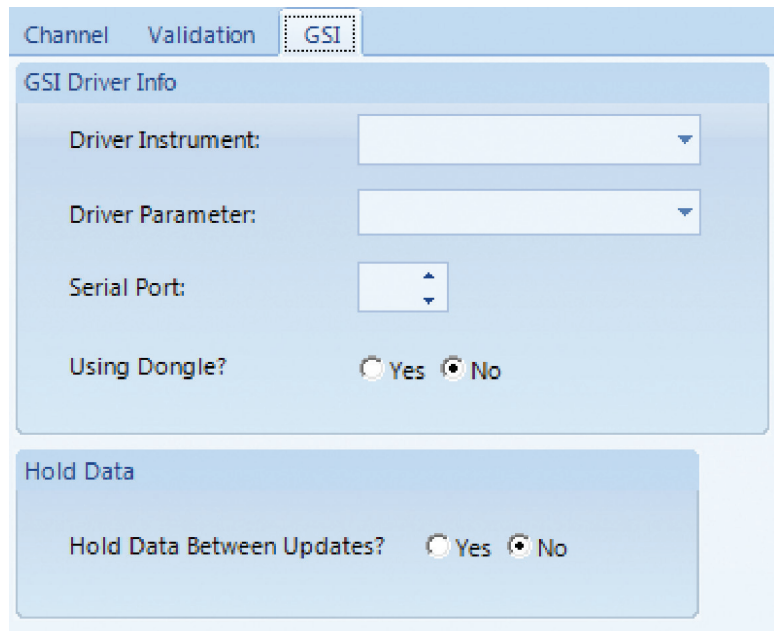
Follow the same procedure to add calibrations, average alarms, and digital event triggers, as explained later.



Adding channels to loggers in the Data Source Configuration from Configuration Editors

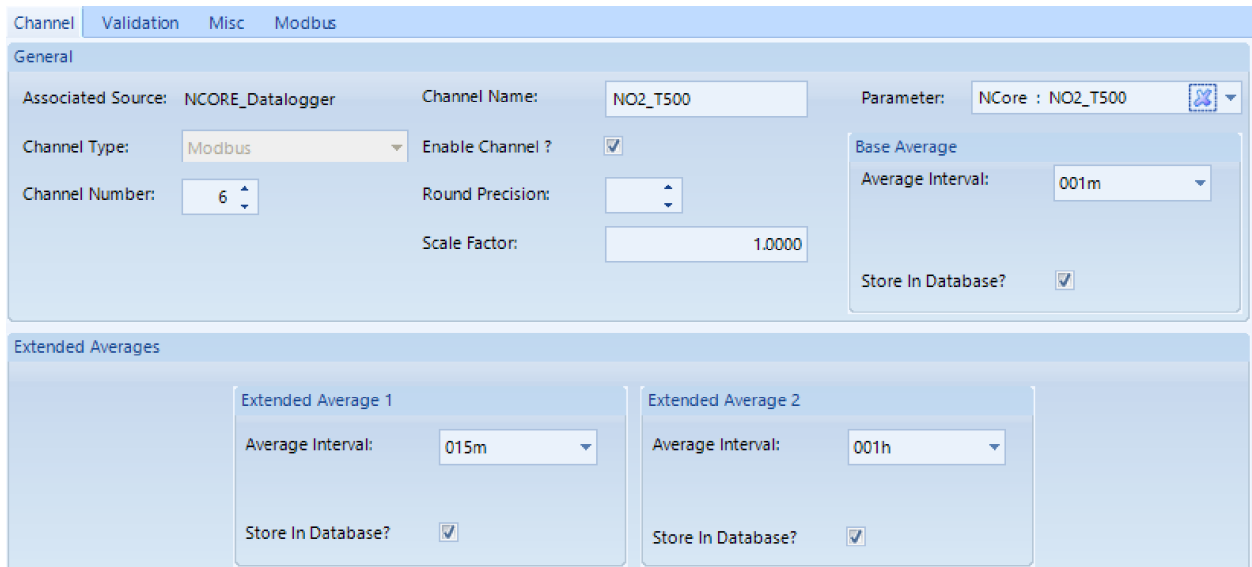
Two channel types are handled differently in AirVision than in previous systems; both improve on digital data acquisition integration.

- ◆ The first channel type, the GSI (Generic Serial Interface) channel, is used for RS-232 based instruments. AirVision includes a library of GSI drivers for a wide variety of instruments. Choose the instrument, the parameter, and designate which serial port is connected. Using a dongle can be designated if the instrument connection requires a hardware dongle (e.g., C-Series Analyzers in a daisy-chain configuration, or Ecotech analyzers with an 8832).



GSI channel configuration

- ◆ The second channel type (and a better approach for digital data acquisition) is the Modbus channel. Designate an Instrument that has been previously configured in the Data Source Details editor, and select a parameter.



Modbus channel configuration

Like the GSI channel, AirVision simplifies the configuration process by automatically creating and downloading the data logger's server configuration file in the background. Since Modbus instruments have additional networking information that needs to be known, you must create an instance of the Modbus instrument in the Data Source Details editor before creating the Modbus channels for that instrument. (This prevents the need to repeat entry of the networking information for each channel).

To create the instrument, go to the Data Source Details editor, select the appropriate data logger object in the tree, and select **Add > Logger Modbus Instrument** on the ribbon.

Misc tab in Add Modbus

You must then enter the following fields:

- ◆ **Modbus Instrument Name**--a user-defined label for the instrument
- ◆ **Instrument Model**--select from picklist of known analyzers
- ◆ **Device ID/Code**--this is set in the analyzer, and is some value from 1-255
- ◆ **Modbus Command Type**--defines which Modbus command is used to read data from the analyzer (3 for TECO, 4 for API, consult instrument documentation for other brands)
- ◆ **Poll Interval (seconds)**--how often data should be requested from the instrument, in tenth of a second increments. Recommended values are 20 to 30 (2 to 3 seconds), perhaps longer if analyzer has CPU limitations.
- ◆ **Timeout (MS)**--Designates the time the logger will wait on an instrument for a Modbus response. Typical values are 250-750 MS if an instrument starts to encounter problems with dropped readings (otherwise leave as blank/default). It is recommended this field be left blank unless analyzer communication issues are encountered.

- ◆ **Combine Register Blocks**--For 8872 only, this forces the logger to make a single modbus request for a large register range instead of multiple small requests. While this can be more efficient, not all analyzers can support this.
- ◆ **TCP Ip Address**--IP address of the instrument, as viewed from the logger’s perspective
- ◆ **TCP Ip Port**--Port used by the instrument for Modbus requests, usually “502”.

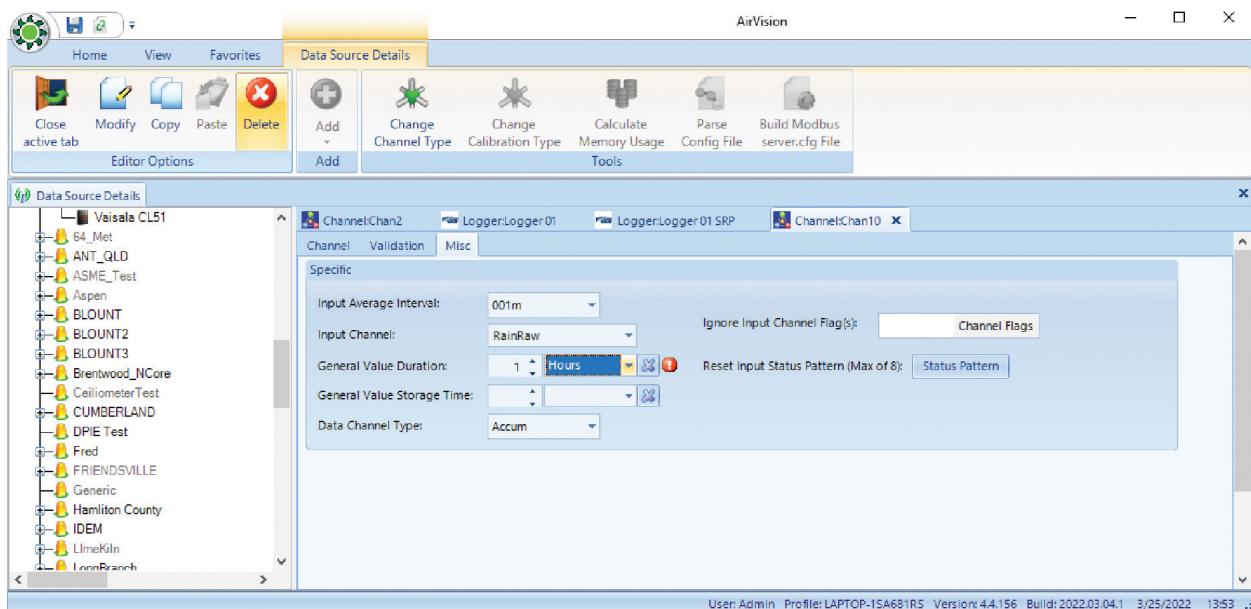
Once the instrument is configured and saved, you can then use the **Add Channel > Modbus** in the **Data Source Details** editor. Under the **Misc** tab, select the defined analyzer and the parameter in the instrument from a picklist. If you need a parameter does not exist in the picklist, contact Agilaire Support (support@aglairecorp.com) and we will add it to your system.

Other Channel Types: External Channels

The Model 8872 supports a new channel type “E” for External Channels. These allow the user to create a ‘fake’ channel associated with parameter from a directly polled instrument (e.g., BAM, E-Sampler, etc), where the logger is not doing real-time acquisition (e.g., directly polled in instruments in an 8872). It exists ONLY to create a channel number for use in AirVision polling. The External type channel requires no other special configuration, and is ignored by the Site Node Logger process.

Scaling Factors (Model 8872 only)

Modbus and GSI channels in the 8872 can use the **Modbus Scaling Factor** to convert floating point data from the instrument before using it in averages, calibrations, etc. This can be used to convert an analyzer that only provides PPB data on the Modbus link to PPM data, or similar conversions. This approach is preferred over **Analyzer Units in the logger**, since the **Analyzer Units** conversion only takes place on averages and calibration data, but causes inconsistency with other logger configuration settings (alarm limits, calibration expected values, etc).



Modbus Scaling Factor

Validation and Flags

Flags in AirVision can generally come from the data source (data logger, instrument), or applied later via data editing.

For data coming from data loggers (8816, 8832, 8864 or 8872), the flag list and sources of the flags are as follows. Flags are listed below in order of priority (from the data logger's perspective). Some flags are 'instantaneous' flags applied to readings (and visible on all resultant averages), while some flags are only applied to the particular average interval they are set for, like a high or low limit. Flags in **red** will invalidate the readings for the period the condition exists.

FLAG	TYPE	DESCRIPTION	SOURCE OF FLAG
<	Average	Insufficient data for valid average	Automatically applied by logger if less than 75% or defined % valid in Validation Settings.
>	Average	Sufficient data for valid average, but some data missing	Automatically applied by logger if > 75% (or user defined threshold) but < 100% of readings valid.
P	Instantaneous	Power failure	Power failure experienced (invalidates one base average).
D	Instantaneous	Channel Offline	Channel disabled via user interface (Logger Toolbox in 8872).
T	Instantaneous	Out Of Control due to bad Cal	Normally a CEM feature, if cal drift > OOC limit set in Calibration program, then channel invalid until a good cal is passed.
F	Instantaneous	Boiler Offline (CEM)	Normally CEM feature, boiler is considered offline based on status input pattern configured in Validation settings.
B	Instantaneous	Bad Instrument Stations	Instrument is considered offline based on configured status input pattern. Will also appear during periods of Modbus or RS-232 communication 'dropouts' between logger and instrument.
C	Instantaneous	Instrument in Calibration	Logger running calibration program affecting this instrument/channel.
M	Instantaneous	Instrument in Maintenance	Channel disabled via user interface (Logger Toolbox in 8872) or via configured status input.
O	Instantaneous	Analog Overrange	Single reading > full scale of analog range, invalidates the base average.

FLAG	TYPE	DESCRIPTION	SOURCE OF FLAG
U	Instantaneous	Analog Underrange	Single reading < negative end of full scale of analog range, invalidates the base average.
A	Instantaneous	Math Error	Error executing math pack channel equation, most commonly divide by zero.
+	Instantaneous	Maximum Reading Error	Reading > configured “Maximum Reading”, invalidates the base average.
-	Instantaneous	Minimum Reading Error	Reading < configured “Minimum Reading”, invalidates the base average.
R	Instantaneous	Rate of Change Error	Reading changed from one reading to another > the configured rate of change limit.
H	Average	High High Limit Exceeded	Average (e.g., 1m, 1h) value > configured limit.
L	Average	Low-Low Limit Exceeded	Average (e.g., 1m, 1h) value > configured limit.
h	Average	High Limit Exceeded	Average (e.g., 1m, 1h) value , configured limit.
l	Average	Low Limit Exceeded	Average (e.g., 1m, 1h) value < configured limit.
J	Average	High High Rate of Change	Change from previous average > set limit.
j	Average	High rate of change	Change from previous average > set limit.
V	Instantaneous	Digital Information#1	Configured status input pattern detected.
W	Instantaneous	Digital Information#2	Configured status input pattern detected.
X	Instantaneous	Digital Information#3	Configured status input pattern detected.
Y	Instantaneous	Digital Information#4	Configured status input pattern detected.
Z	Instantaneous	Digital Information#5	Configured status input pattern detected.
f	Average	Floor limit exceeded	Average < configured Floor Limit, value changed to floor value.
c	Average	Ceiling limit exceeded	Average > configured Ceiling limit, value changed to ceiling value.

The Validation settings can be found in Data Source Details (or Logger Channels in the 8872):

Note that the ‘Suppress (>) for Skipped Readings’ is only available for the Model 8872. This setting is for certain GSI or Modbus instruments that occasionally ‘drop’ readings, regardless of timeout settings. When settings are made in the AirVision central server, they must be downloaded to the 8816/8832/8864 or Sync’d with the 8872 to take effect. The server ONLY stores these settings for download/sync, and does not act upon the settings in the Validation screen itself. They are used in real-time by the logger’s real-time data processing engine.

Other Notes:

Note also that flags may be applied by the Automatic Data Validation Processor (ADVP) or in the Data Editor (although any data edited in the Data Editor will also have an “E” editing flag).

Other status flags that appear in the Flags Detail and that can be applied via the Editor or ADVP are as follows. None of these invalidate data (unless set to do so in the Flags Editor):

I = Invalidated Via Edited

? = Suspect Data

> = Exceedance Data

z = Zero Adjusted

Q = Quality Assured

m = Maintenance Data

a = Audit

p = Precision Check

E = Edited Data (automatically applied via any edit via Average Data Editor)

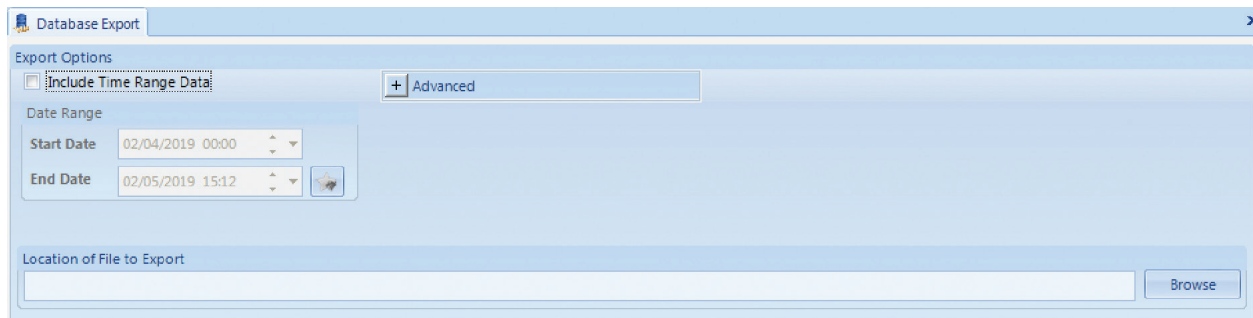
Note that some users may change the definition/label of these “Server Side Flags”.

Parameter Tag Editor

The Parameter Tag Creation Tool (**List Editors>Parameter Tag Editor**) is used only to create entries in the database for parameter / average interval combinations if you want to use the Average Data Editor as the sole means of data input or to create tags for the Data Rollup Utility. It is not necessary to use this tool for parameters that are polled, imported using the File Import Tool, or manually entered through the Sample Data Editor, as AirVision creates the database tag entries automatically.

Database Export

The **Database Export tool (Utilities>Table Import/Export>Database Export)** allows a sample of the AirVision database to be exported in XML format for use by Agilaire in support and troubleshooting efforts. Select the **Browse** button in the **Location of File to Export** field and browse to the location of the XML file to be exported. The path to the file and the file name will be displayed in the export field. Click the **Process Export** button on the Ribbon. The configuration will be exported to an XML file. Keep in mind that the export only gets basic essential settings and does not export the complete configuration of the system and should not be used as a primary backup file.



Database Export tool (Utilities>Table Import/Export>Database Export)

Adding Communication Routes

The next step is to identify to the AirVision Server how to communicate with each logger by setting up Communication Routes. After you configure the **Source** in **Data Source Details** from **Configuration Editors**, click **Server Configuration** to configure a Communication Route for each logger.

TCP/IP Routes

Highlight the **Server** and click the **Add TCP** button to establish the communication route described below:

- ▶ **Note:** TCP/IP connections are easier and faster than modems.

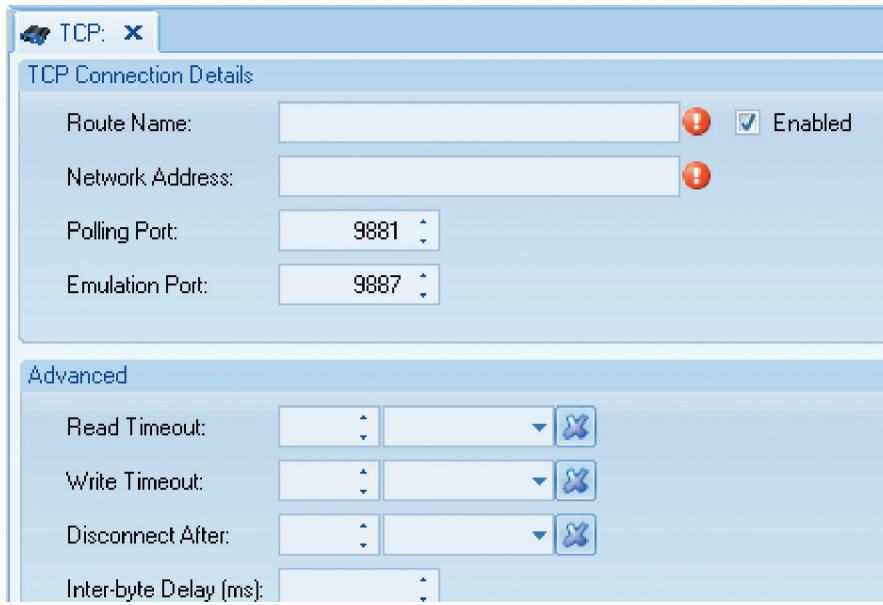
For sites with a TCP/IP connection,

- ◆ Click the **Add TCP Route** button
- ◆ Enter a **Route Name**, e.g., Agilaire,
- ◆ Enter a **Network Address**, e.g., 172.16.1.240 (or a DNS-resolvable name).

The defaults are set for 8832 defaults, but can be changed based on your network/route definitions:

- ◆ **Polling Port** at 9881
- ◆ **Emulation Port** at 9887 for the 8816/8832 and Port 22 for the 8864. (Emulation ports are only used with the Model 8816, 8832 and 8864 data loggers.)
- ▶ **Note: Advanced Settings** should **ONLY** be modified when recommended by Agilaire support (865-927-9440 or email support@agilaire.com). AirVision is designed with defaults that are best for most applications.
 - ◆ **Read Timeout-** This setting overrides the default timeout period for a TCP data read.
 - ◆ **Write Timeout-** This setting overrides the default timeout period for a TCP data transmission.
 - ◆ **Disconnect After-** This setting controls the closing of a TCP connection after a period of inactivity. Normally, AirVision assumes the TCP connection should remain open for optimum polling efficiency; however, some wireless IP modems will close the connection from their end, and TCP does not allow the server to automatically detect this drop. In these cases, AirVision can be set to forcibly close and re-open the connection.
- ▶ **Note: For wireless modems**, we recommend a setting of 10-30 seconds for most applications.
 - ◆ **Inter-byte Delay (ms)-** This feature can be used to slow the inter character transmission speed, if needed.

Click the **Save** button.



Adding a TCP Route in Configuration Editors > Data Source Details or Configuration>Server Configuration

Adding Serial Routes for Direct Communication

For sites with a serial route for a direct connection,

- ◆ Highlight the **Server** and click the **Add Serial** button in **Server Configuration**
- ◆ Enter a **Route Name**, e.g., Direct,
- ◆ Enter a **Comm Port**, e.g., COM4
- ▶ **Note:** This must be in the format of 'COMx' or 'COMxx', with uppercase "COM", no spaces, the same name as found in Windows for the COM port.
- ◆ Enter a **Baud Rate** or accept the default 9600
- ◆ **Data Bits** should be 8
- ◆ **Stop Bits** should be 1
- ◆ **Parity** should be None.
- ▶ **Note: Advanced Settings** should **ONLY** be modified when recommended by Agilaire support (865-927-9440 email support@agilaire.com). AirVision is designed with defaults that are best for most applications.
- ◆ **Read Timeout** overrides the default timeout period for data read..
- ◆ **Write Timeout** overrides the default timeout period for a data transmission.
- ◆ **Disconnect After** controls the closing of a connection after a period of inactivity.
Normally, AirVision assumes the direct connection should remain open for optimum polling efficiency; however, AirVision can be set to forcibly close and re-open the connection.
- ◆ **Inter-byte Delay (ms)** can be used to slow the inter character transmission speed.

Click the **Save** button.

- ▶ **Note:** Communication Routes can also be added in **Configuration Editors > PC Configuration** by highlighting the **Server** icon and clicking one of the **Add** buttons.

The screenshot shows two configuration windows. The top window, titled 'COM: x', contains 'Serial Connection Details' with the following fields: Route Name (empty), Comm Port (empty), Baud Rate (9600), Data Bits (8), Stop Bits (1), and Parity (None). There are red exclamation mark icons next to the Route Name and Comm Port fields, and an 'Enabled' checkbox is checked. The bottom window, titled 'Advanced', contains: Read Timeout (empty), Write Timeout (empty), Disconnect After (empty), and Inter-byte Delay (ms) (empty). Each of these four fields has a small 'X' icon to its right.

Adding a Serial (Direct) Route in Configuration Editors > Data Source Details or Configuration>Server Configuration

Adding Remote Modems

For sites with a modem, add the remote modem details:

- ◆ Open **Server Communication** and click the **Add Modem Route** button in and select **MODEM**
- ◆ Enter a **Route Name**, e.g., Modem1
- ◆ Enter a **Phone number**, e.g.,865-927-9440
- ◆ Select a **Modem** from the drop-down list or leave the default of **Use any available modem**
- ◆ **Preferred Modem Baud Rate**. If set, AirVision will first seek a modem whose max baud rate matches this preferred speed. If none is available, it will use any of the other modems in the pool.
- ◆ Enter a number of **Redial attempts** (default is 1)
- ◆ Enter **Time between redial attempts** (default is 1 minute).
- ◆ Click the **Save** button.

The screenshot shows a configuration window titled 'MOD: x'. It is divided into three sections:

- Modem Connection Details:**
 - Route Name: [Empty text box] [Red warning icon]
 - Phone Number: [Empty text box] [Red warning icon]
 - Modem: (Use any available modem) [Dropdown arrow]
 - Preferred Modem Baud Rate: (Any) [Dropdown arrow]
 - Enabled: Enabled
- Redialing Options:**
 - Redial Attempts: [Spin box with value 1]
 - Time Between Redial Attempts: [Spin box with value 1] Minutes(s) [Reset icon]
- Advanced Options:**
 - Override Serial Baud Rate: (Use default) [Dropdown arrow]
 - Override Serial Read Timeout: [Spin box] [Dropdown arrow] [Reset icon]
 - Override Serial Write Timeout: [Spin box] [Dropdown arrow] [Reset icon]
 - Connection Timeout: [Spin box] [Dropdown arrow] [Reset icon]
 - Hang-up Idle Time: [Spin box with value 5] Second(s) [Reset icon]

Adding a Remote Modem Route in Configuration Editors > Data Source Details

- ▶ **Note: Advanced Settings** should **ONLY** be modified when recommended by Agilaire support (865-927-9440 or email support@agilaire.com). AirVision is designed with defaults that are best for most applications.
 - ◆ **Over ride Serial Baud Rate**- If set, AirVision will force the COM port connection to a specific speed when communicating with the modem.
 - ◆ **Over ride Serial Read Timeout**- Overrides the default timeout period for a serial transmission from the server to the remote.
 - ◆ **Over ride Serial Write Timeout**- Overrides the default timeout period for a serial response from the remote after a command has been sent.
 - ◆ **Connection Timeout**- Sets the time before a dialing attempt is aborted if the modem does not provide a valid response code indicating a connection. We recommend a setting of 10-15 seconds for most applications.
 - ◆ **Hangup Idle Time**- Sets the time before an idle modem connection is considered ready for disconnection Defaults to 5 seconds (this would be five seconds in addition to the Serial Read Timeout), but can be extended if responses from loggers are slow.

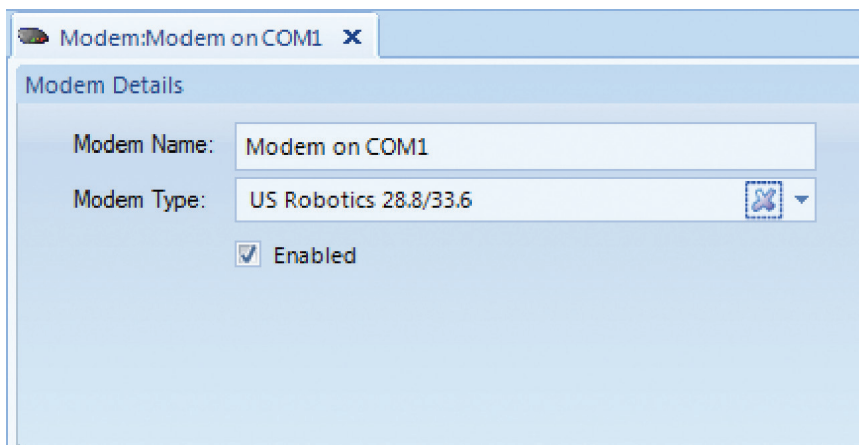
Adding a Modem Route for Central Modem

For communication via modem, add a **Modem Route** to dial out from the **Central modem** attached to your Executive PC. From **Configuration Editors > Server Configuration**:

- ◆ highlight the **COM1** icon (or COM2, COM3, etc.)
- ◆ click the **Add Modem** button.
- ◆ enter a **Modem Name** (such as Central modem)
- ◆ select a **Modem Type** from the drop down list, e.g., U.S. Robotics 28.8-33.6.

Click the **Save** button. The modem will be added below the COM icon in the menu tree.

- ▶ **Note:** Communication Routes can also be added in **Configuration Editors > Server Configuration** by highlighting the **Server** icon and clicking one of the **Add** buttons.



Central Modem Configuration from Configuration Editors > Data Source Details > Communication tab > Create New Route button.

Associating an Existing Route to a Logger

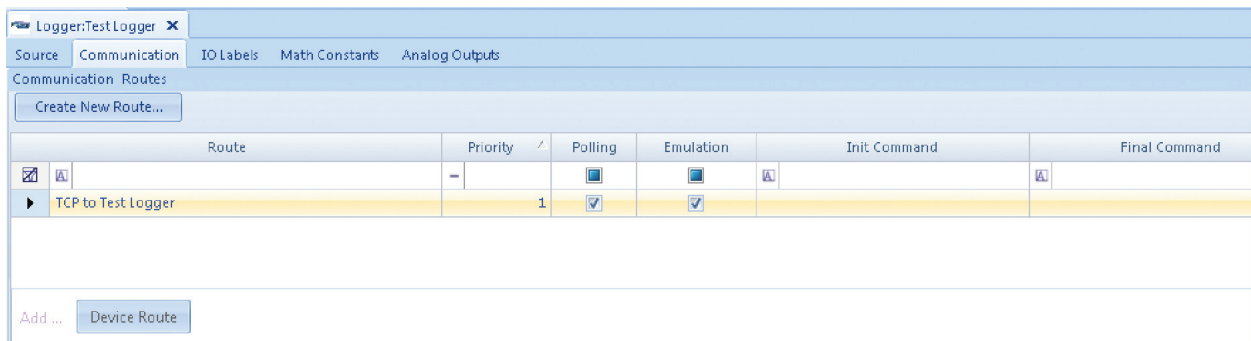
Each **logger** must be associated with a **Communication Route**. Open **Configuration Editors > Data Source Details > Logger** and select the **Communication** tab:

- ◆ Highlight the **Route** row
- ◆ Assign a **Priority** number
- ◆ Select **Polling** and/or **Emulation** if applicable (Emulation is for linking to the logger.)
- ◆ Optionally, enter an **Initialization Command** and a **Final Command**
- ◆ Click the **Save** button.
- ◆ Click the **Save** button.

To add a new Route, click the **Create New Route** button.

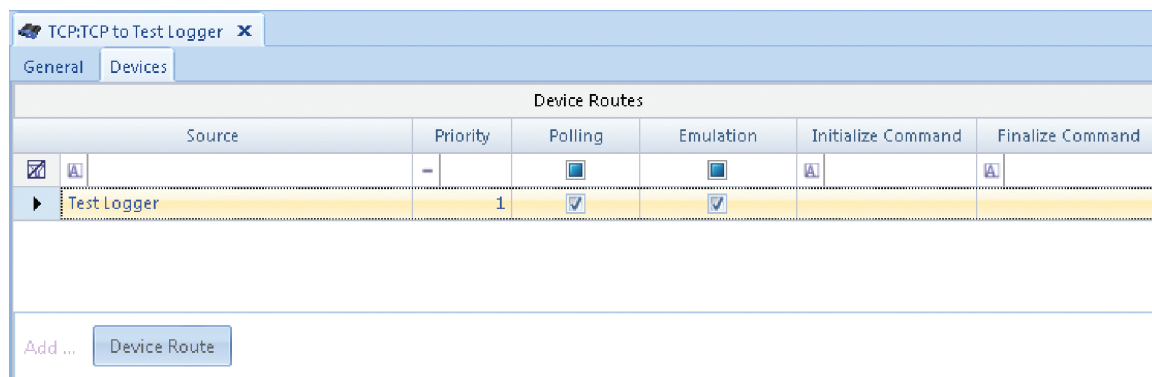
⇒ **Important:** Some configuration changes require you to restart the the AirVision Server. If a **System Restart** is necessary, you will be prompted by AirVision when you click **Save**. If you click **Yes** at the prompt, AirVision will restart the system automatically. If a required server restart is not done, you will not be able to link to logger. (Two server restarts may be necessary to synchronize the network for IP-based connections.)

► **Note:** If you need to restart the system manually, open the **Utilities** menu and select **Server Restart**. Select an **Executive** in the **Server Restart** screen, then click the **Restart Executive Service** icon in the upper left corner.



Associating Data Logger with TCP/IP connection to Driver in Configuration Editors > Data Source Details > Communication tab

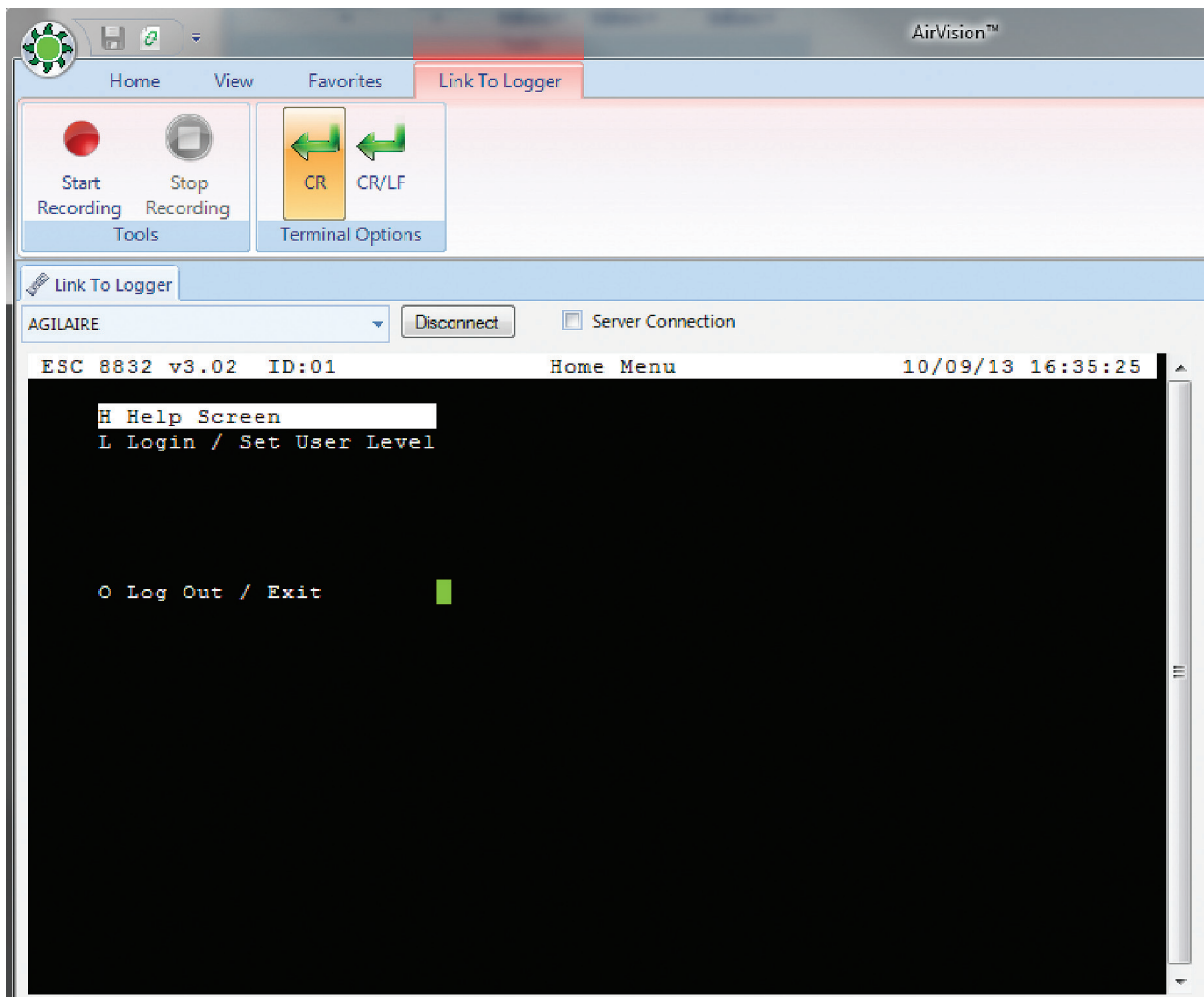
Or, the logger can be associated with the Communication Route through the Server Configuration menu by selecting the Devices tab on the Device Route, and click the Add Device Route button at the bottom of the screen.



Testing Your Connection (Model 8816 / 8832 / 8864 only)

To test your connection, select **Link to Logger** from the **Utilities** menu. Select a logger from the drop-down list and click **Connect**. Linking to the logger means that your connection is good but does not ensure that you will be able to download or poll. Be sure to always select **O Log Out / Exit** on the Link to Logger screen before clicking the Disconnect button.

- ◆ **Important:** If you have not restarted the AirVision service after making configuration changes, you must restart the AirVision service before you can link to logger. Open **Utilities > Restart**. Be sure the Executive is selected and click **Restart Executive Service** in the upper left corner. Sometimes two server restarts are required to synchronize the network for IP-based connections.
- ▶ **Note:** If you need to restart the system manually, open the **Utilities** menu and select **System Restart**. Select an **Executive** in the **System Restart** screen, then click the **Restart Executive Service** icon in the upper left corner.



Testing your connection from Utilities > Link to Logger

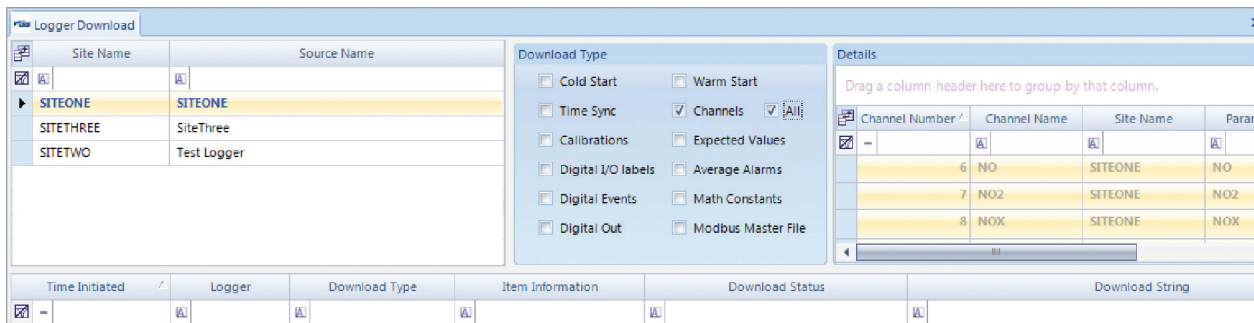
Sending Configurations to Logger (Model 8816 / 8832 / 8864 only)

To send configurations to the logger:

- ◆ Open **Utilities > Send 8816/32/64 Program**. Configuring channels was explained in the section “Adding Channels to Data Loggers.”
- ◆ Select the **Site/Source Name**
- ◆ Select the **Download Type(s)** from the following check list:
 - Cold Start
 - Time Sync
 - Calibrations
 - Digital I/O Labels
 - Digital Events
 - Digital Out
 - Warm Start
 - Channels. If you select Channels, the option to select All will be activated.
 - Expected Values
 - Average Alarms
 - Math Constants
 - Modbus Master File
- ◆ In the Details section, select rows from a table with the following columns: Channel Number, Channel Name, Site Name, Parameter Name, Source Name, Channel Enabled, and Channel Type.
- ◆ click **Download**.

The **Log Viewer** will display details of the download in the bottom section of the screen.

- ▶ **Note:** The **Log Viewer** can also be accessed directly from the **Status Displays** menu.
- ▶ **Note:** Multiple loggers can be downloaded at the same time without a cold start.

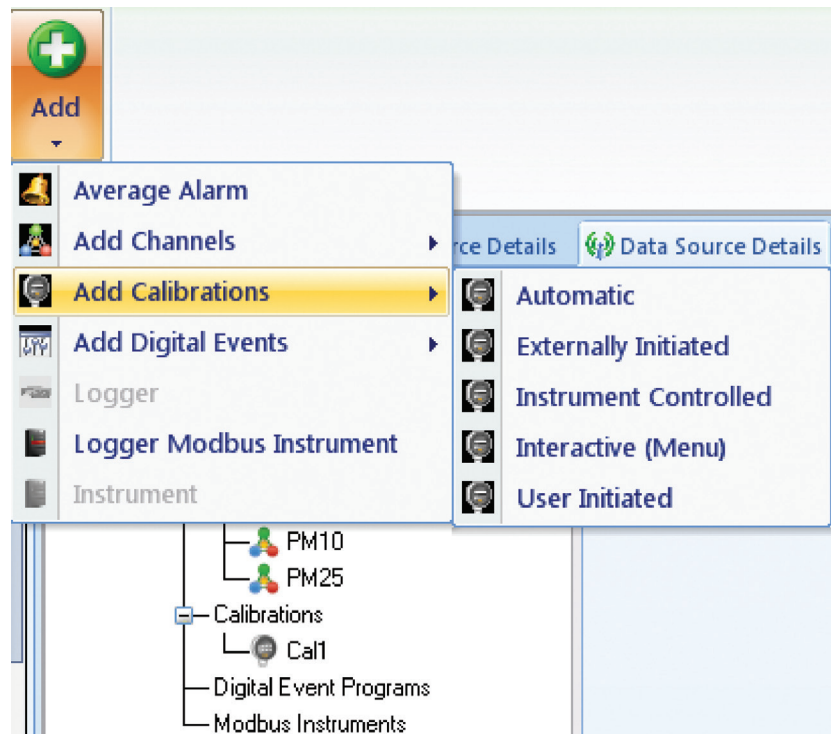


Logger Download in Utilities > Logger Download

Setting Up Calibrations

To configure calibrations:

- ◆ open **Configuration Editors > Data Source Details**
 - ◆ highlight the **Logger** in the tree menu
 - ◆ click the small arrow under the **Add** button
 - ◆ select **Calibrations** from the drop-down list
 - ◆ select one of the following calibration types:
 - Automatic** (runs at scheduled time and interval)
 - Externally Initiated** (starts only when status input is detected)
 - Instrument Controlled** (follows multiple status inputs to detect calibration start)
 - Interactive (Menu)** (all start and timing controlled via menu)
 - User Initiated** (Only started via menu)
- **Note:** Configuration information must be downloaded to the data logger before a new sequence can be initiated.

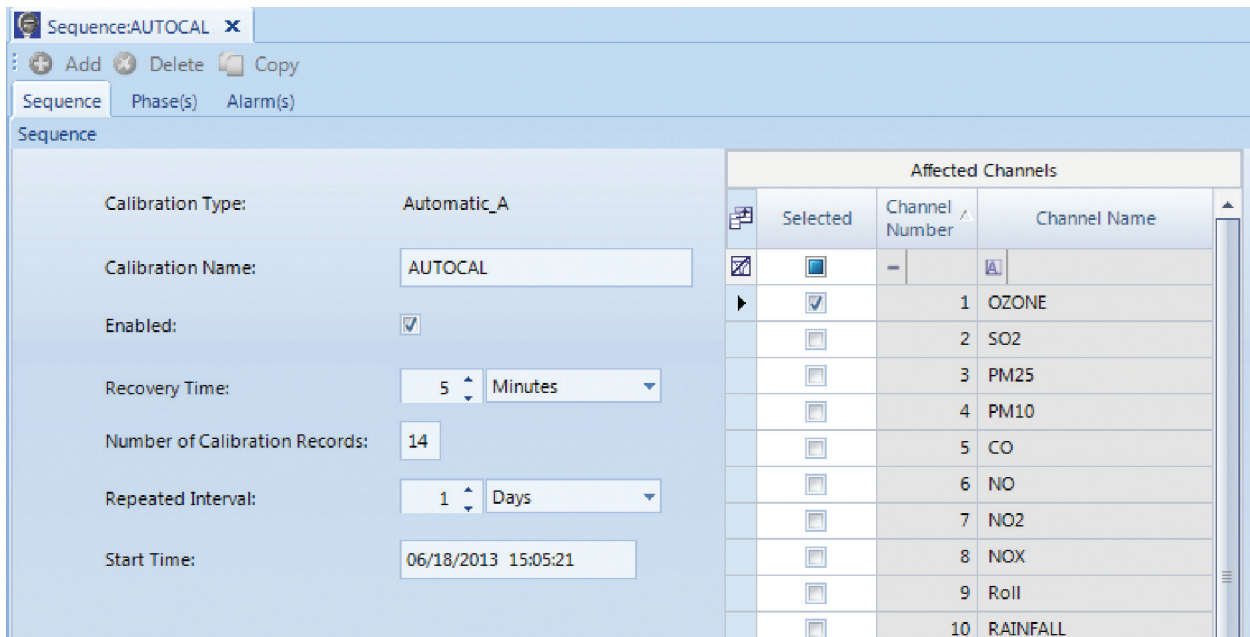


Adding calibrations in Configuration Editors > Data Source Details

Configuring Automatic Calibrations

If you configure **Automatic** Calibrations, the cal you enable will be automatically initiated by the data logger's internal clock. The Automatic Cal Sequence configuration screen has the following fields:

- ◆ **Calibration Type** will be already filled in (Automatic_A).
- ◆ **Calibration Name** is required to identify the cal program.
- ◆ Check **Enabled** if the calibration is to run.
- ◆ **Number of Calibration Records** determines how many cals the data logger will store before overwriting.
- ◆ **Recovery Time** specifies the time required to purge cal gas after phases.
- ◆ **Repeated Interval** determines how often cal sequence will repeat.
- ◆ **Start Time** determines what time cal sequence will start.
- ◆ **Affected Channels** determines which channels will be taken off-line during cal.
Select from a list of previously configured parameters.



Automatic Calibration configuration in Configuration Editors > Data Source Details

- ◆ **Recovery Pattern (8872 only)** This allows a pattern of control outputs (or a modbus command) to be used at the start of the recovery phase (e.g., commanding the calibration to go into 'STANDBY" mode).

Configuring Phases

To set up Phases:

- ◆ Click the **Phase(s)** tab behind the Sequence Cal tab.
- ◆ To enter a phase name, click the green **Add** button above the tabs and select **Phase** from the drop-down list. .
- ◆ Enter a **Phase Name**, **Phase Number**, **Duration Type**, **Recovery Time**, and click to **Enable**.
- ◆ To configure a Status Pattern, click the row in **Status Pattern** column and a check list of **Output Control Patterns** will come up. Note that you can only "Activate" output lines, so any lines with the "off" status will be ignored.
- ◆ After the Phase table is configured, click the green **Add** button again and select **Phase Channels**.
- ◆ Select a **Channel** from a drop-down list, and optionally enter an **Expected Value**, **Drift Limit**, **Auto Correct** (click to enable), **Store Cal Results** (click to enable), **Write Result to Constant**, **Error Method**, **Write Expected Value to Constant**, and **Out of Control Limit (CEM)**.

The screenshot shows the 'Sequence:AUTOCAL' configuration window. It has tabs for 'Sequence', 'Phase(s)', and 'Alarm(s)'. The 'Phase(s)' tab is active, displaying a table with the following data:

Phase Name	Phase Number	Duration Time	Response Time	Enabled	Status Pattern	Level
ZERO	1	001M	005S	<input checked="" type="checkbox"/>	Select Lines	ZERO
SPAN1	2	001M	005S	<input checked="" type="checkbox"/>	Select Lines	SPAN
SPAN2	3	001M	005S	<input checked="" type="checkbox"/>	Select Lines	SPAN
PREC	4	001M	005S	<input checked="" type="checkbox"/>	Select Lines	PREC

Below the Phases table is the 'Phase Channels' table, which is currently empty except for a header row:

Channel	Expected Value	Expected Value From Constant	Write Expected Value To Constant	Write Result To Constant	Store Calibration Results	Error Method	Warning Drift Limit	Out of Control Limit	StartDate	EndDate
OZONE	0				<input checked="" type="checkbox"/>	Difference		3		

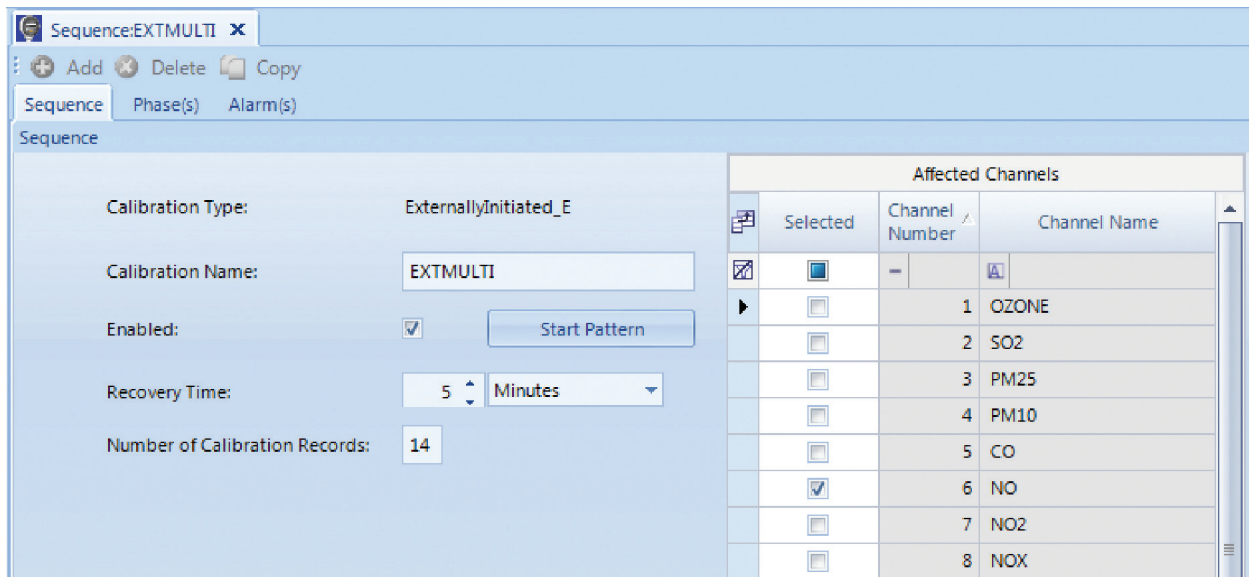
Configuring calibration phases in Configuration Editors > Data Source Details

Optionally, the user can define the Cal Level for each calibration phase using a picklist (ZERO, PREC, SPAN, 20%, etc). These levels are used by the Calibration Adjustment Tool and the AQS Precision Reporting for Gases functions, but designation of the levels are not required.

Externally Initiated Calibration

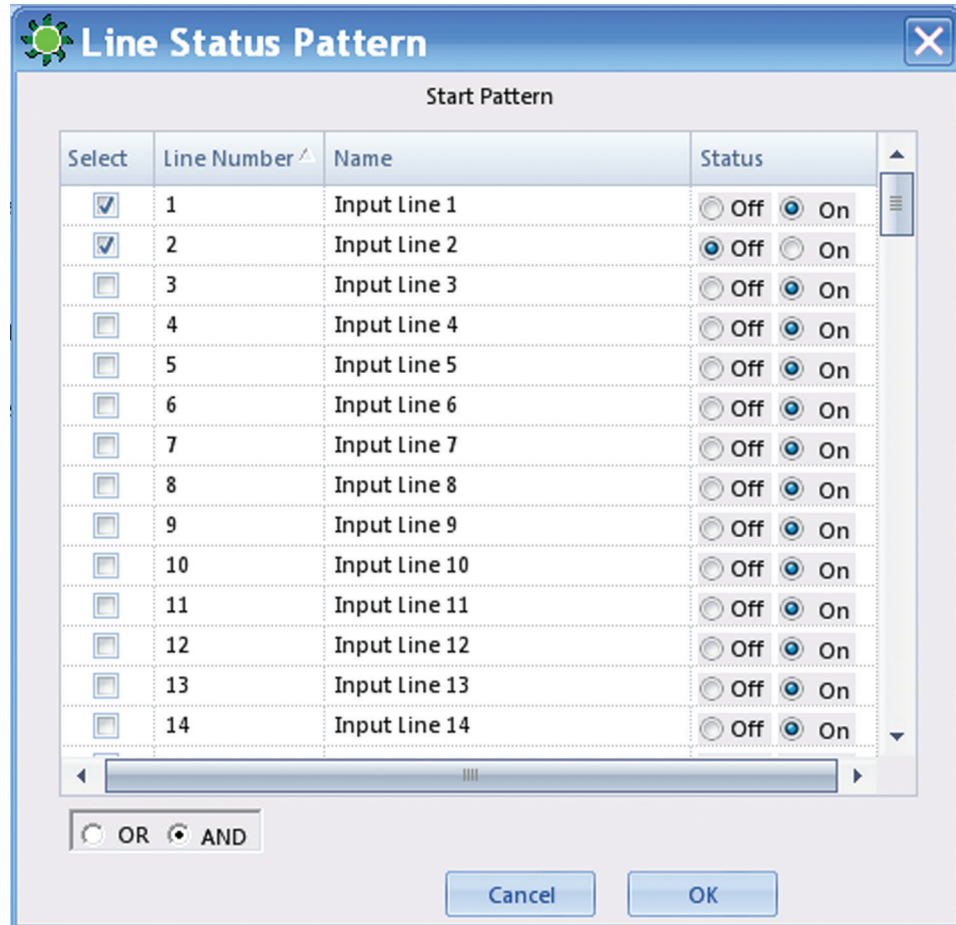
Externally initiated calibration is identical to an automatic calibration except for the way it is initiated. The sequence is started when a specified pattern of input control lines is met. To configure the **Start Pattern** (Line Status Pattern), click the **Start Pattern** button.

Individual phases are then initiated sequentially. As with an automatic calibration, the duration of each phase in the sequence can be specified.



Configuring Externally Initiated Calibrations in Configuration Editors > Data Source Details

When you click the **Start Pattern** button in the **Externally Initiation Calibration** screen, you **will see a Line Status Pattern** screen. Check the **Select** box to select an **Input Line** and select a **Status** of **On** or **Off**. The Externally Initiated Cal will begin when the **Start Pattern** is met.



Configuring Start Pattern (Line Status Pattern) in Externally Initiated Calibrations in Configuration Editors > Data Source Details

Configuring Instrument Controlled Calibrations

If you configure **Instrument Controlled** Calibrations, enabled calibrations will be initiated by the data logger when it detects a specified digital input pattern. Each phase will continue until the input line pattern changes. The Instrument Controlled Cal screen has the following fields:

- ◆ **Calibration Type** will be already filled in (InstrumentControlled_I).
- ◆ **Calibration Name** is required to identify the cal program.
- ◆ Check **Enabled** if the calibration is to run.
- ◆ **Number of Calibration Records** determines how many cals the data logger will store before overwriting.
- ◆ **Recovery Time** specifies the time required to purge cal gas after phases.
- ◆ **Affected Channels** determines which channels will be taken off-line during cal. Select from a list of previously configured parameters.

Affected Channels		
Selected	Channel Number	Channel Name
<input checked="" type="checkbox"/>	-	
<input type="checkbox"/>	1	OZONE
<input checked="" type="checkbox"/>	2	SO2
<input type="checkbox"/>	3	PM25
<input type="checkbox"/>	4	PM10
<input type="checkbox"/>	5	CO
<input type="checkbox"/>	6	NO
<input type="checkbox"/>	7	NO2
<input type="checkbox"/>	8	NOX

Configuring Instrument Controlled Calibrations from Configuration Editors > Data Source Details

Configuring Interactive (Menu) Calibrations

If you configure **Interactive** Calibrations, enabled calcs will be controlled by a user via a menu interface. Interactive calcs are often used for highly manual procedures, such as when bottles have to be moved around and/or calibrators manually conrolled. Interactive Cal configuration screen has the following fields:

- ◆ **Calibration Type** will be already filled in (Interactive_M)
- ◆ **Calibration Name** is required to identify the cal program.
- ◆ Check **Enabled** if the calibration is to run.
- ◆ **Number of Calibration Records** determines how many calcs the data logger will store before overwriting.
- ◆ **Recovery Time** specifies the time required to purge cal gas after phases
- ◆ **Affected Channels** determines which channels will be taken off-line during cal.
Select from a list of previously configured parameters.

Affected Channels		
Selected	Channel Number	Channel Name
<input checked="" type="checkbox"/>	-	
<input type="checkbox"/>	1	OZONE
<input type="checkbox"/>	2	SO2
<input type="checkbox"/>	3	PM25
<input type="checkbox"/>	4	PM10
<input type="checkbox"/>	5	CO
<input type="checkbox"/>	6	NO
<input type="checkbox"/>	7	NO2
<input checked="" type="checkbox"/>	8	NOX

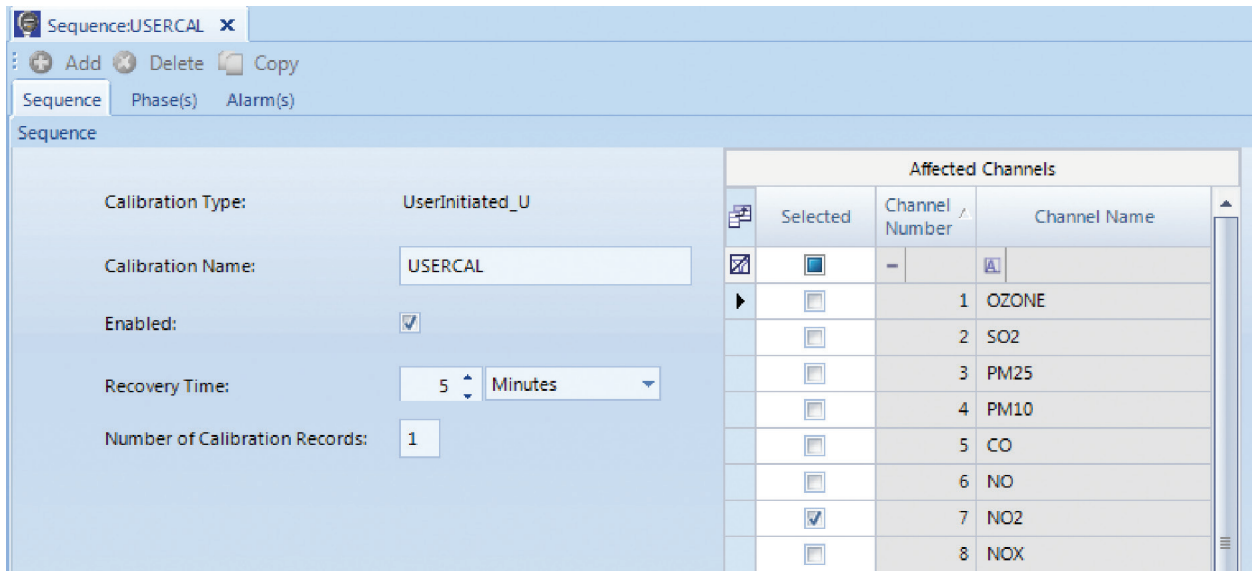
Configuring Interactive (Menu) Calibrations

Configuring User-Initiated Calibrations

Initiated calibrations are started manually through the logger's user interface. When the cal sequence is started, each phase will be initiated in order. The duration of each phase is configured with the same fields as automatic cal.

The User-Initiated Cal configuration screen has the following fields:

- ◆ **Calibration Type** will be already filled in (UserInitiated_U).
- ◆ **Calibration Name** is required to identify the cal program.
- ◆ Check **Enabled** if the calibration is to run.
- ◆ **Number of Calibration Records** determines how many cals the data logger will store before overwriting.
- ◆ **Recovery Time** specifies the time required to purge cal gas after phases.
- ◆ **Affected Channels** determines which channels will be taken off-line during cal. Select from a list of previously configured parameters.



Configuring User-Initiated Calibrations

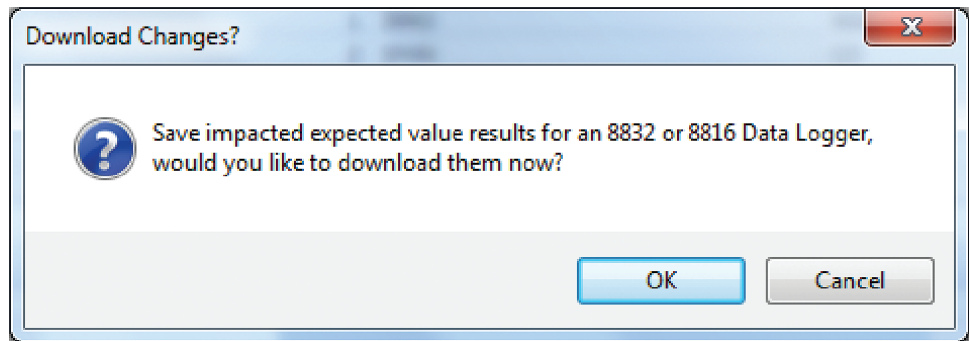
Calibration Expected Values Editor

This mimics the “Quick Expected Values” editor in the Model 8832/8864 data logger that allows the user to quickly update target values for the calibration without sorting through the Calibration configuration editor. The system shows all configured calibrations as expandable/collapsible boxes. Once opened, columns headers can be clicked to sort by phase name, expected value, etc. for easier data entry.

Source Name	Sequence Name	Phase Number	Phase Name	Channel Name	Expected Value	Expected Value from Constant
SITEONE	AUTOCAL	1	ZERO	OZONE	0	
SITEONE	AUTOCAL	2	SPAN1	OZONE	10	
SITEONE	AUTOCAL	3	SPAN2	OZONE	20	
SITEONE	AUTOCAL	4	PREC	OZONE	0	
SITEONE	COCAL	1	Zero	CO	0	
SITEONE	COCAL	2	Span1	CO	10	
SITEONE	COCAL	3	Span2	CO	20	

Calibration Expected Values Editor

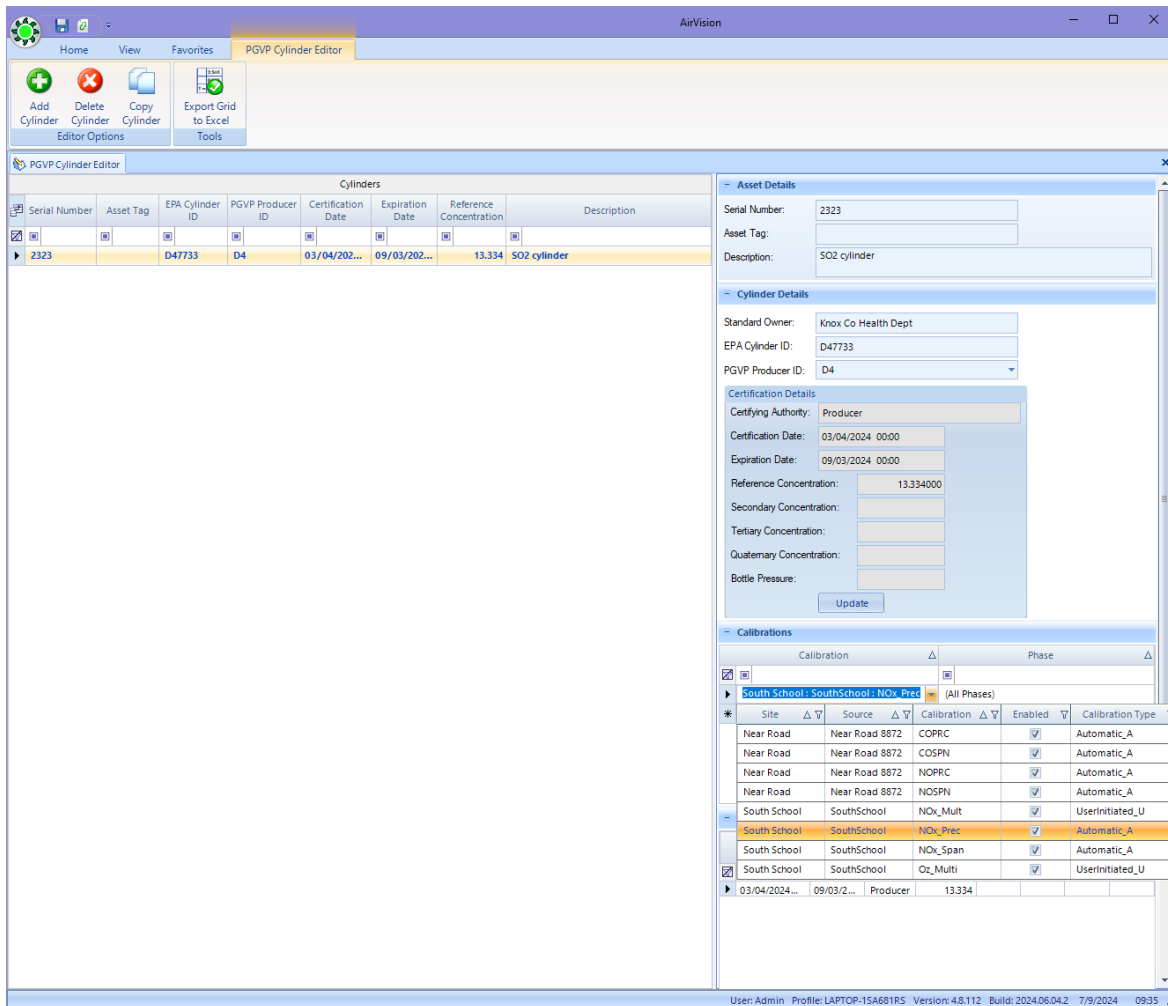
When values are saved, a pop-up window will prompt you to download changes to the data logger (8864 and 8832 only). Clicking **OK** will take you to the Logger Download form, where you can select the checkbox to only download the expected values.



USEPA PGVP Reporting

US agencies are required to report additional information about their calibration gases for the Protocol Gas Verification Program (PGVP) in their AQS calibration transactions. To accomplish this, AirVision has a PGVP Cylinder Editor (in the Configuration menu), and a method to associate those calibration checks with cylinders.

The PGVP Cylinder Editor allows entry of the Cylinder information:



Use the **Add Cylinder** or **Copy Cylinder** buttons to create new cylinders. Select the PGVP Producer ID from the static list (updated from EPA data as part of AirVision updates). Add the EPA Cylinder ID and Standard Owner, and other optional information, if desired.

Under the “Calibrations” section, you may associate the cylinder with one or more calibration programs (or, if needed, particular phases). Once the association is complete, newly polled calibration data will be associated with the cylinder information, and reported in the AQS 1-Point QC transactions.

Note that previously collected data will not retroactively be associated, but you can manually add these associations using the Calibration Data Editor using the “EPA Cylinder ID” field pick list.

Configuring Logger Digital Events

The purpose of digital event programs is to control processes Data Loggers. **Digitally Timed Events** will turn on specified **Output Lines** for the configured **Starting Time**, **Duration**, and **Repeat Interval**. **Digitally Triggered Events** are initiated by a digital input pattern that will turn on one or more digital output lines and can be used to create combinational logic to flag data, start calcs, etc. The output lines will remain active for the specified duration; at the end of this time, the output lines will be turned off unless the triggering digital input pattern still matches.

Configuring Digital Timed Events

1. Highlight the **Data Logger** in **Configuration Editors > Logger Channels** tree menu.
2. Click the green **Add** button in the ribbon and select **Add Digital Events > Timed Event**.
3. Enter a **Digital Event Program Name**, a **Starting Time**, **Output Durations**, **Repeat Interval**, and check **Enabled**.
4. If the Digitally Timed Event is for a calibration, select a **Calibration Name** from the drop-down list.
5. Click the **Output Lines** button to bring up the **Line Status Pattern** screen and select a **Line Number**. Click **OK**.

Timed Event:Timed Event

Digital Event Details

Digital Event Program Name: Timed Event

Starting Time: 08/31/2010 17:06:39

Output Duration: 5 Seconds

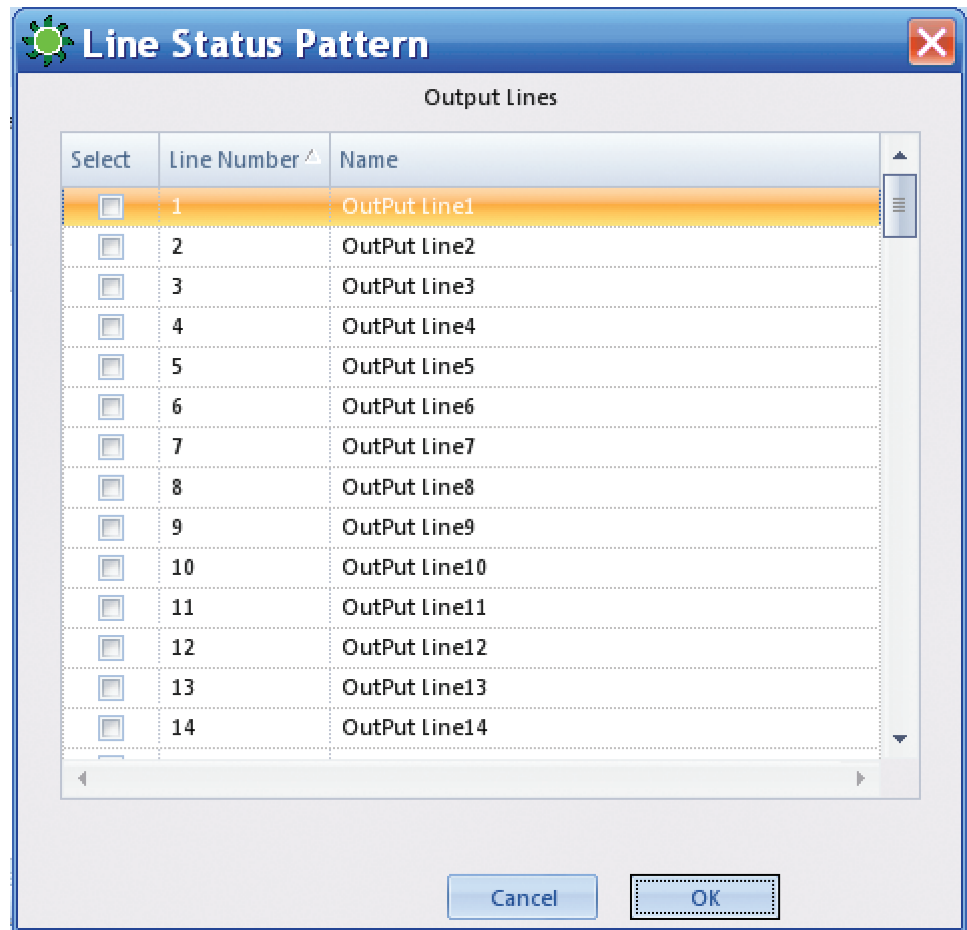
Repeat Interval: 1 Days

Enabled

Output Lines

Select	Calibration Name
<input type="checkbox"/>	AUTOCAL
<input type="checkbox"/>	COCAL
<input type="checkbox"/>	EXTERNAL
<input type="checkbox"/>	EXTMULTI
<input type="checkbox"/>	INSTRMNT
<input type="checkbox"/>	INTERACT
<input type="checkbox"/>	MENU
<input type="checkbox"/>	OZONE
<input type="checkbox"/>	USERCAL

Configuring Digitally Timed Events

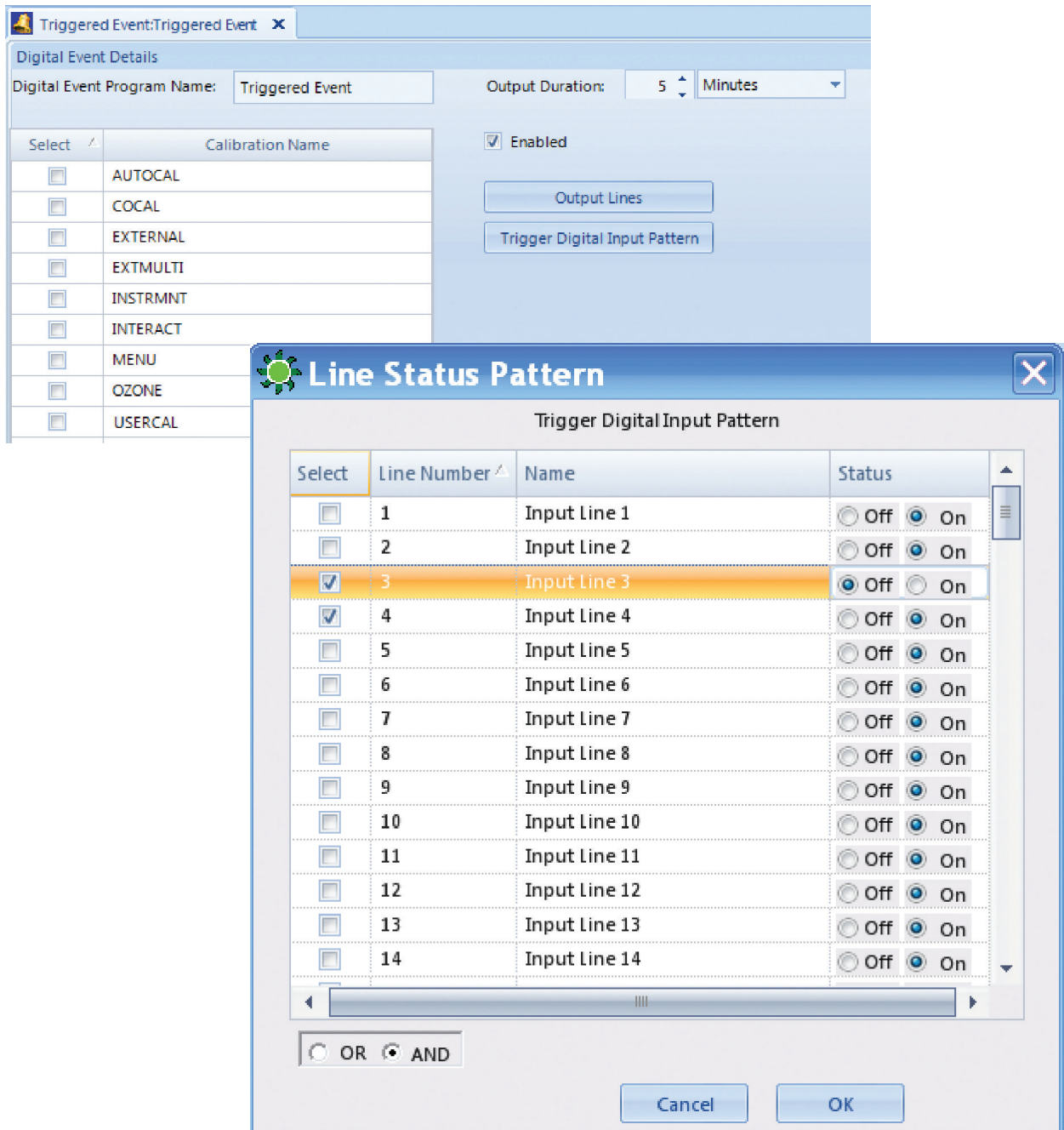


Line Status Pattern for Output Lines

Configuring Digital Triggered Events

1. Highlight the **Data Logger** in **Configuration Editors > Logger Channels** tree menu.
2. Click the green **Add** button in the ribbon and select **Add Digital Events > Triggered Event**.
3. Enter a Triggered **Digital Event Program Name**, an **Output Duration** and check **Enabled**.
After the output duration time period, the program will check the digital input pattern to see if it still matches. If not, the output control lines will be switched off. If the pattern still matches, the output relays will remain on, and the duration time will begin again.
4. If the Digitally Triggered Event is for a calibration, select a **Calibration Name** from the drop-down list.
5. Click the **Output Lines** button to bring up the output **Line Status Pattern** screen and select which **Output Line or Lines** will be switched on when the triggered digital input pattern occurs. Click **OK**.

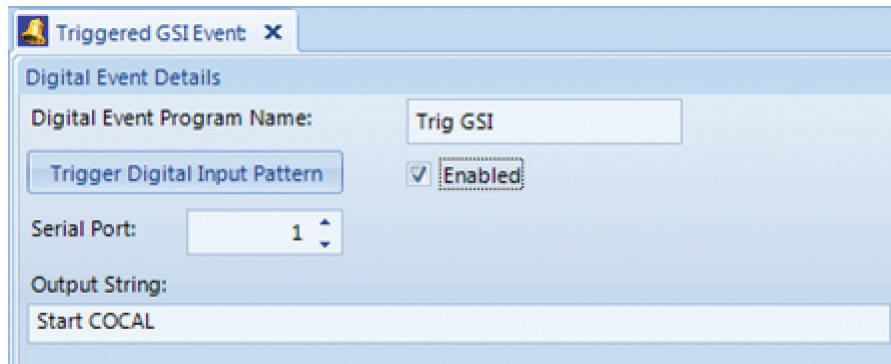
- Click the **Trigger Digital Event Pattern** button to bring up the **Line Status Pattern** screen for Trigger Digital Input Pattern and select which **Input Line** or **Lines** turned **On** or **Off** will trigger the event and switch on the specified **Output Line(s)**.
- In the lower left corner of the screen, select **And** or **Or**. If you select **And** (the default), the digital event program will be triggered **only if ALL** the specified conditions occur. If you select **Or**, the digital event program will be triggered if **ANY** of the specified conditions occur. Click **OK**.



Trigger Digital Input Line Status Pattern with OR/AND selection

Configuring DI-Triggered GSI Events

These events are used to send GSI strings based on the transition of a digital input (or of a pseudo DI-DO pair in the logger). Commonly, these are used to control RS-232 based calibrators or other devices. For this device, a digital input pattern is defined. When the logger sees the digital input transition to match this pattern, the GSI string is sent out the designated serial port (just once). The string is not resent until the logger goes to a non-matching input state, and then back to the matching state.



Triggered GSI Event/Digital Event details

Setting Up Email Services and Alarms

AirVision can email specific flag information (alarms), ADVP rule notices, or scheduled reports to selected recipients. To set up the email service, follow these steps:

1. Enable Email Service:

Open **Configuration Editors > Server Configuration** and double-click the **Executive** in the tree menu. Click the **Service Components** tab and be sure **Email Service Enabled** and **Auto Start** are selected. If you make changes, click **Save**.

2. Configure SMTP settings:

In **Configuration Editors > Server Configuration**, double-click the **Email Service** icon under **Service Configuration** in the tree menu and enter the following information):

- ◆ **SMTP Server**, for example, smtpout.secureserver.net
- ◆ **Port** number
- ◆ **From Address** for the sender of email, e.g., ErrorReporting@agilaire.com
- ◆ If **Authentication** is **Required**, check the box and enter a **Username** and **Password**.
- ◆ If your mail server requires **SSL/TLS**, check the box next to **Enable SSL/TLS**.
- ◆ Check **Send email per recipient** if each recipient will receive email alarms, or leave unchecked for one email with multiple recipients shown.
- ◆ **Failed Email Retry Interval** (in seconds, minutes, or hours)
- ◆ Number of **Retry Attempts**
- ◆ **Polling Frequency** in seconds

The screenshot shows the 'Email Service' configuration window. The 'Email Setup' section includes the following fields and options:

- SMTP Server: smtpout.net
- Port: 80
- From Address: AirVision@agilairecorp.com
- Authentication Required
- Enable SSL/TLS
- Send Email Per Recipient
- Failed Email Retry Interval: [empty]
- Retry Attempts: [empty]
- Polling Frequency (sec): [empty]

The 'Authentication Criteria' section includes:

- Username: [empty]
- Domain (if needed): [empty]
- Set Password button

A 'Test' button is located at the bottom left of the window.

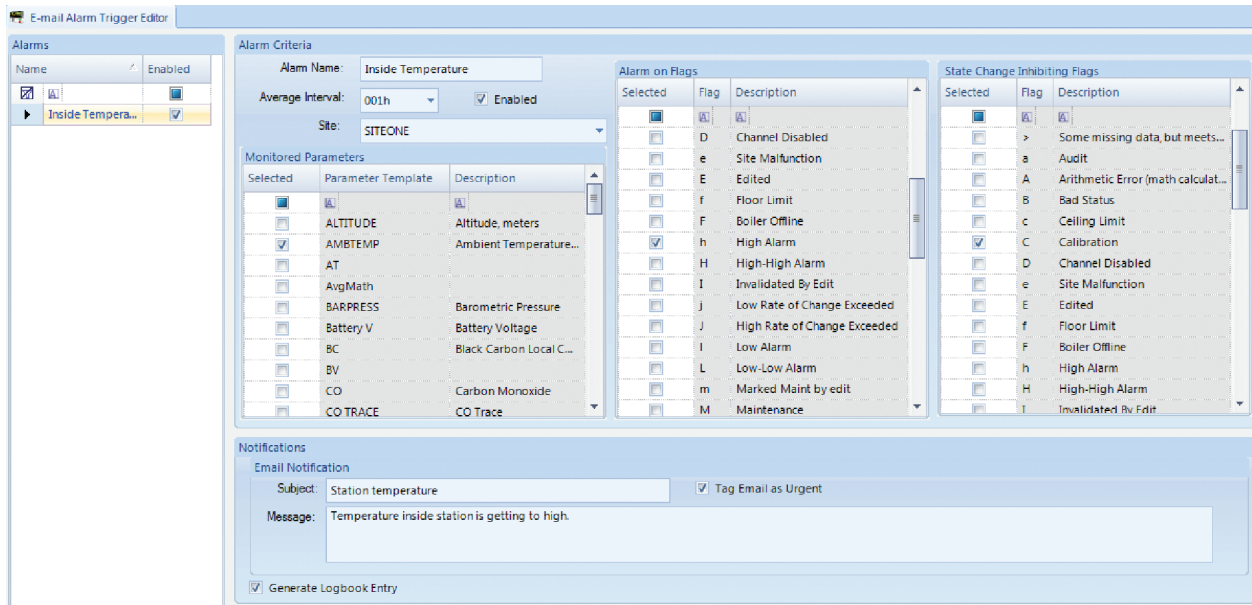
Setting up Email Service in Configuration Editors > Server Configuration > Email Service

3. Define Email Alarms:

In **Configuration Editors > Email Alarm Trigger Editor**, enter an **Alarm Name**, **Average Interval**, and a **Site**.

Select which **Parameters** to **Alarm On** (send an email alarm), which **Flags** to use as a **Trigger** for those parameters, and which **Flags to Inhibit**. For example, you could configure an email alarm to be sent for the **Parameter** ozone when an Invalid flag is set except when a Calibration is set at the same time.

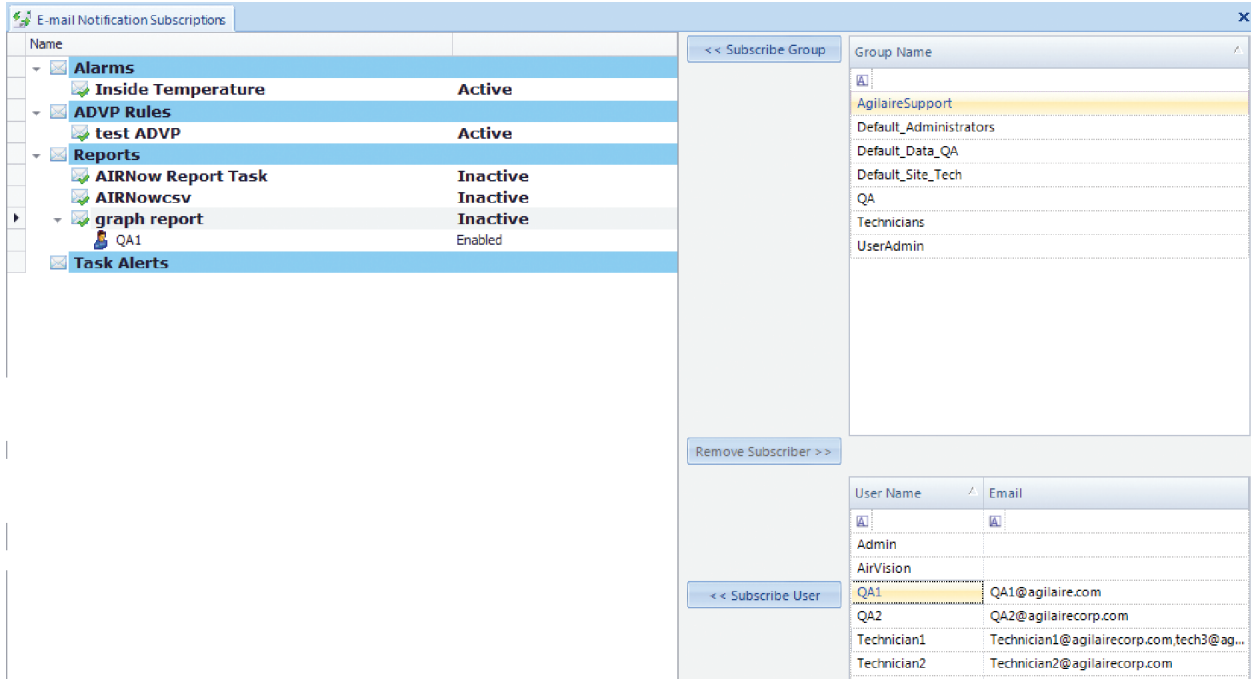
For the **Email Notification**, enter a **Subject** with or without an **Urgent Tag**, and a text **Message**.



Defining Email Alarms in Configuration Editors > Email Alarm Trigger Editor

4. Add Recipients to Notification Subscriptions: (**Configuration Editors > Notification Subscriptions**). Either entire User Groups, Individual Users, or a combination can be defined for each alarm.

Click the **Save** icon.



Adding recipients for email alarm notification from Configuration Editors > Notification Subscriptions

5. To Schedule Alarm or ADVP Checks, see “Scheduling Tasks.”

Scheduling Tasks

All automatic actions in AirVision are managed by the **Task Scheduler (Configuration Editors > Task Scheduler)**, which runs as part of the background AirVision service. The following tasks can be configured in the Task Scheduler, depending on your licensed options:

- ◆ ADVP Processing Task
- ◆ AirNow FTP Transfer Task
- ◆ AQI Processing Task
- ◆ Alarm Processing Task
- ◆ Average Data Purge Task
- ◆ Average Rollup Task
- ◆ Calculate Math Parameters
- ◆ Database Sync Task
- ◆ Fill Average Data Gaps Task
- ◆ Instrument Poll Task
- ◆ Journal Message Purge Task
- ◆ Logger Poll Task
- ◆ Scheduled Command Line Task
- ◆ Scheduled Report Task
- ◆ SQL Execution Task
- ◆ New Task Group

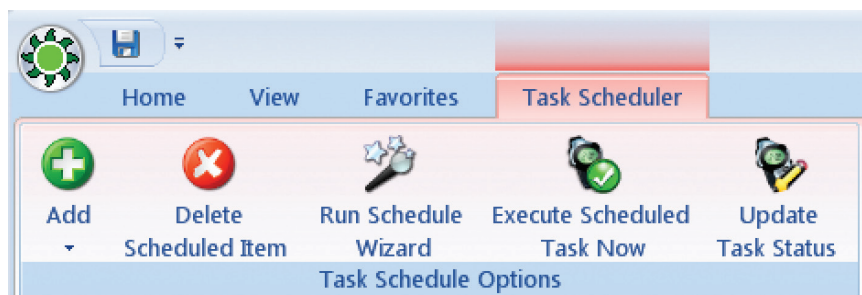
Some automatic actions in AirVision are managed by the **Task Manager**, which runs as part of the background AirVision service. The Task Manager has three user interfaces:

- ◆ **Task Scheduler (Configuration Editors > Task Scheduler)** allows you to add, review, and edit individual and grouped task events.
- ◆ **Task Wizard (Configuration Editors > Task Scheduler > Run Schedule Wizard** button is on the Ribbon at top) allows you to create grouped polling events as well as events triggered by polling.
- ◆ **Task Display (Status Displays > Task Status)** is constantly updating the display of all tasks within the system, including the last time run, next execution time, and errors experienced during the last run.

Task Scheduler

The Task Scheduler has five ribbon controls:

- ◆ Click the **Add** button to add a scheduled task from the list above.
- ◆ Click the **Delete Scheduled Item** button to delete a selected scheduled task.
- ◆ Click **Run Schedule Wizard** button to bring up the **Task Wizard**, which guides you through creating grouped logger and instrument polling tasks, rather than setting each one of individually.

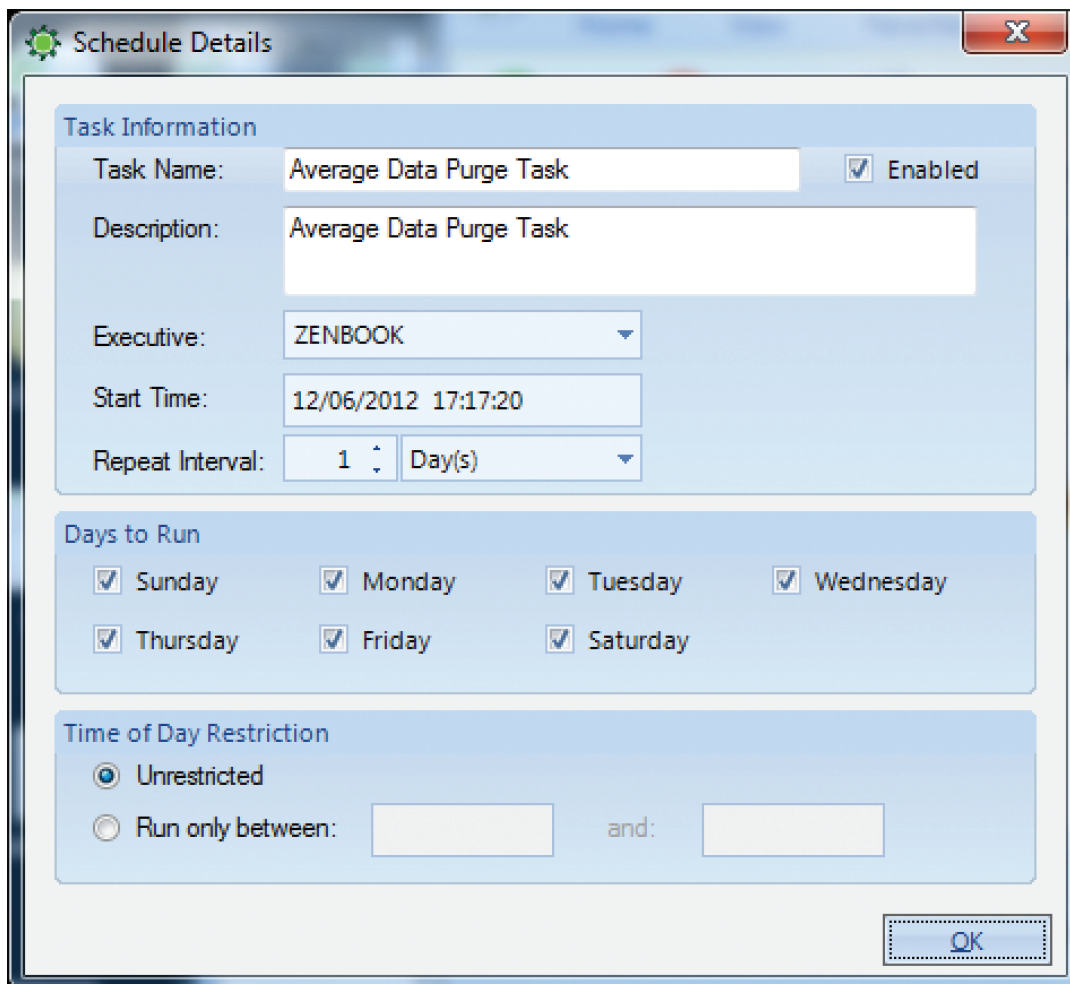


Task Schedule Options (Configuration Editors > Task Scheduler)

- ◆ Click **Execute Scheduled Task Now** allows you to run any task on demand. This can also be done in the Task Status Display.
- ◆ Click **Update Task Status** to bring up a utility screen that allows you to update the last polled data time for polling tasks, which determines what the start time of the next poll will be. This utility has no effect on non-polling based tasks.

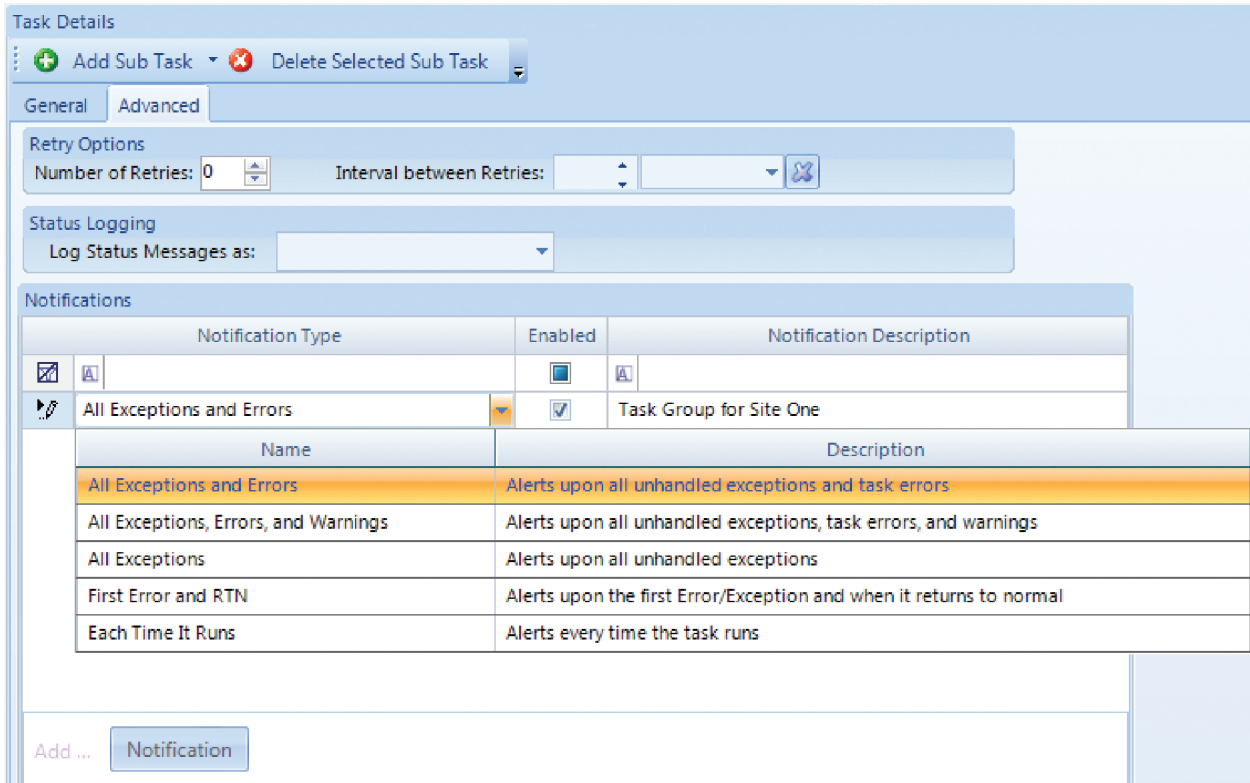
The number of sections in the **Task Scheduler** varies according to the displayed task. The following sections are displayed when a **Logger Poll Task** is selected:

- ◆ **Task Schedule** displays all scheduled tasks and cannot be edited.
- ◆ **Task Schedule Details** section is where **Executive**, **Start Time**, and a **Repeat Interval** are selected.
 - ◆ An **Advance button** is provided next to the repeat interval to allow the user to specify if the task is only to run on certain days of the week, or only in a ‘window’ of certain hours of the day. This is especially useful for polling tasks.



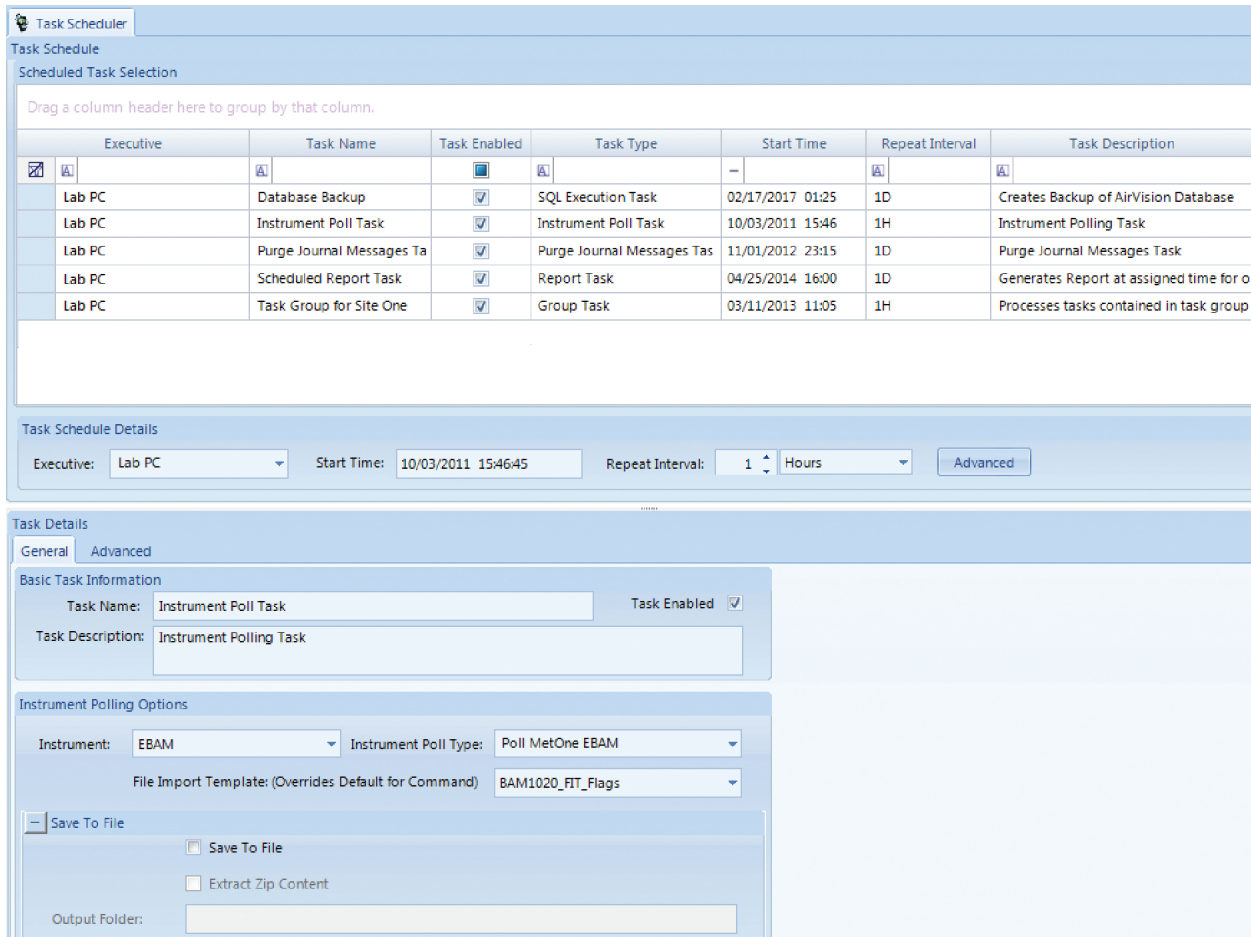
Task Scheduler showing the Advanced screen for a task
(Configuration Editors > Task Scheduler)

- ◆ The **General Tab** in the **Task Details** section is where you enter a **Task Name** and a **Task Description**. **Task Enabled** must be checked in this section before you can select **Enabled** in the **Scheduled Task Selection** section.



Task Details section of Task Scheduler showing Notification selections (Configuration Editors > Task Scheduler)

- ◆ The **Logger Poll Options** section defines the **Logger**, the **Logger Command** (e.g., Average Data), and the **Average Interval**.
- ◆ The **Report Notifications Tab** in a scheduled group tasks gives an option to combine report notifications that will consolidate scheduled reports sent as attachments to an a single email. The scheduled report sub tasks have to have a file output configured.

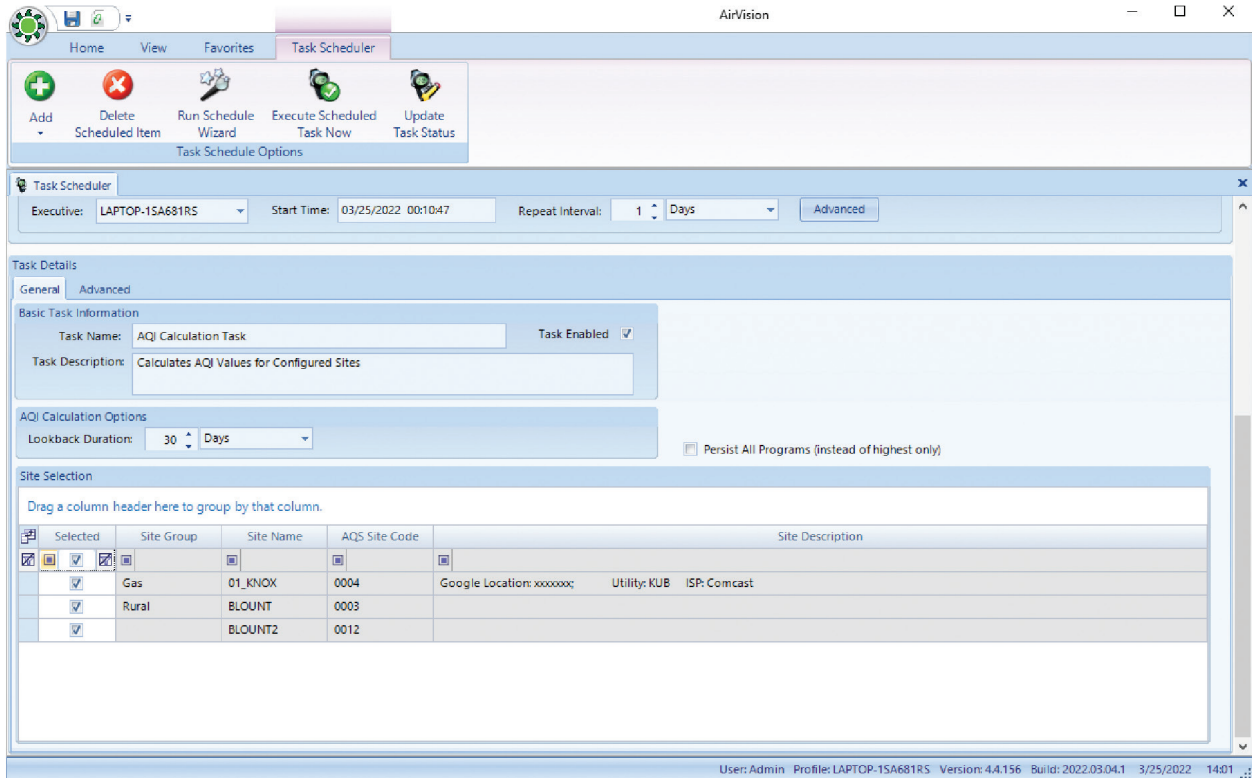


Task Scheduler showing a Logger Poll Task (Configuration Editors > Task Scheduler)

To configure an individual task in the **Task Scheduler (Configuration Editors > Task Scheduler)**, click the **Add** button in the ribbon at the top of the screen and select one of the following categories:

- ◆ **ADVP Processing Task** handles tasks according to ADVP rules. ADVP reviews data against configured ADVP rules for matches, and runs configured Actions. It is often run in a Group Task immediately after polling.
- ◆ **AirNow FTP Task** handles automatic transmission of AirNow data to EPA or other FTP servers. Parameters in the report are selected using the AirNow check box in the Parameter settings.
- ▶ **Note:** Submitting AirNow reports consists of three steps:
 Check **Enable AirNow Reporting** in the **Site/Parameter setup**,
 Enter **AirNow Transfer Details** in **AirNow/FTP Setup (Configuration Editors)**,
 Schedule **AirNow FTP Transfer task** in **Task Scheduler (Configuration Editors)**.

- ◆ **AQI Processing Task** can precalculate and store AQI levels and information in the AirVision database. This can speed the processing time of AQI reports run over long time ranges, and can provide data tables for external SQL query of AQI levels and responsible pollutants (e.g., for building your own web site). The task details allow for options such as a number of 'lookback' days (to accomodate data QA edits), and whether to store the result of all AQI pollutants/programs, or just the highest pollutant (default).



- ◆ **Alarm Processing Task** reviews alarm Triggers for matches, creates email alerts, and tells AirVision when to process a particular alarm rule. If you use task groups and designate tasks to run in sequence, you can designate alarms to be processed immediately after a data poll.

The screenshot shows the 'Task Details' window for a 'Logger Poll Task'. The 'Basic Task Information' section includes a 'Task Name' field with the value 'Logger Poll Task' and a 'Task Enabled' checkbox that is checked. The 'Task Description' field contains 'Data Logger Polling Task'. Below this is a '+ Advanced Options' button. The 'Logger Poll Options' section features three dropdown menus: 'Logger' set to '09Logger', 'Logger Command' set to '56 - Average Data', and 'Average Interval' set to '001h - Hourly average of 60 minutes'.

Logger Poll Task in Configuration Editors > Task Scheduler

- ◆ **Average Data Purge Task** purges or archives old data from the database. Eventually, the AirVision database will become so big that it takes a long time to back it up, so it is helpful to remove and/or save old data, in particular minute data. You can choose any average interval to be scheduled for Purge or Archive. Purged data will be permanently deleted from the database. Archived data is copied to an external file before purging. Archived data is stored with all flags and annotations and can be re-imported later. AirVision uses specialized data keys so sites and channels can be renamed or renumbered and archived data can still be correctly imported. Select the age of the data to purge: **Purge Data Older Than** a specified number of seconds, minutes, hours, days, weeks, or years. We recommend purging 1-minute data older than 1 year to keep the database within allowable size.
- **Note:** Average Data can be purged manually via the **Utilities menu>Purge Average Data**.
A checkbox option allows you to **retain data during calibrations**. If selected, any data flagged with the **C** flag will not be purged. This allows you to retain minute data from calibrations (e.g., for use in the Calibration Trend Graph's Response Plot) while still removing old minute data.
- ⇒ **Important!** When deleting data 24 hours or more has to be selected for the deletion to be successful.

General **Advanced**

Basic Task Information

Task Name: Task Enabled

Task Description:

Purge Options

Archive Type: Purge Data Older than:

Archive Data Before Purging

Average Data Purge Options

Interval to Purge: Retain Readings During Calibrations

Parameter Selection

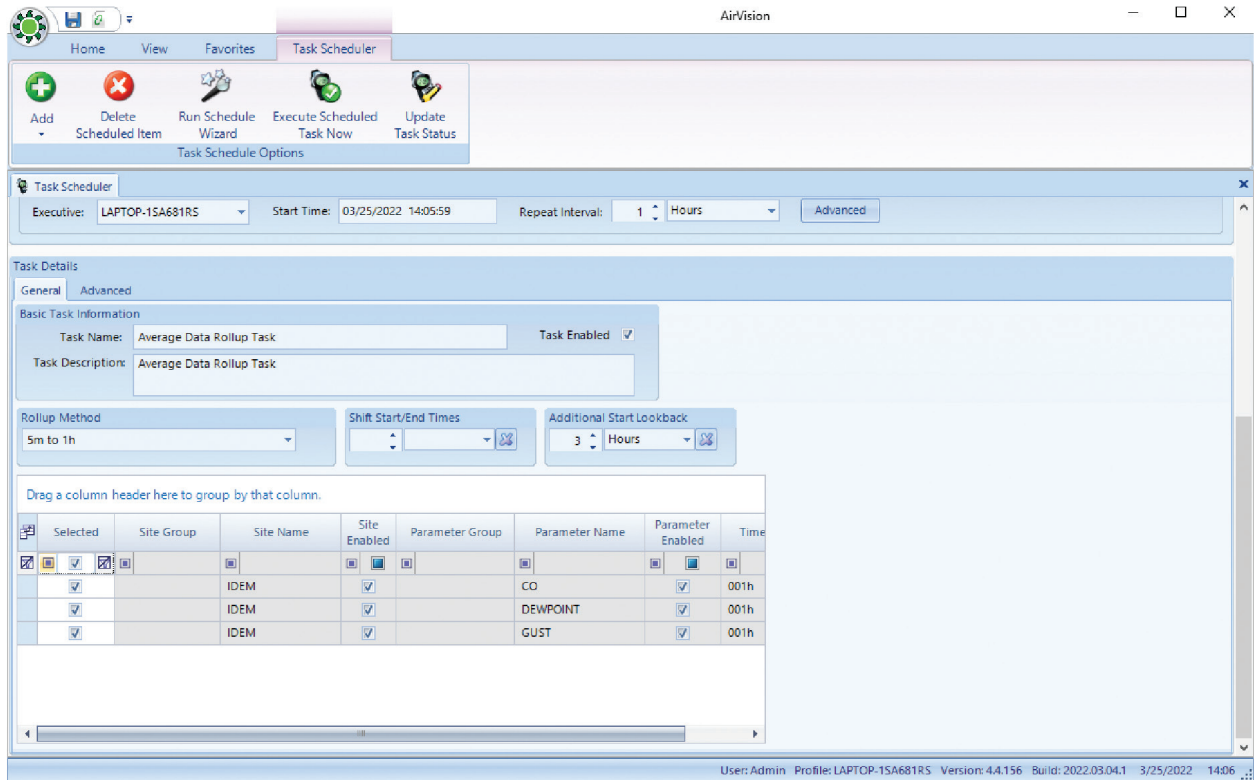
All Parameters Selected Parameters

Drag a column header here to group by that column.

Selected	Site Name	Parameter Name	Parameter Template Name
<input checked="" type="checkbox"/>			
<input type="checkbox"/>	01_KNOX	01_OZONE	OZONE_PP8
<input type="checkbox"/>	01_KNOX	02_PM25_MC	PM25LC
<input type="checkbox"/>	01_KNOX	03_PM25BRAW	
<input type="checkbox"/>	01_KNOX	04_PM25RRAW	

Purge or archive data in Configuration Editors > Task Scheduler

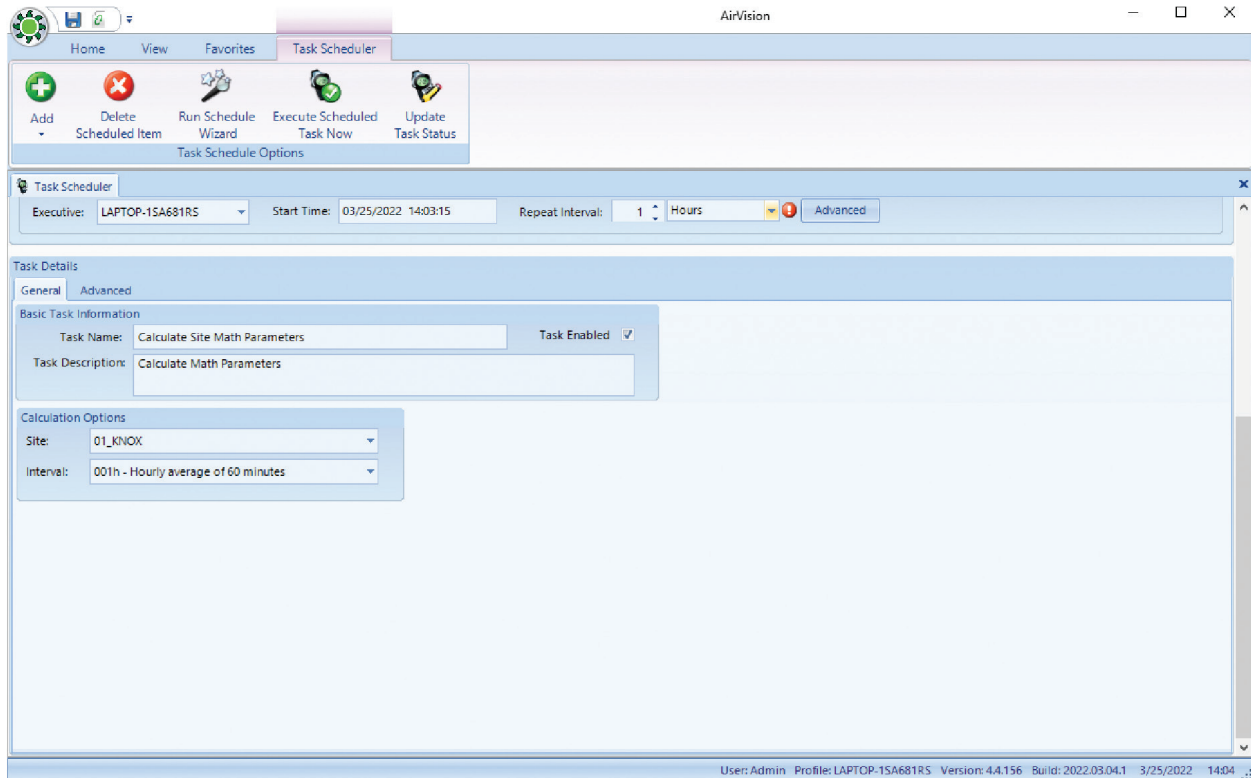
- ◆ **Average Data Rollup Task** allows shorter term averages to be rolled up into larger block or rolling averages. For more information, see “Data Rollup Processor” in Chapter 7 “Optional Features.” Note that this task has the ability to shift the starting/ending time and/or have additional look back time. This can be used to manage data coming in from different time zones and ensure rollup where data collection may be unreliable (e.g., always rolling the last 4 hours).



Automatic Rollup Task in Configuration Editors>Task Scheduler>Add Average Rollup Task

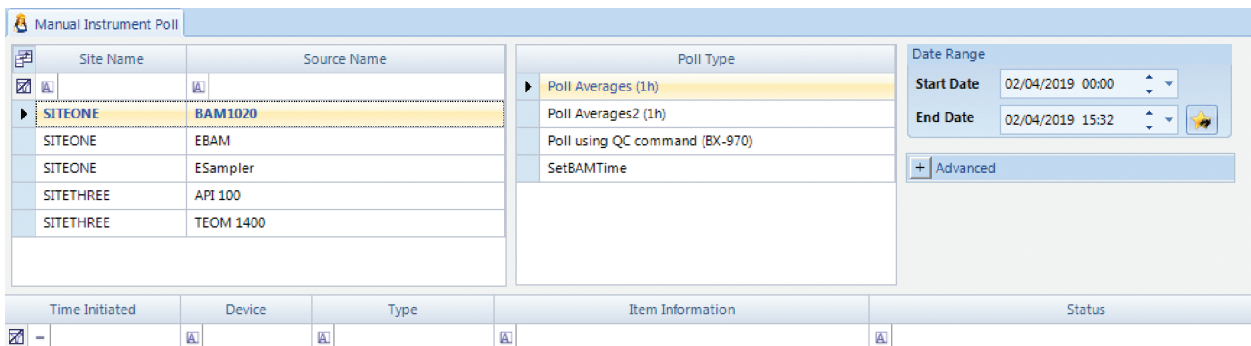
◆ **Math Task Scheduler**

The task scheduler can execute equations automatically using the **Calculate Math Parameters Type** task. This task operates on a particular site and interval combination, and seeks out all equations for which there are fully matching parameter templates. If an equation in the table can't be executed on that site for lack of parameter templates or available data, the equation is skipped.



Math Task Scheduler Details

- ◆ **Instrument Poll Task** directly polls PM Samplers and Instruments such as BAMs without using data loggers.
- **Note:** Instruments can be polled manually by selecting **Manual Instrument Poll** from the **Utilities Menu**.

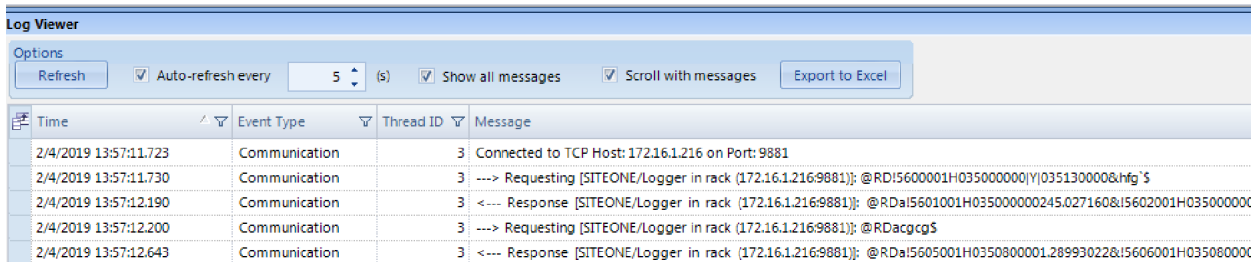
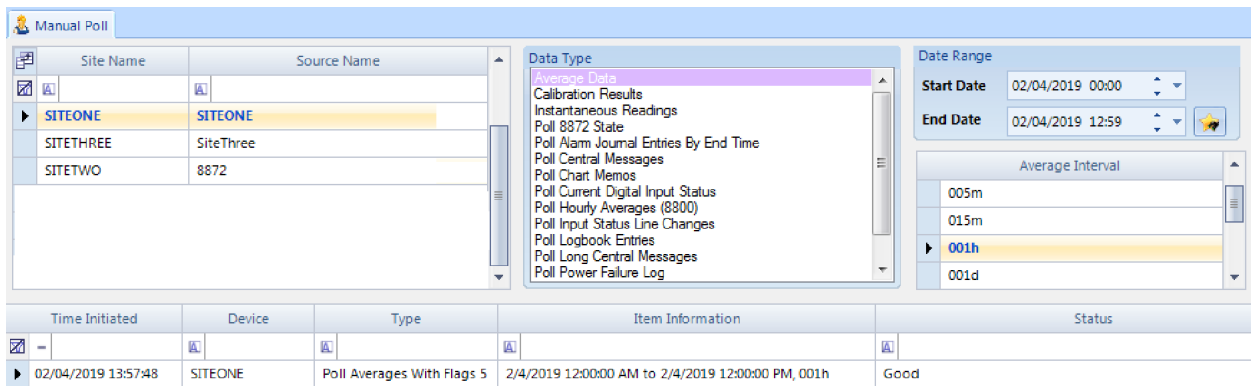


Manual Instrument Poll from Utilities Menu

- ◆ **Journal Message Purge Task** removes Event Log journal messages (internal error logs) that are older than a specified age in seconds, minutes, hours, days, weeks, or years. The purge occurs at a specified **Repeat Interval**. An option is available to **Archive Data Before Purging**.
- ▶ **Note:** Journal messages can be purged manually via the **Utilities menu>Purge Journal Messages**.
- ▶ **Note:** The Advanced tab can be used to set particular variables of some poll commands, like a number of records for instruments that do not support polling start/end times.
- ◆ **Logger Poll Task** polls a data logger at a specified Repeat Interval in seconds, minutes, hours, or days. The Task must be named and a data logger must be selected. Select a Logger Command from the following drop-down list:

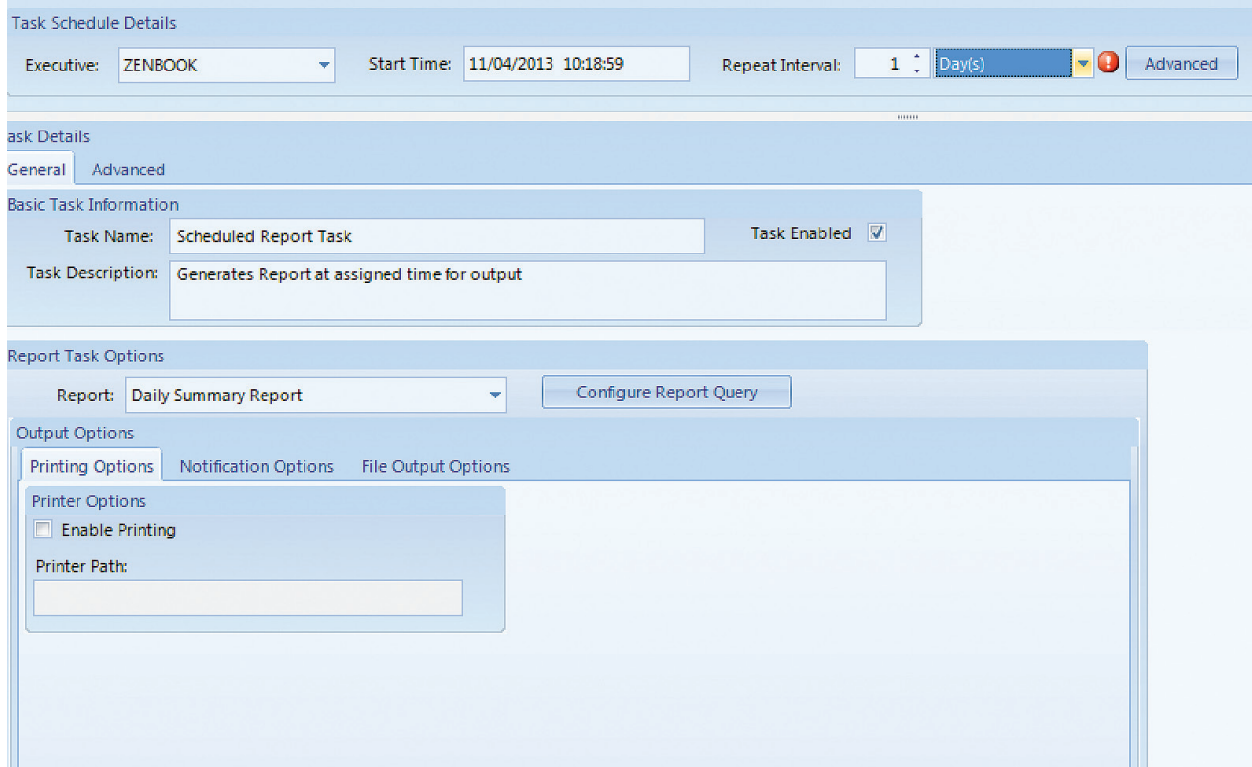
56	Average Data	8872 ONLY
46	Calibration Results	XS Poll 8872 Status
IJ	Instantaneous Readings	NP Poll Journal Entries
NP	Poll Alarm Journal Entries	
JJ	Poll Central Messages	
KK	Poll Chart Memos	
23	Poll Current Digital Input	
11	Poll Hourly Averages (8800)	
DD	Poll Input Status Lind	
JL	Poll Log Book Entries	
JK	Poll Long Central Messages (8816, 8832, 8864)	
EF	Power Failure Log	
BB	Synchronize Logger Time	
LL	Poll Current Time and Set Server Time (special cases)	

- **Note:** The logger also can be polled manually via **Utilities > Manual Poll**. Results are displayed in the **Log Viewer** below the query screen.



Manual Poll in Utilities Menu

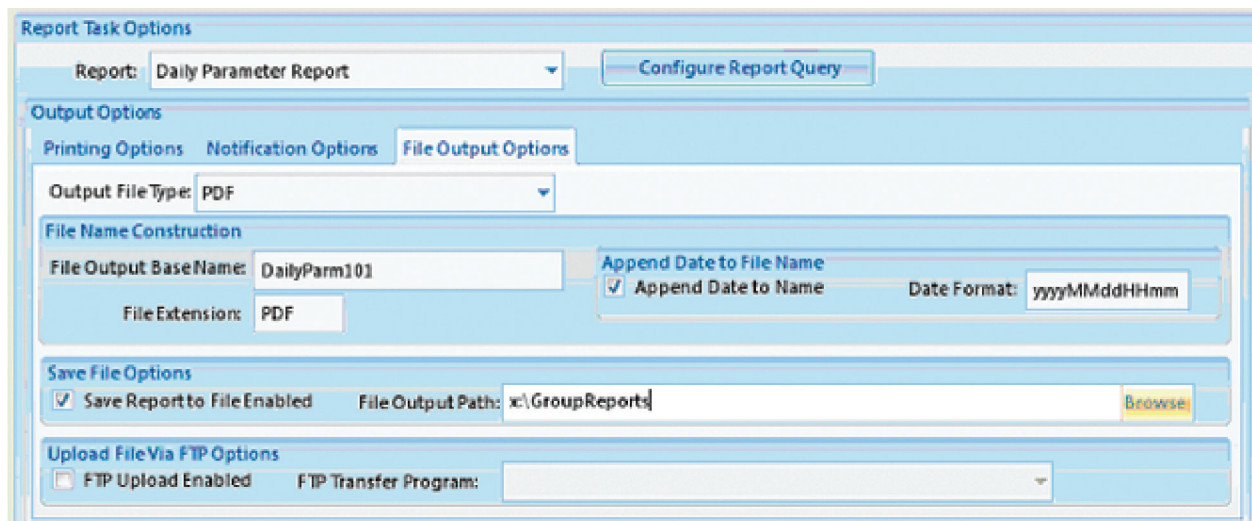
- ◆ **Scheduled Command Line Task** can be used to automate any Windows command line function, such as NTBackup.
- ◆ **Scheduled Report Task** handles automatically printed or emailed reports. Any system can be scheduled for distribution to a designated printer and/or email recipients.
 1. Select a **Report** from the list of available reports
 2. Configure a Report Query (select average interval, sites, parameters, and time range). (This feature functions like the Favorites Editor.)
 3. If the report will be printed, select the Printing Options tab, check the **Enable Printing box**, and designate the **Printer Path** to the printer used by the AirVision Server.
 4. If the report will be emailed, select the Notification Options tab, check the **Enable Email Notification box** and give the report a name that will appear in the Notification Subscriptions Editor. (Users and/or User Groups must be designated in **Configuration > Notification Subscriptions Editor**.) Emailed reports can be selected to come as a file attachment (see also Step 5 for setting file format), or embedded into the email.
- **Note:** If emailed reports are attachments, the Report Tasks can be combined in a Group Task and all the reports will come in a single email.



Scheduling printing and email notification of scheduled report in Configuration Editors > Task Scheduler

5. If the report will be saved to a location or FTP'd, select the **File Output Options** tab, then configure the desired options. If saving to a network location, the account running the AirVision Server service will need to have access to that directory. To use the FTP option, you will need an FTP program configured under **Configuration Editors > Report Configurations > AirNow/FTP Setup**.

You must select the output file type (CSV, HTML, PDF, etc), and the base file name:



File Output Options tab in Scheduled Reports

You can optionally have the scheduled task append the current date/time to the file name (e.g., DailyParm200906271900). Note that Windows does not allow “/” or “.” characters in file names. This option ensures that new files do not overwrite existing files in the directory. If this option is left off, the task will overwrite the file each time the tasks runs.

You can then select either of two options:

Write to File Enabled-- select/browse to a directory folder for the destination file

FTP Upload Enabled--select from a previously configured FTP program for automatic FTP of the file to a particular server.

◆ SQL Execution Task

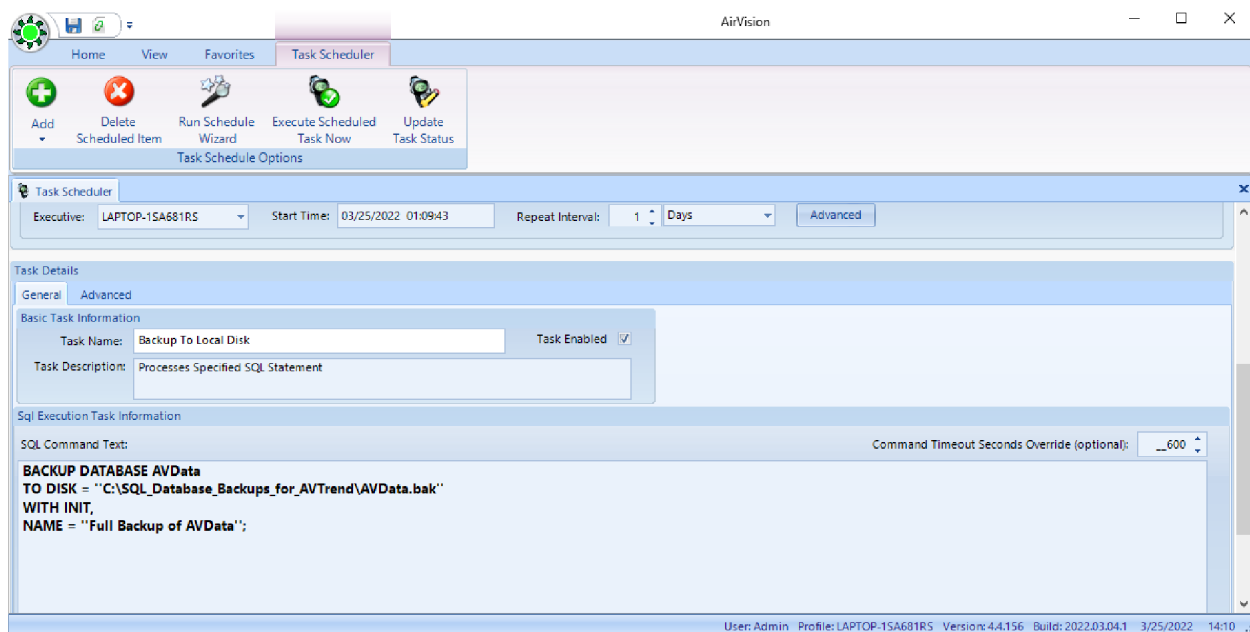
To add a **SQL Execution Task**, click the green **Add** button and select **SQL Execution Task**.

Select the Executive, Start Time, and Repeat Interval.

Name the SQL task or use the default name.

Enter the **SQL Command Text**.

Click the **Save** button.



► **Note:** SQL commands can be executed manually via **Utilities>SQL Execution Tool**.

◆ **New Task Group**

Task Groups allow multiple tasks to be grouped together in one polling process instead of multiple individual tasks. Tasks can be defined to run groups in parallel, sequentially, or as sub-tasks of other task groups to allow mixing of parallel and sequential operations. Example: You want to poll data immediately after run time ADVP rules, then run an AirNow or FTP to web site of the filtered data. To add a new sub task to the Task Group click **Add Sub Task** button and select the task from the drop-down list. The Sub Task drop-down list has the same options as the Add task button at the top of the Task Scheduler. When you select a Sub Task, a screen will pop up asking for the following information:

Task Name displays the name of the sub task that was selected. The Task Name can be modified.

Task Description is automatically filled in.

Task Enabled must be selected if the sub task is to run under the Group Task.

Other fields vary according to which sub task is selected.

When you click **OK** in the pop-up screen the new sub task will be added in the **Sub Tasks** section.

Select **Execute Tasks In Parallel** in the **Group Options** section if all sub tasks are to run at the same time.

If the sub tasks are to be run sequentially, enter a number in the **Execution Order** column in the **Sub Tasks** section.

Select the **Fail Group on Error** column if you want the whole Task Group to stop running if an error occurs.

Task Type indicates the sub tasks that are part of one group task.

Edit Task allows you to make changes in the same pop-up window that came up when the **Add Sub Task** button was clicked.

To remove a task from the Task Group select the task in the **Sub Task** section and click the **Delete Selected Sub Task** button.

Advanced Task Time Options: Certain task types have additional options for lookback and time offsets.

The screenshot shows the 'Advanced' tab of a task configuration window. The 'Basic Task Information' section includes a 'Task Name' field with the value 'Average Data Rollup Task' and a 'Task Enabled' checkbox that is checked. Below this is a 'Task Description' field with the same text. The 'Rollup Method' section features a dropdown menu with a red exclamation mark icon. The 'Shift Start/End Times' section has a dropdown menu and a plus-minus icon. The 'Additional Start Lookback' section also has a dropdown menu and a plus-minus icon.

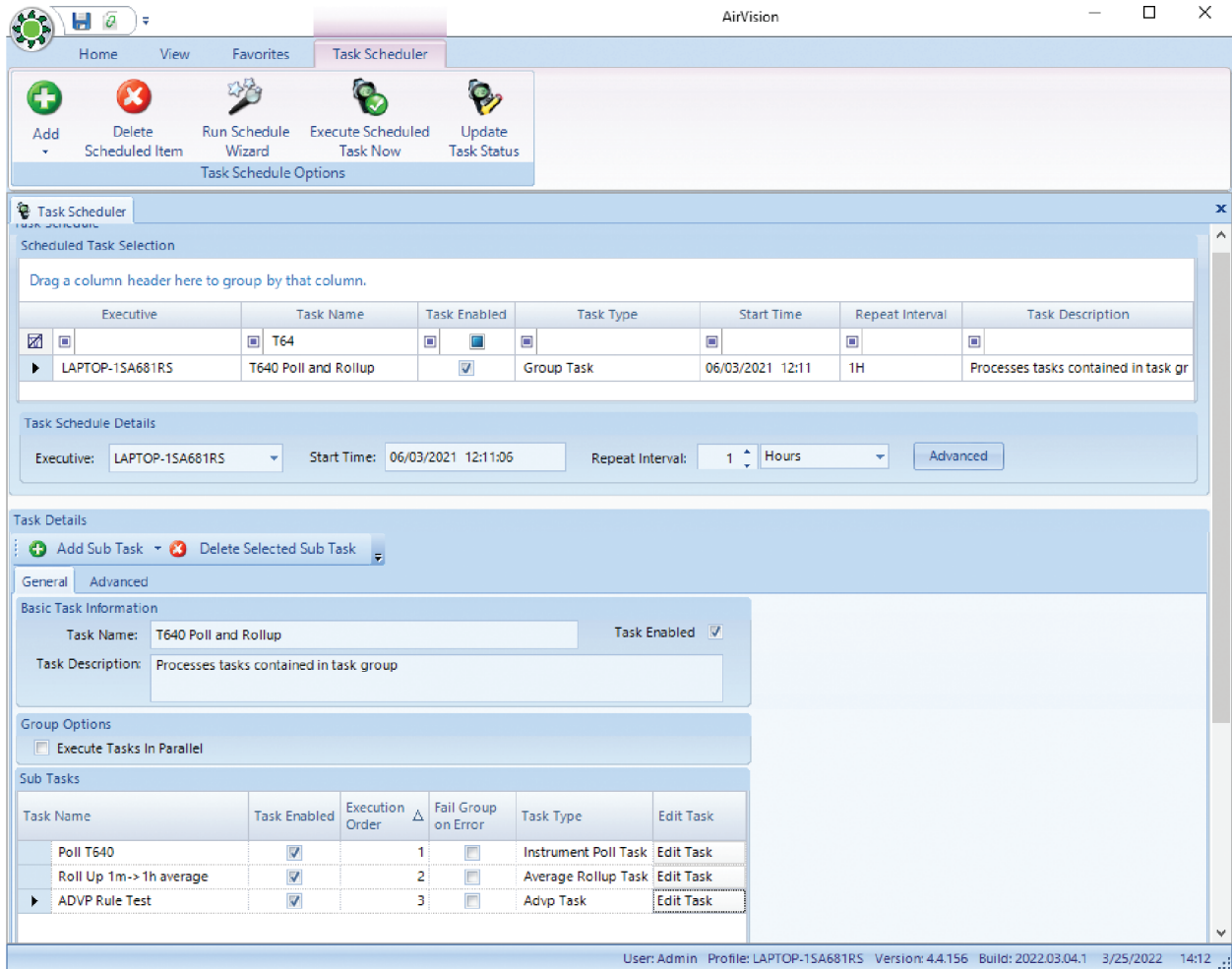
These include:

- ◆ ADVP Task
- ◆ Alarm Processing task
- ◆ Average Data Rollup
- ◆ Calculate Math Parameters Task
- ◆ Instrument Poll Task
- ◆ Logger Poll Task

These options allow for additional lookback time for the task (e.g., instead of going back to the last execution time), or to shift the time for arguments used in running the task (e.g., run the rollups from 3 hours ago to 2 hours ago, instead of 1 hour ago to current). Example cases of use include:

- ◆ Polling a sensor gateway where the sensor uses GMT time arguments for its polling request.
- ◆ Polling an instrument or sensor where data is delayed (e.g., at 11:00, data is only available through 09:15).
- ◆ Running rollups, calculations, alarms, or ADVP for data coming in with cases similar to the above.
- ◆ Ensuring correct rollup / processing for sites with poor communications / dropouts.

Note that some lookbacks (alarm, ADVP) are limited to 12 hours to ensure system performance.



The **Advanced Options** tab in the **Task Details** section defines the **Number of Retries**, the **Interval between Retries**, and whether to **Log Status Messages** as **Off**, **Information**, **Verbose** (for a problematic task), or **Debug**.

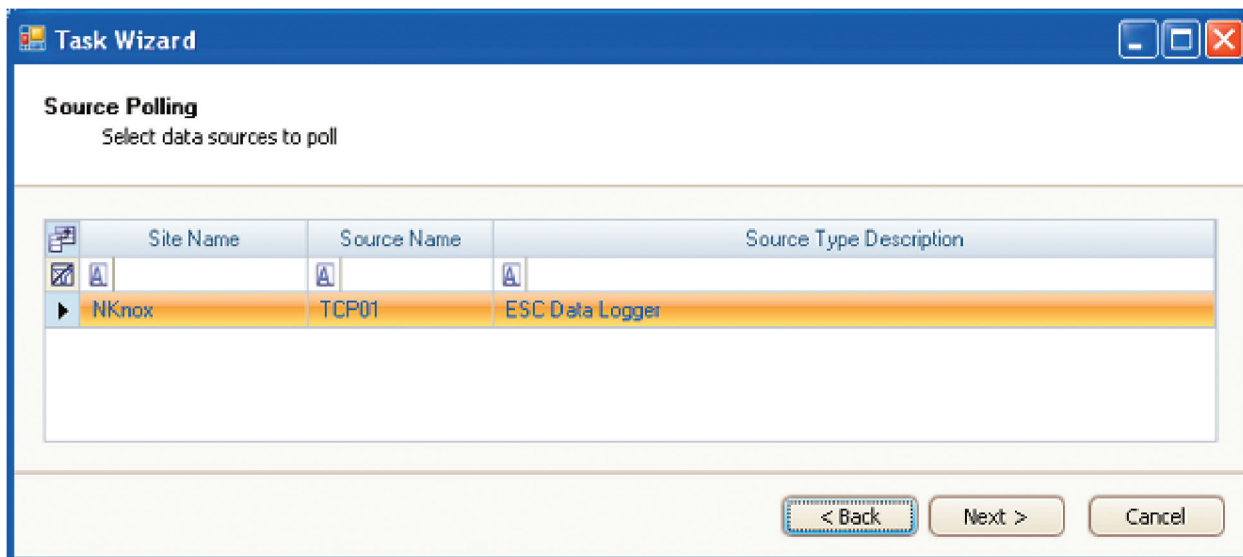
The **Notifications** part of the **Advanced** tab allows configuration of **Notification Type** (All Exceptions and Errors; All Exceptions, Errors, and Warnings; All Exceptions; First Error and RTN (Return to Normal); or Each Time it Runs) followed by a **Description** of each Notification Type.

Schedule Task Wizard

The Task Wizard can be used to easily create a single group task for polling and processing multiple sites/sources. To set up task groups:

Open the **Task Wizard (Configuration Editors > Task Scheduler > Run Schedule Wizard** button on ribbon at top of screen) and click **Next**

Select **Site** and **Source** (including **Source Type Description**) and click **Next**.

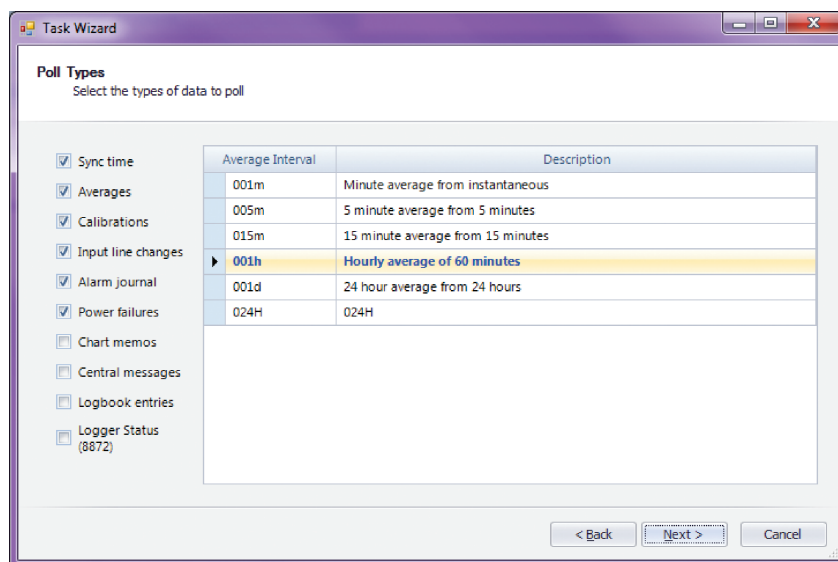


Selecting Site and Source Name in Task Scheduler Wizard (Configuration Editors > Task Scheduler > Run Schedule Wizard)

Select **Poll Types**, or types of data to poll from the following checklist:

- Sync time,
- Averages,
- Calibrations,
- Input line changes,
- Alarm journal,
- Power failures,
- Chart memos,
- Central messages,
- Logbook entries,
- Logger Status (8872).

Click **Next**.



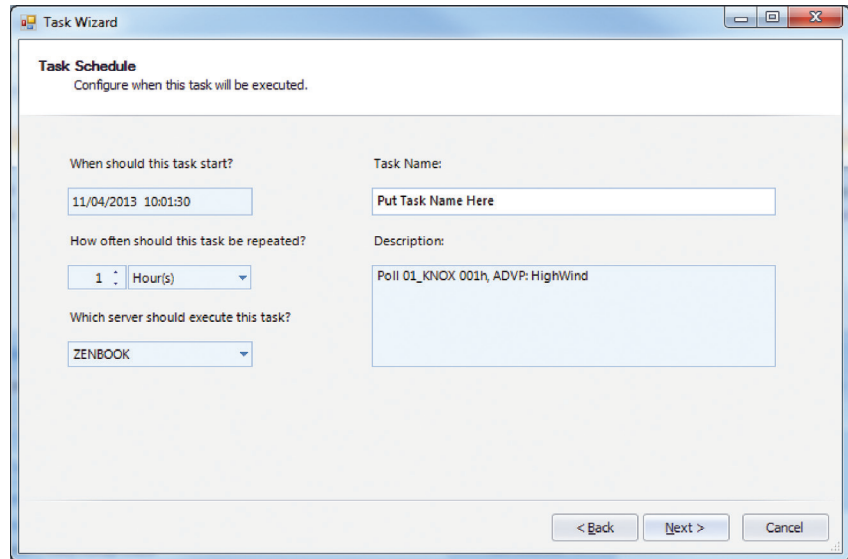
Poll Types in Task Scheduler Wizard (Configuration Editors > Task Scheduler > Run Schedule Wizard)

Select the following configurations from drop-down lists:

- when the task should start,
- how often it should be repeated,
- and which server should execute the task.

The next screen will ask you to **Confirm Task Creation**. Click **Next** to save new task to database.

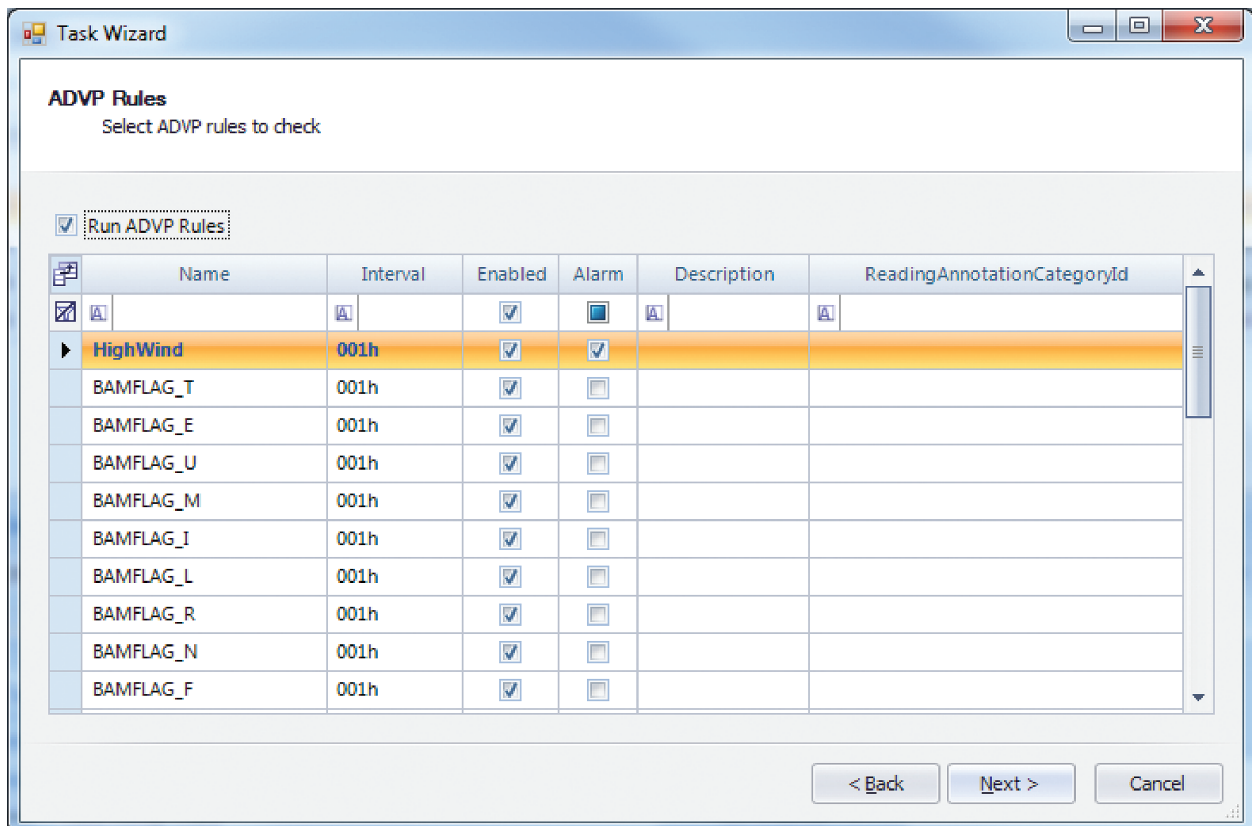
The last screen will say you have successfully completed the wizard. Click **Finish**.



Task Schedule in Task Scheduler Wizard (Configuration Editors > Task Scheduler > Run Schedule Wizard)

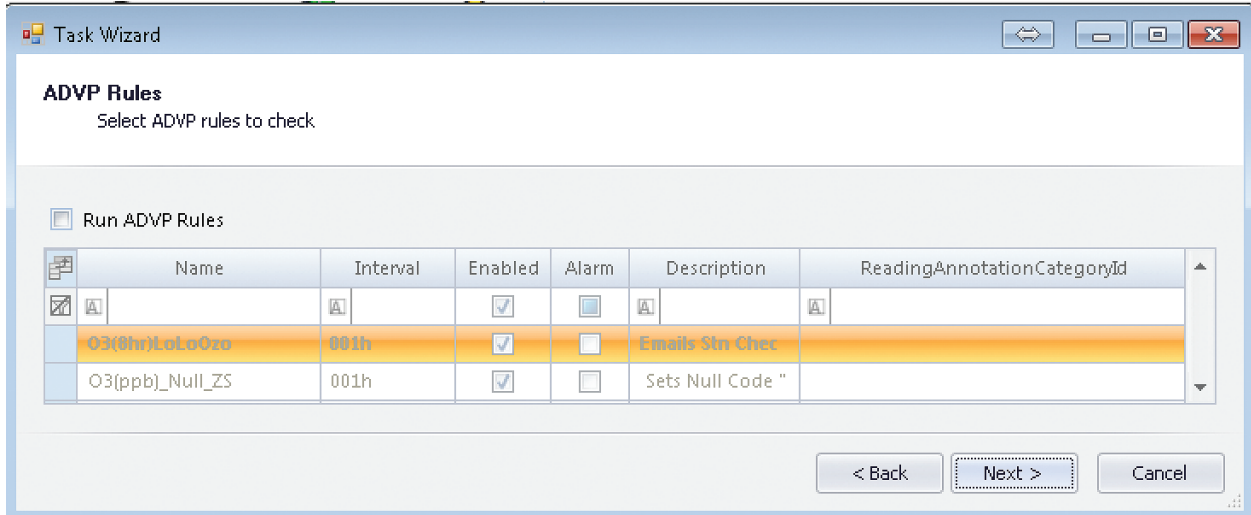
Once this task group is created, you can add other sub-tasks to the group to run after polling (e.g., Average Data Rollup Tasks, Scheduled Reports, etc.).

If you have the AirVision ADVP module, there is also a screen in the Task Wizard where configured ADVP rules can be selected.



The user will be prompted if they wish to run any alarms or ADVP checks right after the poll has been completed.

► **Note:** The form says **ADVP**, but is used for both alarms and ADVP checks.



Direct Instrument Polling

AirVision has the capability to directly download data from BAM-1020s, API T640, TEOM 1400s, and other instruments or small sensors connected via modem, wireless IP or data gateways. Scheduled downloads can be used in conjunction with AirNow transfers or other real-time processes (such as ADVP data filtering, etc).

The process takes place in three steps:

- ◆ Via a scheduled task, AirVision opens up connection to the instrument using a configured route (modem, TCP, etc).
- ◆ AirVision sends the commands to retrieve the data file in native format (some kind of delimited file).
- ◆ AirVision then runs the File Import Tool against an instrument-specific import template to import the data into the AirVision database.

This implies that the user should already have configured all of the parameters referred to in the File Import template and assigned the correct Parameter Templates in the Site/Parameter editor.

As an example, for the MetOne BAM, the default Parameter Templates are:

- ◆ PM25LC
- ◆ PMVOLUME
- ◆ RELHUM
- ◆ AMBTEMP

To configure the direct instrument poll using a licensed driver, the user should first add an Instrument to the Data Source Details editor, by selecting the site and using the “Add Instrument” option:

The screenshot shows the configuration window for an instrument named 'BAM1020'. The window is divided into two main sections: 'Source Information' and 'Instrument Details'.

Source Information:

- Site: SITEONE
- Source Name: BAM1020
- Enabled:
- Description: (empty text box)
- Retry Attempts: 1
- Retry Delay: (empty text box)

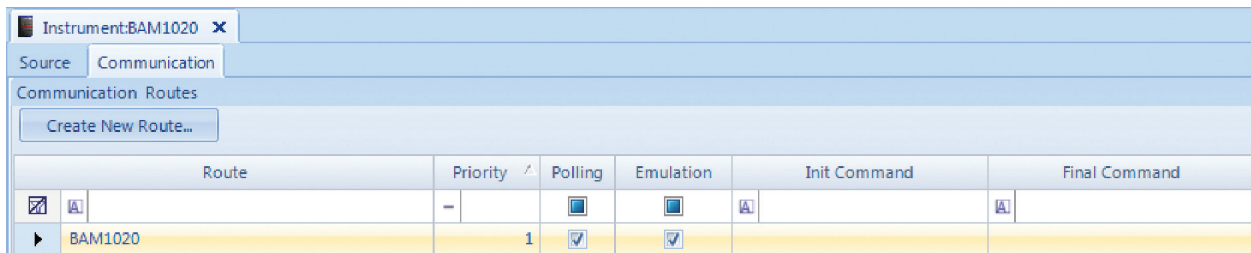
Instrument Details:

- Instrument Type: Met One Bam 1020
- Instrument Identifier: (empty text box)
- Instrument Username: (empty text box)
- Instrument Password: (empty text box)

The Instrument Type should be selected, and the Source Name should be specified. The Instrument Identifier and Instrument Password should only be used for certain instrument types where this information is required (e.g., Instrument ID, usually “04” for TEOMS).

Once this is done and saved, the user should define a TCP Route in the Server Configuration editor. The user is provided a list of instruments configured in the Data Source Details editor or by selecting the Communication tab and adding a Device Route, then selecting the communication route from the drop down list.

Once the appropriate instrument is selected, the user can assign the communication route to the instrument. Note that the “Initial Command” and “Final Command” options can be used to integrate code-operated-switches, if needed.



Once the appropriate instrument is selected, the user can assign the communication route to the instrument. Note that the “Initial Command” and “Final Command” options can be used to integrate code-operated-switches, if needed.

Finally, the user only needs to define the polling task to retrieve the data, using the Task Scheduler editor. **Select Add->Instrument Polling Task.**

Task Details

General Advanced

Basic Task Information

Task Name: Instrument Poll Task Task Enabled

Task Description: Instrument Polling Task

Instrument Polling Options

Instrument: EBAM Instrument Poll Type: Poll MetOne EBAM

File Import Template: (Overrides Default for Command) BAM1020_FIT_Flags

Save To File

Save To File

Extract Zip Content

Output Folder:

Output Filename:

Here the user must define:

- ◆ Executive (usually the current machine)
- ◆ Start Time and Repeat Interval (e.g., hourly for BAM)
- ◆ Task Name
- ◆ Task Description (optional)
- ◆ Number of Retries / Interval Between Retries (optional)
- ◆ Instrument (selects from list of configured instruments)
- ◆ Instrument Poll Type (choose either PollAverages1 or PollAverages2 for BAM, they both work, but are slightly different to allow some adaptation to different communication network delays).
- ◆ File Import Template to be used (e.g, BAM1020 for BAM, TEOM for TEOM, etc)

Of course, associated Parameter entries that match the desired parameters in the File Import template must be configured for the site to define the destination for the data. No “Logger” or Logger Channels need to be configured in the Data Source Details, only the Instrument.

If your instrument varies from the standard template, you can use the “Copy” function in the File Import configuration to create a custom (or even site-specific) version, and associate it in the polling task.

BAM-Specific Application Notes

The Instrument Polling system generally uses a “Duplication” method for error checking responses from the BAM. In short, AirVision will ask for the same data twice, verifying that the two transmissions match exactly. This is done since the BAM response does not have a checksum at the end.

One quirk, though is that the header of the BAM can vary dynamically if its unused analog inputs (e.g., WS, WD) are allowed to float. This causes a problem with the error checking as shown below, as some columns randomly change to “no(V)” each time we request data:

Request-->

←Response:

Station, 1

Time,Conc(mg/m3),Qtot(m3),no(V),WS(MPS),no(V),RH(%),no(V),AT(C),E,U,M,I,L,R,N,F,P,D,
C,T,

02/15/13 00:00, -0.004, 0.701, 0.338, 7.0, 0.138, 14, 0.440, 0.3,0,0,0,0,0,0,0,0,0,0,0,

Request-->

←Response:

Station, 1

Time,Conc(mg/m3),Qtot(m3),WD(DEG),no(V),,no(V),RH(%),no(V),AT(C),E,U,M,I,L,R,N,F,P,D,
C,T,

02/15/13 00:00, -0.004, 0.701, 0.338, 7.0, 0.138, 14, 0.440, 0.3,0,0,0,0,0,0,0,0,0,0,0,

To prevent this from happening, the BAM allows the user to configure the BAM to manually set the channel order (consult the BAM-1020 manual for details).

*In general, this step must ***ALWAYS*** be done on a BAM-1020, unless the met sensor inputs are actively used and connected to instruments. Without this setting, AirVision will report “unable to get consistent results” in a poll.*

Other Instrument-Specific application notes can be found on our website:

www.agilaire.com/application-notes/.

Task Status Display

Task Display (Status Displays > Task Status) is constantly updating the display of all tasks within the system, including the last time run, next execution time, and errors experienced during the last run.

By default, the display will not refresh, but **Refresh Status Automatically** can be selected at the top of the screen.

Name	Type	Status	Last Start Time	Last End Time	Next Run Time	Last Successful ...	Latest Data Time	Task Status Message
Lab PC	Executive							
[ADVP Rule Processing Task] Start: 3/21/13 15:08:05, Repeat:001H	Advp Task	Success	3/21/13 16:08:00	3/21/13 16:08:00		3/21/13 16:08:00		
[AIRNow FTP] Start: 1/24/11 11:06:09, Repeat:001H	AirNow Ftp Task	Success						
[Auto backup] Start: 8/17/12 14:05:05, Repeat:001D	SQL Execution...	Success	9/19/12 14:03:06	9/19/12 14:05:09		9/19/12 14:03:06		
[Average Data Purge 15min] Start: 6/18/12 23:14:50, Repeat:001D	Purge Average...	Success	4/18/13 23:06:14	4/18/13 23:06:14		10/24/12 22:43:15		
[Average Data Purge 5min] Start: 6/18/12 23:12:58, Repeat:001D	Purge Average...	Success	2/3/19 23:12:58	2/3/19 23:12:58	2/4/19 23:12:58	8/13/18 23:12:58		
[Average Data Purge minutes] Start: 6/18/12 23:10:59, Repeat:001D	Purge Average...	Success	2/3/19 23:10:59	2/3/19 23:11:01	2/4/19 23:10:59	2/3/19 23:10:59		
[Average Data Rollup Task] Start: 1/31/18 17:07:04, Repeat:006M	Average Rollup...	Success						
[Database Backup] Start: 2/17/17 01:25:00, Repeat:001D	SQL Execution...	Success						
[Database Index and Statistics Maintenance] Start: 6/2/14 03:20:00, Repeat:030D	SQL Execution...	Success						
[Instrument Poll Task] Start: 10/3/11 15:46:45, Repeat:001H	Instrument Poll...	Success						
[Purge Journal Message Task] Start: 11/1/12 23:15:06, Repeat:001D	Purge Journal...	Success	2/3/19 23:15:06	2/3/19 23:15:07	2/4/19 23:15:06	2/3/19 23:15:06		

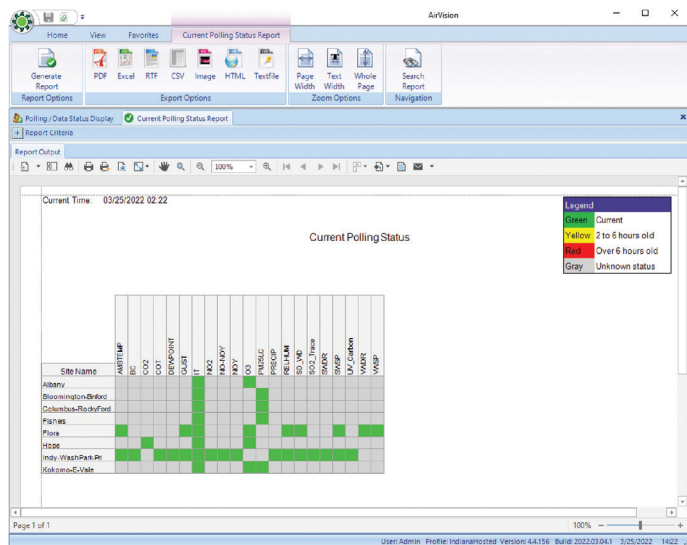
Task Display from Utilities > Scheduled Task Status

The user can select a particular row / task / subtask and perform certain actions with the ribbon controls:

- Execute Scheduled Task Now** - run the selected task, task group, or subtask immediately
- Update Task Status** - reset the last successful run time for the task
- Edit Task** - change the task settings
- View Log Messages** - show a filtered system log of events related only to that task
- Print/Export** - print / export the current task status screen.

Other ways of tracking Data Collection Status:

◆ Status Displays > Polling/ Data Status Display



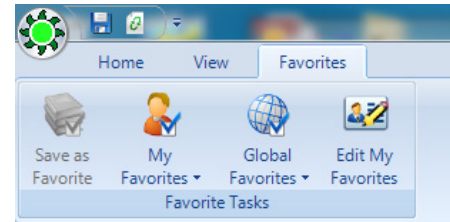
◆ Reports > Internal Reports > Current Polling Status Reports

The screenshot shows the 'Polling / Data Status Display' window in the AirVision application. The interface includes a menu bar (Home, View, Favorites), a toolbar with 'Manual Refresh' and 'Refresh Automatic' buttons, and configuration options for 'Interval (minutes): 1' and 'Offset (seconds): 20'. Below this is a 'Report Criteria' section with a 'ParameterTemplateName' dropdown. The main area is a grid with 'SiteName' on the y-axis and various parameters on the x-axis. The parameters listed are: ARBTDWP, SARPRESS, EC, CO, CO2, CO2T, DEVPDINH, GMR1, IT, NO2, NO-NOY, NOY, O3, PM10, PM10_LC, PM10_LC, PM10_STD, PM25, PM25_C01, PM25_C02, PM25_C03, PRECIP, RELHUM, SD_WD, SO2, SO2_5m_Hourly(Peak), SO2_Trace, SOLARRAD, SWDR, SWDRP, UFP, UV_Carbon, UV_RAD, VWSR, and VWSRP. The grid cells are colored based on the status of the data for each site-parameter combination. A legend at the bottom explains the color coding: Green (Current), Yellow (2 to 6 hours old), Red (Over 6 hours old), Grey (Unknown status), Pale Green (Maintenance), Magenta (Calibration), Blue (Disabled (offline)), and Orange (Invalid for other reason).

SiteName	ARBTDWP	SARPRESS	EC	CO	CO2	CO2T	DEVPDINH	GMR1	IT	NO2	NO-NOY	NOY	O3	PM10	PM10_LC	PM10_LC	PM10_STD	PM25	PM25_C01	PM25_C02	PM25_C03	PRECIP	RELHUM	SD_WD	SO2	SO2_5m_Hourly(Peak)	SO2_Trace	SOLARRAD	SWDR	SWDRP	UFP	UV_Carbon	UV_RAD	VWSR	VWSRP	
Indy-WashPark-Sec	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Inglesfield	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Jeffersonville-Bates	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Lafayette-Greenbush	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Laporte-E-Lincolnway	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Larwill	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Leo HS	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Leopold	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Mechanicsburg	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
New Albany	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Noblesville-191st	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Plummer	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Portage-Hwy 12	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Palato Creek	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Sandout	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
SouthBend-Shields	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Terre Haute-Lafayette	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green
Whitestown	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green	Green

Favorites Editor

AirVision simplifies regular tasks with a list of user-defined **Favorites**, which function like Favorites in Internet browsers. Favorites can be created for most menu items, including reports, editors, configurations, journals, calibration functions, file import, security settings, logger functions, emails, and task scheduling. Favorites can be saved for different sites, parameters, average intervals, and date ranges. They can be saved for all users or for one user.



Favorites menu

Creating a Favorite

To create a favorite, open **Configuration Editors > My Favorites Editor**. Click the red **Add Favorite** button on the left side of the ribbon.

Favorite Detail Tab

Under the **Favorite Detail** tab of the Favorites Editor: select a **Menu Item** from the drop-down list, enter a **Favorite Name**, enter a **Favorite Description** (optional), select a **Favorite Scope** from the drop-down list (**User** or **All Users**) and select from the following options:

- ◆ **Launch on Application Startup** to run the Favorite upon logging in to AirVision.

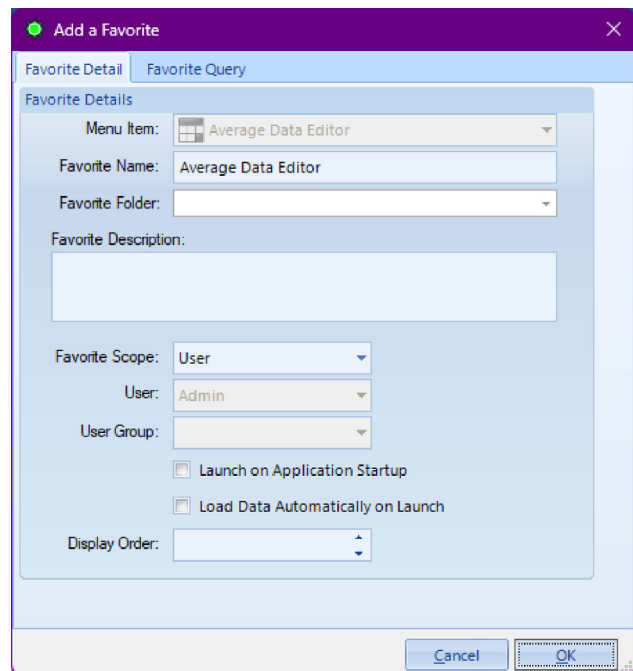
The user can also organize favorites by creating or selecting an existing **Favorites Folder**. The “Display Order” at the bottom can be used to sort Favorites in the main list or within a folder. Favorites with the Display Order blank will be sorted alphabetically, but Favorites with a number in Display Order will appear first, and in the numerical order.

- ◆ **Load Data Automatically on Launch** to execute data retrieval when the Favorite is selected.

Favorite Query Tab

Next, open the **Favorite Query** tab if it is available.

- **Note:** The Favorite Query tab will only be in the Favorites Editor after a Menu Item is selected that requires a time range, interval, and parameter(s), such as the Average Data Report and the Average Data Editor.



Add a Favorite Screen

Select a **Date Range**, choose an **Average Interval** and select a **Parameter**. To select more than one parameter, drag the arrow in the blue left column or hold down the **Ctrl** key while you select parameters.

To save a favorite when you're in any data editor or report, complete a query, and select **Favorites** from the top menu. The ribbon bar will change to show the favorites menu.

Select **Save as Favorite** to bring up the **Add a Favorite** screen.

You can also configure the **Favorite** by selecting the **Favorite Query** tab after you select **Save as Favorite**. From this screen you can adjust the site/parameter list, date range, or average interval. These values can also be adjusted later in the **Favorites Editor** in the **Configuration menu**.

To return to the ribbon controlling the current application, select the top menu function (above the ribbon), for example, Average Data Editor.

To use an existing Favorite, select **Favorites** from the top menu (above the ribbon bar), select **User Favorite** or **Global Favorites**, and the saved **Favorite**.

A copy button on the ribbon allows you to copy an existing favorite for slight modification, if needed.

The screenshot shows the 'Favorite Query' configuration window. It is divided into several sections:

- Date Range Selection:** Includes radio buttons for 'Current Day', 'Current Month', 'Current Quarter', 'Current Week', 'Current Year', 'Fixed Date Range', 'Last Month', 'Last Quarter', 'Last Week', 'Lookback Days', 'Lookback Hours', 'Lookback Minutes', and 'Yesterday'. There are also input fields for 'Start Date', 'End Date', and a 'Look Back Intervals' spinner.
- Average Interval:** A table with columns 'Average Interval' and 'Description'. The selected row is '001h' with the description 'Hourly average of 60 minutes'. Other rows include '001m', '005m', '015m', '001d', and '024H'.
- Parameter Selection:** A table with columns 'Site Name', 'Parameter Name', 'Parameter Template Name', and 'Parameter Description'. It lists parameters for 'SITEONE' such as NO, NO2, NOX, NOY, OZONE, PM10, PM10C_CONTIN, PM25, PM25LC, PM25LC_POCC1, PM25LC_Rollup, PMAMBTEMP, PMBARPRESS, PMVOLUME, RAINFALL, RH, RHi, RHx, SO2, SO2_5m_HourlyMax, SWD, and SWS.
- Query Option Switches:** A dropdown menu.
- Query String:** A text box containing the query string: `DateRangeType=CurrentDay&SourceParameters=ebdeb39a-9f8e-df11-9983-444553544200&AverageIntervals=c71a20a1-43f9-dd11-9b87-001e8c005352`. A 'Clear Selection' button is located to the right.

Favorite Query tab from Add a Favorite

Configuring Security

User security in AirVision is set up by administrative personnel and is similar to Microsoft Windows:

- ◆ Each system user has an identity, including a username and password
- ◆ A User may be a member of one or more User Groups
- ◆ Access and rights are assigned to User Groups

User Groups in AirVision are usually assigned by job responsibility (e.g., Data QA, Site Technicians, System Administrators). A group can optionally have its access limited to only certain monitoring sites. Users can be members of more than one **Group**, and each site can have a different access group.

User Editor

Administrators can add or delete users: open **Configuration Editors > Security > User Editor** and click **Add User** or **Delete User** button. Enter a **User Name** and **Set User Password**. Enter an **Email** address for the user .

In the **Contact Addresses** section of the screen you can click **Add Contact Addresses** and enter multiple email addresses for the same user to receive different notifications at different email addresses. Check the notifications to be emailed to each email address: Task, Report, Alarm, or ADVP. Each **Label** must have a different name or the database will not accept it.

User Editor from Configuration Editors > Security > User Editor

My User Settings

Non-administrative personnel can change their own Password, Email, and Name, but not their User Name in the **My User Settings** screen in **Configuration Editors > Security**. If a User Name needs to be changed (for example, if a name is misspelled), an Administrator would have to delete the original User Name and add a new one.

In the **Contact Addresses** section of the screen you can click **Add Contact Addresses** and enter multiple email addresses for the same user to receive different notifications at different email addresses. Check the notifications to be emailed to each email address: Task, Report, Alarm, or ADVP. Each **Label** must have a different name or the database will not accept it. Click **Save**.

My User Settings screen in Configuration Editors > Security

Groups Editor

Next, create or modify groups with the **Groups Editor**. These groups define roles (e.g., Site Technician, QA, etc.) and are tied to specific permissions and menu items. To add or delete groups, click the **Add Group** or **Delete Group** button. Select a group and add Users to that group as members of an existing or newly created group. To add a user, click on the asterisk (*) line in the right (gray) area to get a pick list of currently created users.

Click **Save**.

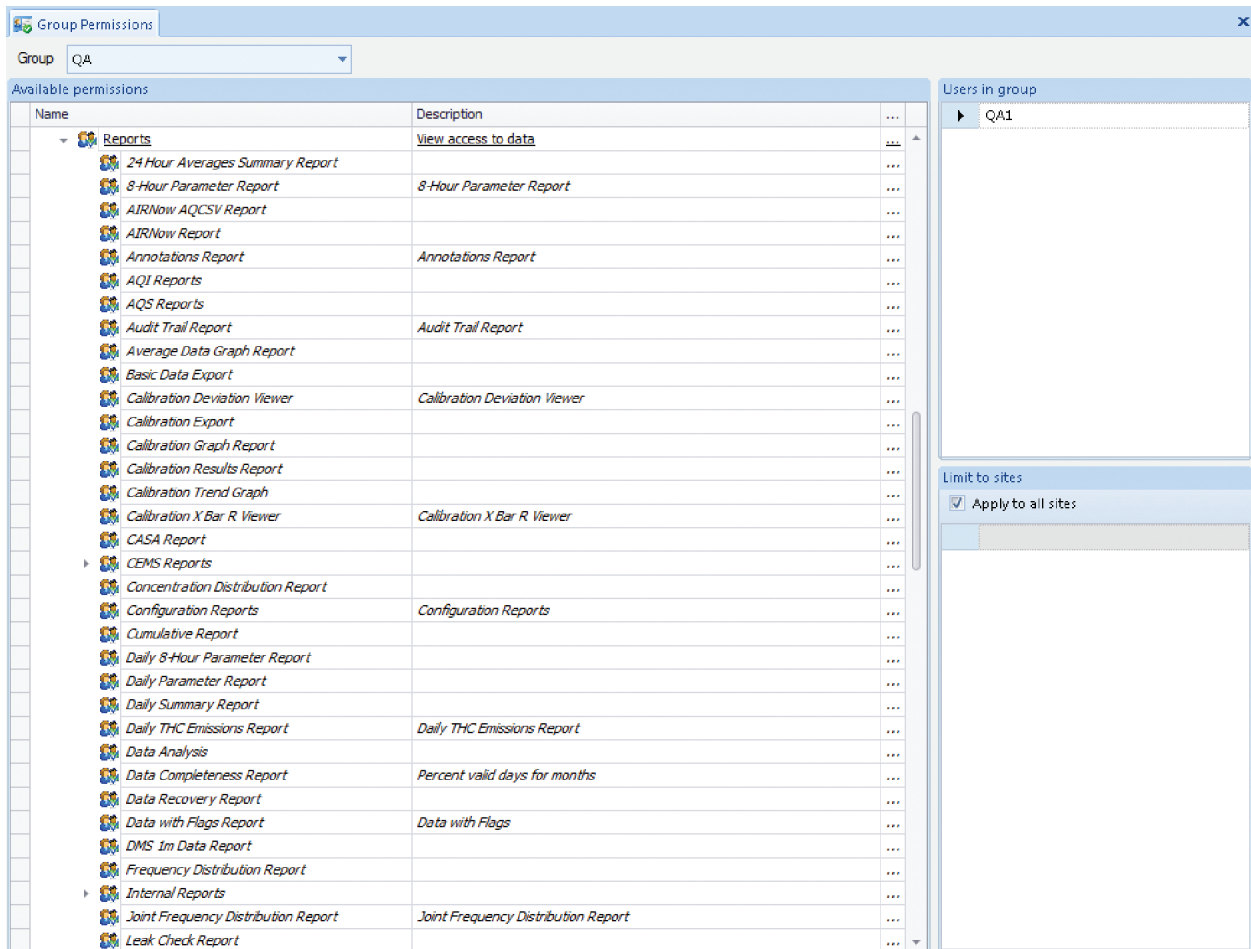
Groups Editor from Configuration Editors > Security > User Editor

Group Permissions

Finally, define the permissions for each **User Group** using the **Configuration Editors > Security > Group Permissions Editor**. Select a Group in the drop-down list. The list of configured users is displayed (and users can be added here as well). The right panel shows the various rights available in the system, and the status for the current group:

- ◆ Grayed = access disabled
- ◆ Black, underlined = access enabled
- ◆ Black, italic = access enabled by inheriting from another granted access.

In this example, access has been granted to certain Security permissions (Groups, Users, and User Groups, but not Edit Tasks). Access is granted to all configuration items at the topmost level, and all sub-tasks are permitted by inheritance. For example, to turn off Edit ADVP Rules, first remove the overall Edit Configurations permission and then add the individual permissions that we need. Expand and Collapse the tree using the buttons on the ribbon. To define a group as having site-specific access, uncheck the **Apply to All Sites** in the lower left panel, and then add sites using the list form below.



Group Permissions from Configuration Editors > Security > Group Permissions Editor

GSI Driver Editor

The purpose of the GSI Driver Editor (**Configuration Editors>GSI/Modbus Drivers**) is to provide a way to add, delete, or modify GSI driver entries in an editor similar to the Parameter Template editor for GSI entries and GSI instruments.

The GSI Driver Editor consists of an alphabetized pick-list of existing GSI entries for modification. Two editors may be required, one for instruments and one for entries, or two sections/tabs of the forms.

Generally, this library is maintained and updated by Agilaire. Contact support@agilaire.com for additional details or help if the factory-provided drivers don't match your instrument.

Configuring Reports

The following reports require some additional configuration to run:

- ◆ AirNow Report (**Configuration Editors > Report Configuration >AirNow/FTP Setup**)
- ◆ AQI Report (**Configuration Editors > Report Configuration >AQI Program Editor**)
- ◆ Frequency Distribution Report (**Configuration Editors > Report Configuration > Frequency Distribution Editor**)
- ◆ Concentration Distribution Report (**Configuration Editors > Report Configuration > Frequency Distribution Editor**)
- ◆ Violation of Standards Report (**Configuration Editors > Report Configuration > Violation of Standards Editor**)
- ◆ Wind Rose and Joint Frequency Distribution Report (**Configuration Editors > Report Configuration > Wind Rose Levels Editor**).

AirNow/FTP Setup

Submitting AirNow reports consists of three steps:

1. Check **Enable AirNow Reporting** in **Site/Parameter setup (Configuration Editors)**
2. Enter **AirNow Transfer Details** in **AirNow/FTP Setup (Configuration Editors > Report Configurations)**
3. Schedule **AirNow FTP Transfer task** in **Task Scheduler (Configuration Editors)**

For **AirNow Transfer Details** (step 2), open **AirNow/FTP Setup** from the **Configuration > Report Configurations** menu. To add a new transfer program select the **Add FTP Program** button on the Ribbon at the top. As transfer programs are added they will appear in the **AirNow FTP Program Selection** section. To open an existing transfer program, click the program name in the **AirNow FTP Program Selection** section.

To set up a new AirNow Transfer program, click the Add FTP Program button and enter the following fields:

- ◆ **Program Name** – The name that you choose to use to identify the transfer program.
- ◆ **Transfer Method** – Provides option for FTP, FTP/SSL, or SFTP (FTP over SSH).
- ◆ **FTP Host** – EPA's FTP address provided by EPA.
- ◆ **Directory** – Path to the destination directory provided by EPA.
- ◆ **User Name** – User ID provided by EPA.
- ◆ **Set User Password** – Clicking this button brings up a password box where you enter and confirm the password provided by EPA.
- ◆ **Enable** – Enables the transfer program to function.
- ◆ **Port** – **Port 22, or** as required by EPA.
- ◆ **AirNow** – Submits the report being transferred in AirNow format.
- ◆ **Agency** – Agency Code provided by EPA. (Used only for old OBS reports.)

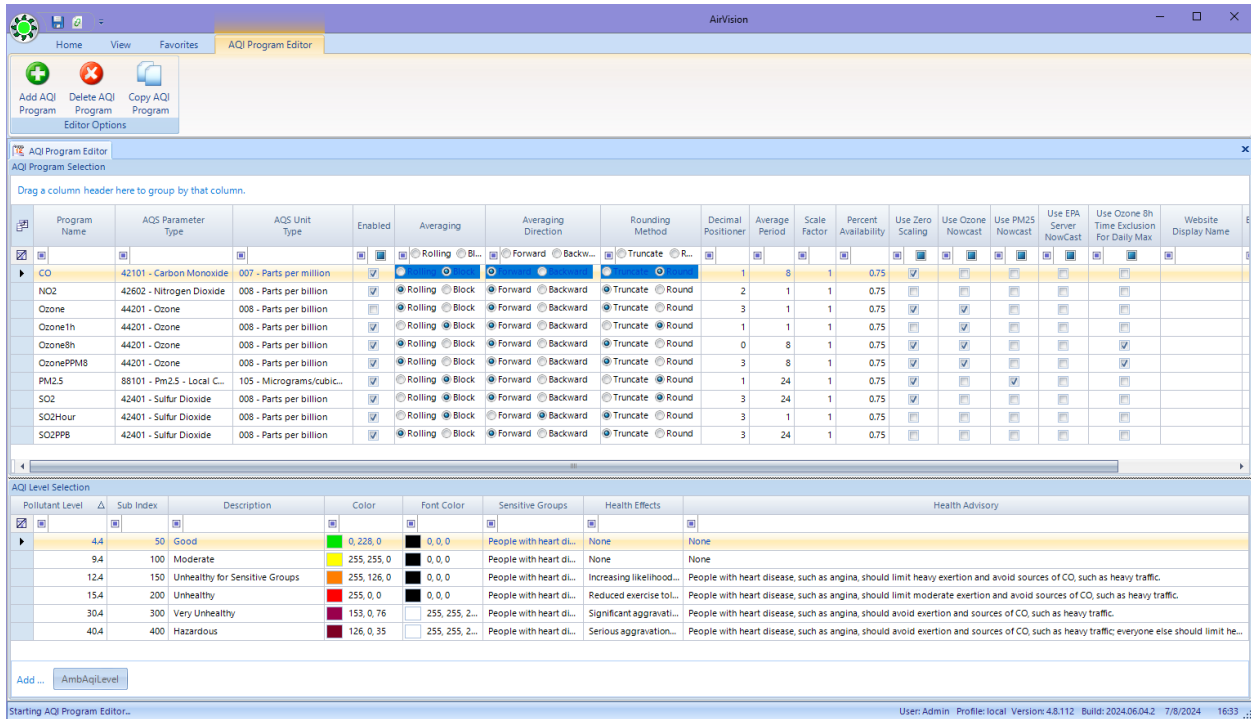
Click the **Save** icon.

Program Name	Enabled
AgilaireMobileApp	<input type="checkbox"/>
AIRNow	<input checked="" type="checkbox"/>
other	<input type="checkbox"/>

Program Name:	<input type="text" value="AIRNow"/>	Enable?	<input checked="" type="checkbox"/>
Transfer Method:	<input type="text" value="FTP"/>	Port:	<input type="text" value="21"/>
FTP Host:	<input type="text" value="ftp.airnowdata.org"/>	AIRNow?	<input checked="" type="checkbox"/>
Directory:	<input type="text" value="incoming/data/AQSCV_Test"/>	Agency:	<input type="text" value="TN4"/>
User Name:	<input type="text" value="SHCOperator"/>	<input type="button" value="Set User Password"/>	

AirNow FTP Setup in Configuration Editors

AQI Program Editor



AQI Program Editor from the Configuration menu

The AQI Program Editor is accessed via the Configuration menu. The purpose is to allow creation of programs to convert concentration values into an Air Air Quality Index (AQI) for use in AQI reports and by the AgileWeb module. For non-US systems that require multiple AQI profiles (e.g., a regional AQI and a national AQI), contact Agilaire Support for details on enabling multiple AQI profiles.

The **AQI Program Selection** section is a table with the following columns:

Program Name, e.g., CO, NO2, ozone8h

Parameter Type, e.g., 44201--ozone, 42602--nitrogen dioxide. These settings are used to match to the AQS Parameter Type in the Site/Configuration Editor. For a program to access data, the Parameter Type and AQS unit type must match.

AQS Unit Type, e.g., parts per billion, micrograms/cubic meter

Average Interval, e.g., 001h (hourly). Note that currently the AQI system uses only hourly data.

Enabled - check to enable or disable the AQI program in the row

Averaging type, rolling or block, only relevant if the average period is >1.

Averaging Direction, forward or backward, only relevant if the average period is >1.

Rounding Method, truncate or round

Decimal Positioner, number of places to the right of the decimal to be used. Data used to calculate the AQI will use the decimal positioner and round settings for each hourly data point used in the AQI, and then the decimal positioner and rounding will also be applied to the resultant concentration before converting to the AQI value.

Average Period, e.g., 8 hours, 24 hours

Scale Factor is the factor by which the reading of an instrument should be multiplied to give the true final value, for example, if you need to apply a multiplication factor to data for PPM to PPB conversion before comparing against break points. Alternately, the pollutant levels can be defined within a program to match the units.

Percent Availability - percentage of valid data points required during the rolling average duration to mark a multi-hour AQI calculation as valid

Use Zero Scaling - if selected, defines that concentration values between the zero and the first level/breakpoint will calculate an AQI value. If not selected, any concentration below the first level is assumed to not be a valid AQI number.

Use Ozone Nowcast - an estimation method that uses a combination of hourly particle concentrations from previous hours to estimate the Mid-24 average.

Use PM25 Nowcast - The PM25 NowCast is used instead of a 24-hour block average of the current day for the calculation of the AQI until an entire calendar day of hourly data is available.

Use EPA Server Nowcast - retrieves forecast values from USEPA AirNow Server. Requires an API key and account from AirNow. Contact support@agilaire.com for details on installing the API key into AirVision.

Website Display Name - allows alternative display of AQI program name in AgileWeb.

Use Ozone 8hTime Exclusion For Daily Max - This is the 17-hour rule that is part of the NowCast algorithm.

Exclude From Final AQI - If selected, this program will not be used for the AQI Standard Report and the AQI Historical Calculator

Exclude From Realtime AQI - If selected, this program will not be used for the AI Current Report, AgileWeb maps, and the AQI web services.

To add AQI program, click “Add AQI Program” on the ribbon, or use the Copy button to copy an existing program (and all its levels).

The **AQI Level Selection** section is a table with the following columns:

Pollutant Level--the upper limit on an AQI value for a particular group

Sub Index--the actual data value in units

Description and color--defaults to Good (green), Moderate (yellow), Unhealthy for Sensitive Groups (orange), Unhealthy (red), Very Unhealthy (purple), and Hazardous (maroon)

Color - Background color behind the text.

Font Color--color for text (used in AgileWeb site)

Sensitive Groups and Health Effects--describes people who are most sensitive to this level of pollution and the possible health results.

Health Advisory--advise for people at risk for this level of pollution

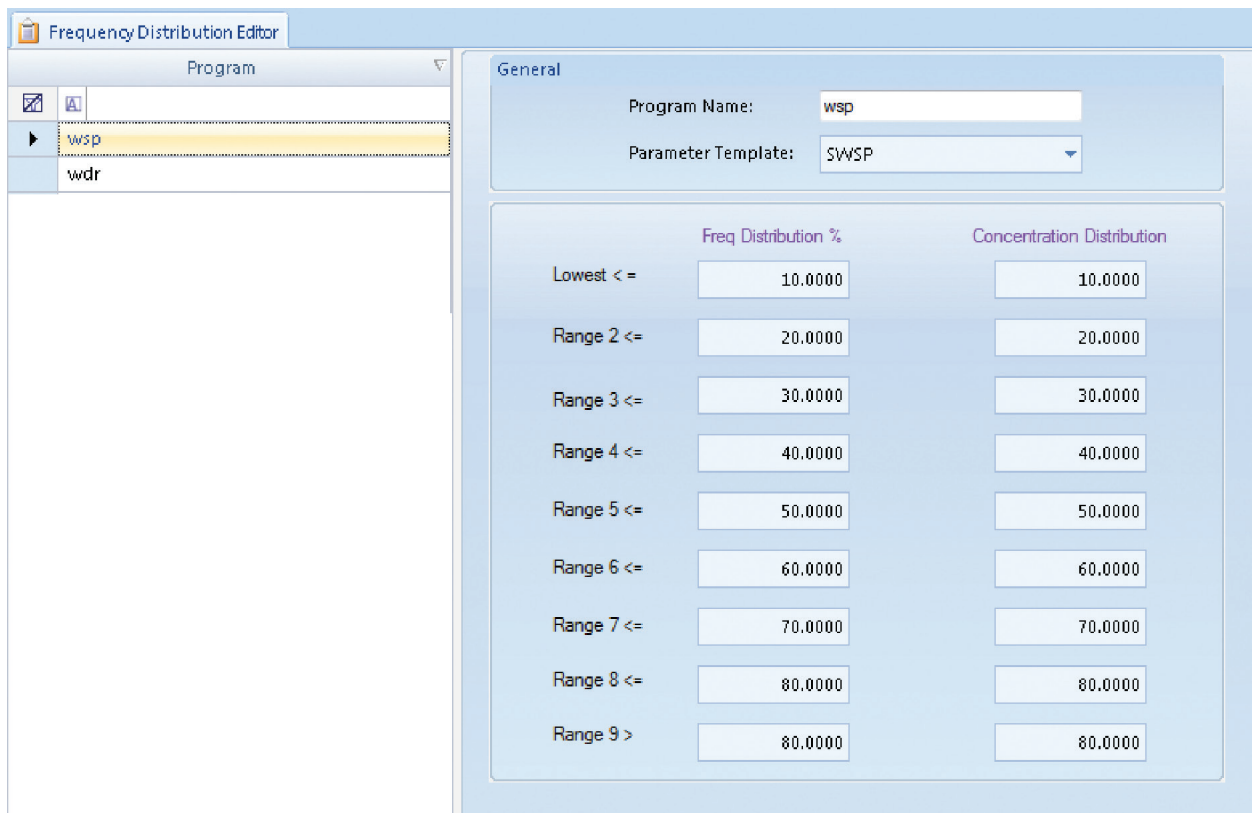
To add a pollutant level, use the “Add AQI Level” button at the bottom of the screen.

Each column in the table has a button that allows you to search for a row under that heading and a button to clear all filter criteria. You can change the column order by dragging the headings to a different place. You can drag a column heading above the table to change the way the information is grouped.

Frequency Distribution and Concentration Distribution Editor

Frequency and Concentration Distribution Reports are configured in the same editor (**Configuration Editors > Report Configurations > Frequency Distribution Editor**).

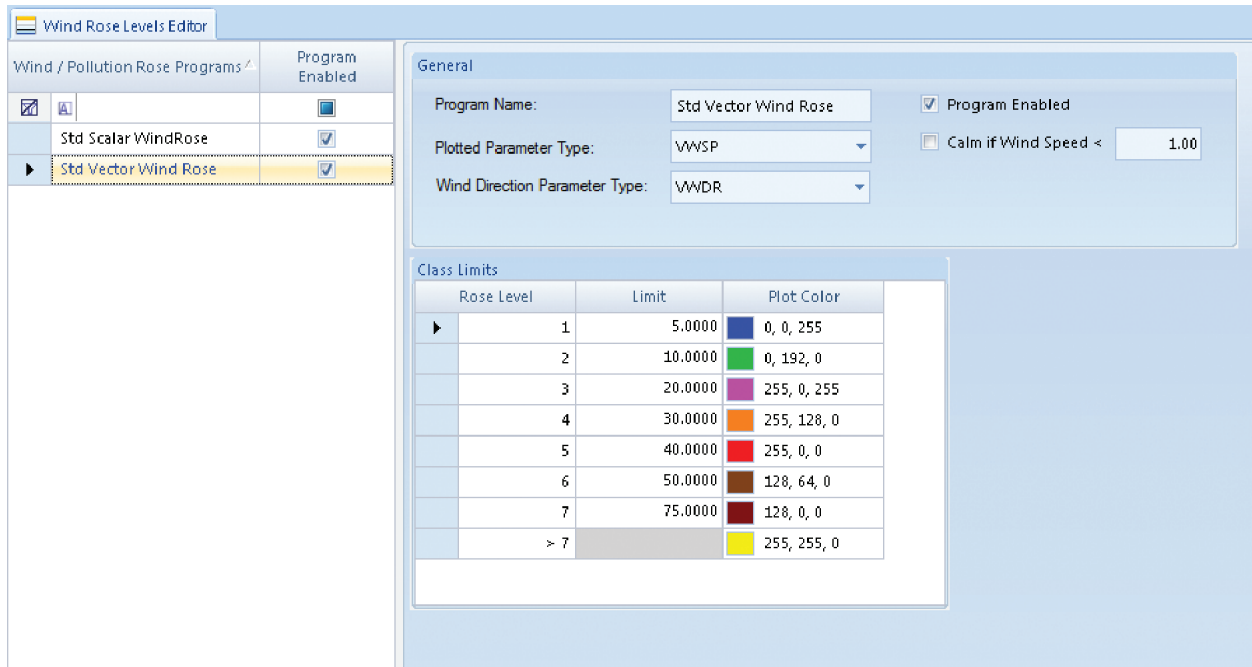
You define the concentration values and statistical percentages to display in the report, with one definition entry for each Parameter Template.



Frequency and Concentration Distribution Report Editor from Configuration Editors > Report Configurations > Frequency Distribution Editor

Wind Rose Levels Editor

In the Wind Rose Levels Editor (**Configuration Editors > Report Configurations > Wind Rose Levels Editor**) you can designate the magnitude of wind speed values and pollutant concentrations for each color and width in the rose. You can create a profile for each combination of a wind direction type (scalar or vector) wind speed, or pollutant, via the Parameter Template. This report profile applies to all sites.

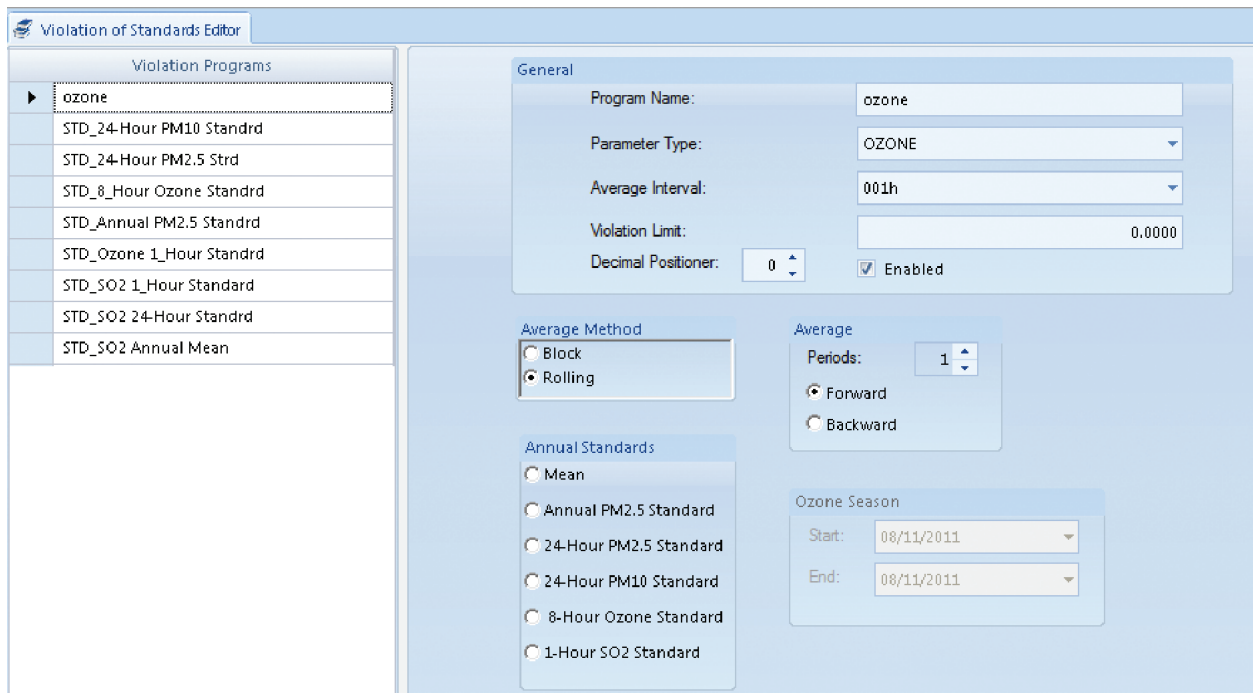


Configuring Wind/Pollution Rose Reports in Configuration Editors > Wind Rose Levels Editor

Violation of Standards Editor

In the Violation of Standards Editor (**Configuration Editors > Violation of Standards Editor, 87**), you can designate the calculation method, averaging method, and limit for any parameter template. The limits can be single averages, rolling averages, block averages, or you can choose from several standard USEPA annual and multi-year defined calculations.

For the 8-hour ozone standard, you should also designate the start and end of ozone season (or select Jan 1 – Dec 31 for year-round reporting).



Violation of Standards Editor from Configuration Editors > Violation of Standards Editor

Chapter 3

Reports

After data has been polled, either by a scheduled task (**Configuration Editor>Task Scheduler**) or manually (**Utilities > Manual Poll** or **Utilities > Manual Instrument Poll**) AirVision can be run by selecting a report from the **Reports** menu.

- ▶ **Note:** You can now add your logo to the top of Daily Summary and Monthly reports. Open the **Server directory** in the **Program directory** where AirVision is installed (typically C:\Program Files\Agilaire LLC\AirVision Server) and paste **logo.jpg** into the Server Directory (C:\Program Files\Agilaire LLC\AirVision Server\logo.jpg).

The **Reports** menu lists reports with related reports grouped in folders.

Summary Reports

- ◆ Daily Summary Report
- ◆ Daily Parameter Report
- ◆ Monthly Report
- ◆ 24-Hour Averages Summary Report
- ◆ 8-Hour Rolling Average Report

Calibration Reports

- ◆ 1-Point QC Summary Report
- ◆ Calibration export
- ◆ Calibration Graph Report
- ◆ Calibration Results
- ◆ Calibration Trend Graph
- ◆ Calibration X-Bar-R Chart
- ◆ Calibration Zero/Span Graph Viewer
- ◆ Multi Phase Calibration Report
- ◆ USEPA Zero Drift Report
- ◆ The Converter Efficiency Span and Precision Reports

Statistical Reports

- ◆ Concentration Distribution Report
- ◆ Data Analysis
- ◆ Data Completeness Report
- ◆ Data Recovery Report
- ◆ Frequency Distribution Report
- ◆ Maximum Hourly Values
- ◆ Network Data Recovery Report
- ◆ Statistical Report

Chapter 3

Reports

AirNow Reports

- ◆ AirNow AQSCSV Report

AQS Reports

- ◆ AQS 2.2 Text Report
- ◆ AQS XML 2.2 Report / XML 3.0 Report

USEPA Reports

- ◆ Precision Reporting for Gases

AQI Reports

- ◆ AQI Levels Report
- ◆ AQI Monthly Group Report
- ◆ AQI Report--Current
- ◆ AQI Monthly Report
- ◆ AQI Report--Standard
- ◆ Voice AQI Report

Asset Reports (Optional, with Asset Tracking Module)

- ◆ Asset Export Report
- ◆ Asset History Report
- ◆ Parameter Asset History Report

Configuration Reports

- ◆ Analog Outputs Configuration Report
- ◆ Average Alarm Report
- ◆ Calibration Alarm Configuration Report
- ◆ Calibration Configuration Report
- ◆ Channel Configuration Report
- ◆ Channel Equation Report
- ◆ Digital IO Configuration Report
- ◆ GSI Configuration Report
- ◆ Logger Configuration Report
- ◆ Math Equation Report
- ◆ Notification Configuration Reports
- ◆ Parameter Configuration Report
- ◆ Scheduled Tasks Report
- ◆ Site Configuration Report

Chapter 3

Reports

Internal Reports

- ◆ Audit Change Viewer
- ◆ DB Modification History
- ◆ Diagnostic Report
- ◆ Software Version Report
- ◆ Exception Journal Report
- ◆ Login Event History
- ◆ Login Session History
- ◆ Site Node Logger Status Report
- ◆ Table Size Information

Logger Reports

- ◆ Central Messages
- ◆ Input Line Status Report
- ◆ Power Failure Report

Met Reports

- ◆ Joint Frequency Distribution Report
- ◆ Meteorological Report
- ◆ Wind/Pollution Rose

Sample Data Reports

- ◆ Basic Sample Data Report
- ◆ Monthly Sample Data Report
- ◆ Sample Annotations Report
- ◆ Sample Hourly Daily Comparison Report
- ◆ Sample Hourly Comparison Graph
- ◆ Sample Data Graph

Other Notation Reports

- ◆ Annotations Report
- ◆ Audit Trail Report
- ◆ LogBook Report

Average Reports

- ◆ Average Data Trend Report
- ◆ Basic Data Export
- ◆ Data with Flags

Other Reports

- ◆ Cumulative Report
- ◆ Site Health Report
- ◆ Violation of Standards Report

Criteria Pane

All reports use a Criteria Pane to select a time range and list of pollutants for the report.

You can select the **Date Range** any of the following ways:

- ◆ Manually type in a month, day, year, and time.
- ◆ Click in a date field (the month, date, year, hour, minute) and click the small up or down arrow keys to raise or lower that field (month, day, year, hour, minute). (It isn't necessary to highlight the field, just put the cursor in it.)
- ◆ Use the bigger down arrow control to bring up a **Calendar**. You can click the arrows to change the month, or click the name of the month or year to bring up a list.
- ◆ Use the **Star** button to select from a pre-defined date range:

Current Day	Current Quarter
Yesterday	Last Quarter
Current Week	Current Year
Last Week	Days Back
Current Month	Hours Back
Last Month	Minutes Back

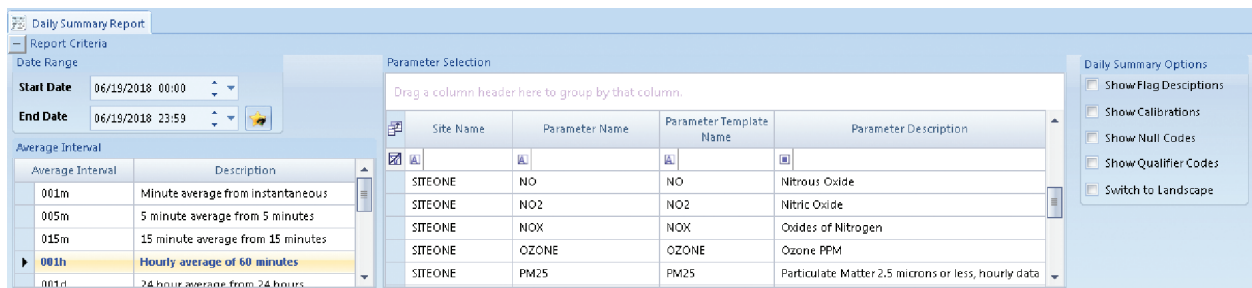
In addition, the time criteria (e.g., the star icon button) allows you to choose “shift forward one day” or “shift backward one day.” If you select one of these and hit apply, it acts similar to the “Data Forward” or “Data Backward” buttons, except always shifting by 24 hours, rather than the size of the data window. This is useful for reviewing calibration minute data for several days, where the calibration falls on the same time each day.

Scroll to select an **Average Interval** (most reports only support one average interval at a time).

Click to select a site and parameter; use standard Windows Shift-Click and Control-Click conventions to select multiple parameters.

Some reports may have additional criteria; for example, in the **Daily Summary** section, select from the following check boxes:

- ◆ Show Flag Descriptions
- ◆ Show Calibrations
- ◆ Show Null Codes
- ◆ Show Qualifier Codes
- ◆ Switch to Landscape



Filters

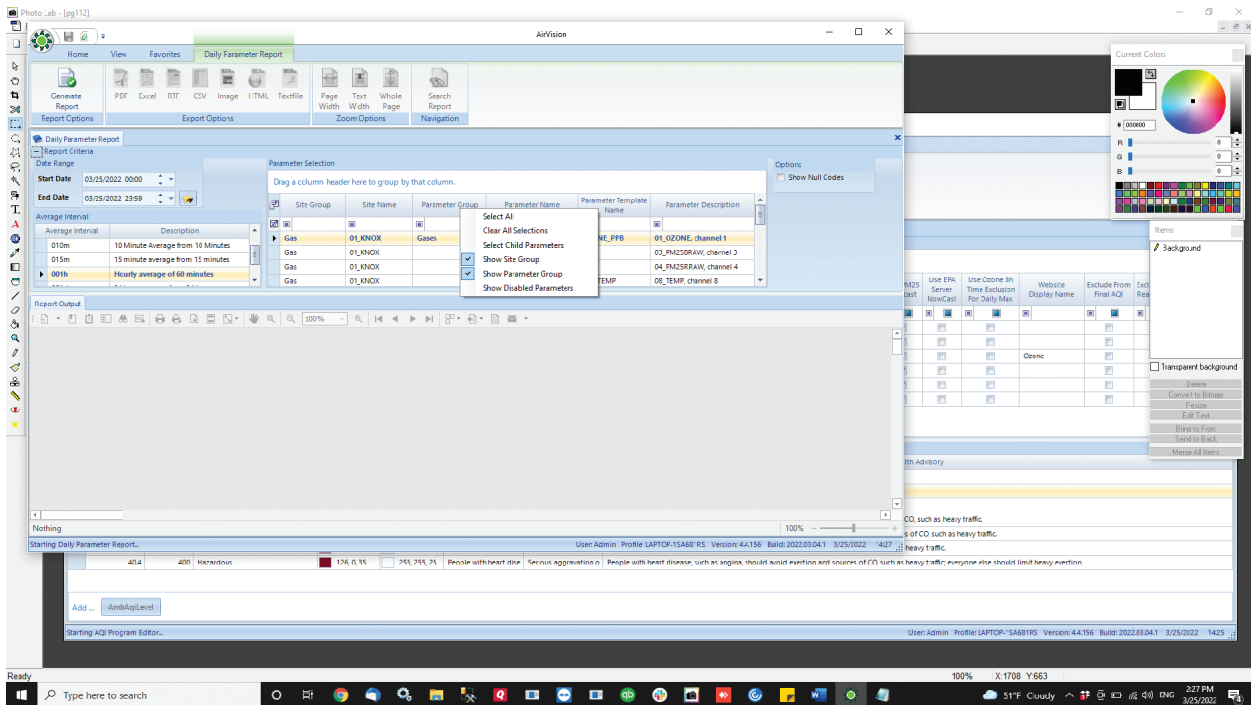
Filter fields are available in the top row of each column. Click in the row to use the filter to list a single site, parameter, or parameter template. The default filter is "contains".

Click the down-arrow to the right of each filter field to select a particular entry in the column. Choices in the drop-down list will be Custom, Blanks, Non-blanks, plus each entry in the column (site name, parameter names, or parameter templates or parameter description)

Parameter Selection				
Drag a column header here to group by that column.				
Site Name	Parameter Name	Parameter Template Name	Parameter Description	
SITEONE	NO	NO	Nitrous Oxide	
SITEONE	NO2	NO2	Nitric Oxide	
SITEONE	NOX	NOX	Oxides of Nitrogen	
SITEONE	OZONE	OZONE	Ozone PPM	
SITEONE	PM25	PM25	Particulate Matter 2.5 microns or less, hourly data	

Filter fields in Reports criteria pane

You can also right-click in the bar of criteria field to add or remove some fields, like Site Groups and Parameter Groups for additional filtering.



Click the box with the square dot **A** in the left side of each filter field to change the filter field from the default of **Starts With** to one of the following:

- Equals
- Does not equal
- Less than
- Less than or equal to
- Greater than
- Greater than or equal to
- Like
- Matches Regular Expression
- Starts with
- Contains
- Ends with
- Does not start with
- Does not contain
- Does not end with
- Does not match
- Not like

For example, if you imported E-DAS data and used the option to put the channel number in front of the channel name, you might end up with some ozone channels that were “01_OZONE” while others were “03_OZONE” and “04_OZONE”. Using the boxed “A” filter, you could search for all parameters names that contain “Ozone” and more easily select them from a large list of parameters. Using a filter makes it easy to see a Parameter Template was not set for O3_AMB_TEMP.

Parameter Selection

Drag a column header here to group by that column.

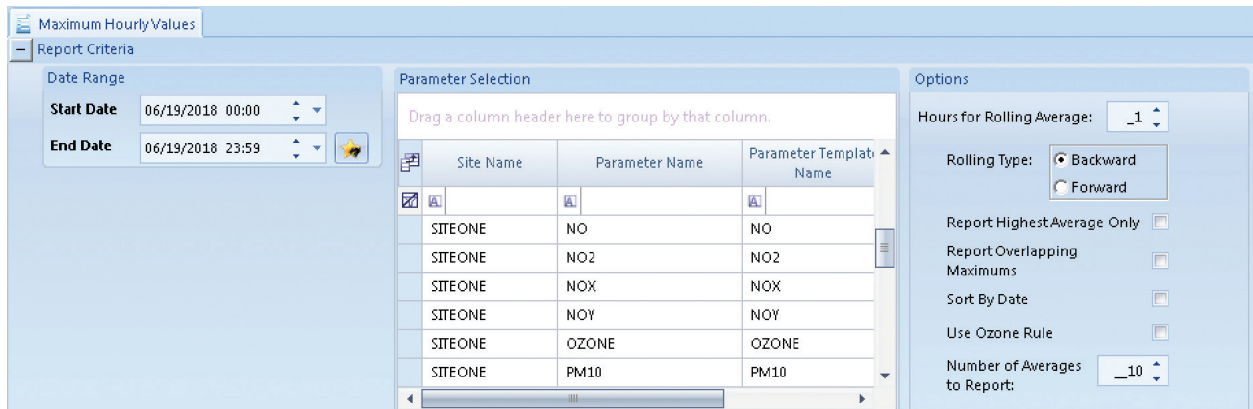
Site Name	Parameter Name	Parameter Template
	AMB_TEMP	
Blount_S	11_AMB_TEMP	AMBTEMP
Blount2	12_AMB_TEMP	AMBTEMP
Brainerd	03_AMB_TEMP	
Roane_Y	12_AMB_TEMP	AMBTEMP
Union	11_AMB_TEMP	AMBTEMP

Using a filter to determine which parameters don't have a template

Additional Fields for Specific Reports

For some reports, the Criteria Panel is expanded with additional fields. For the Maximum Hourly Values report, additional information is needed on how the data in the report should be filtered and calculated:

- ◆ Rolling hours, and time-tagging type
- ◆ Report highest average only for any day
- ◆ Allow report of overlapping maximums (for multiple hour rolling averages)
- ◆ Number of maximum averages to report



Maximum Hourly Values

Report Criteria

Date Range

Start Date: 06/19/2018 00:00

End Date: 06/19/2018 23:59

Parameter Selection

Drag a column header here to group by that column.

Site Name	Parameter Name	Parameter Template Name
SITEONE	NO	NO
SITEONE	NO2	NO2
SITEONE	NOX	NOX
SITEONE	NOY	NOY
SITEONE	OZONE	OZONE
SITEONE	PM10	PM10

Options

Hours for Rolling Average: 1

Rolling Type: Backward Forward

Report Highest Average Only:

Report Overlapping Maximums:

Sort By Date:

Use Ozone Rule:

Number of Averages to Report: 10

Additional Report Criteria required for Maximum Hourly Values report

Other reports with additional criteria include:

- ◆ Wind / Pollution Rose requires you to designate which Wind Rose report profile to use.
- ◆ AQS/XML Report requires you to choose which kinds of records to be assembled.
- ◆ Concentration Distribution, Frequency Distribution, Monthly Reports all allow you to designate an N-hour rolling average as an option.

Summary Reports

Daily Summary Report

The **Daily Summary Report** is usually for the daily summary of hourly data for all parameters at a site or sites, but it can also be used to report any time range or average interval. Statistics (average, maximum, minimum, and count) are at the bottom of each column. If **Totalize in Reports** is selected in the Parameter configuration, a **Total** will be displayed in the **Daily Summary Report**.

To generate a **Daily Summary Report (Reports > Summary Reports > Daily Summary Report)**, select **Start** and **End Dates**, an **Average Interval**, **Site Name** or **Names**, and **Parameter Name** or **Names**. Click the **Generate Report** icon on the Ribbon.

Date Printed: 2/4/2019 12:09

Daily Summary Report

Site: SITEONE

6/19/2018

Interval: 001h

	NO	NO2	NOX	CO	OZONE
Time	PPM	PPB	PPM	PPM	PPM
00:00	6.224	1.203	.538	1.3	33.3
01:00	6.186	1.207	.546	1.2	33.3
02:00	6.191	1.201	.540	1.3	33.3
03:00	6.235	1.202	.538	1.3	33.3
04:00	6.224	1.208	.542	1.3	33.3
05:00	6.063	1.203	.548	C	33.3
06:00	6.100	1.207	.552	1.2	33.3
07:00	6.145	1.210	.555	1.3	33.3
08:00	6.352	1.210	.548	1.3	33.3
09:00	6.200	1.213	.553	1.3	33.3
10:00	6.258	1.209	.549	1.3	33.3
11:00	6.183	1.208	.549	1.3	33.3
12:00	6.206	1.203	.546	1.3	33.3
13:00	6.232	1.204	.544	1.3	33.3
14:00	6.125	1.205	.552	1.3	33.3
15:00	5.983	1.210	.556	1.2	C
16:00	6.341	1.207	.549	1.3 h	33.3
17:00	6.233	1.213	.552	1.3	33.3
18:00	6.198	1.211	.550	1.2	33.3
19:00	6.150	1.205	.550	1.3	33.3
20:00	6.065	1.202	.549	1.3	33.3
21:00	6.025	1.199	.547	1.3	33.3
22:00	5.901	1.192	.554	1.2	33.3
23:00	5.891	1.192	.554	1.2	33.3
Avg	6.154	1.205	.548	1.3	33.3
Max	6.352	1.213	.556	1.3	33.3
Max Time	08:00	17:00	15:00	21:00	23:00
Min	5.891	1.192	.538	1.2	33.3
Count	24	24	24	23	23
Total			13.16	29.3	

Daily Summary Report with Total

Report options are available to:

- ◆ Add Flag description page to end of report.
- ◆ Add Cal report to end of report.
- ◆ Show null codes instead of flags if invalid.
- ◆ Show qualifier codes, if present.
- ◆ Show report in landscape mode.

The Basic Data Export Report is like the Daily Summary Report, but without page breaks or summary statistics, which makes it better for Excel or database imports.

Daily Parameter Report

The **Daily Parameter Report** shows a single day summary of hourly data for the entire monitoring network, grouping parameters together by the Parameter Template, but showing all sites sharing that parameter template.

Parameters that do not have a parameter template designated are not reported.

To generate a **Daily Parameter Report (Reports > Summary Reports > Daily Parameter Report)**, select **Start** and **End Dates**, an **Average Interval**, **Site Name** or Names, and **Parameter Name** or Names. Click the **Generate Report** icon on the Ribbon.

Current Date: 2/4/2019 12:06 PM

Daily Parameter Report

6/19/2018

Parameter	SiteName	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Summary					
																											Avg	Max	of		
CO	SITEONE	1.3	1.2	1.3	1.3	1.3	C	1.2	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.2	1.3	1.3	1.2	1.3	1.3	1.3	1.2	1.2	1.3	1.3	00			
NO	SITEONE	6.224	6.186	6.161	6.236	6.224	6.063	6.100	6.146	6.362	6.200	6.268	6.183	6.206	6.232	6.126	6.082	6.341	6.233	6.198	6.160	6.066	6.026	6.901	6.891	5.154	5.352	08			
NO2	SITEONE	1.203	1.207	1.201	1.202	1.206	1.203	1.207	1.210	1.210	1.213	1.209	1.208	1.203	1.204	1.205	1.210	1.207	1.213	1.211	1.205	1.202	1.199	1.192	1.192	1.205	1.213	09			
NOX	SITEONE	.538	.546	.540	.538	.542	.548	.552	.555	.548	.553	.549	.549	.546	.544	.552	.556	.549	.552	.550	.549	.547	.554	.554	.548	.556	.556	15			
OZONE	SITEONE	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	00			

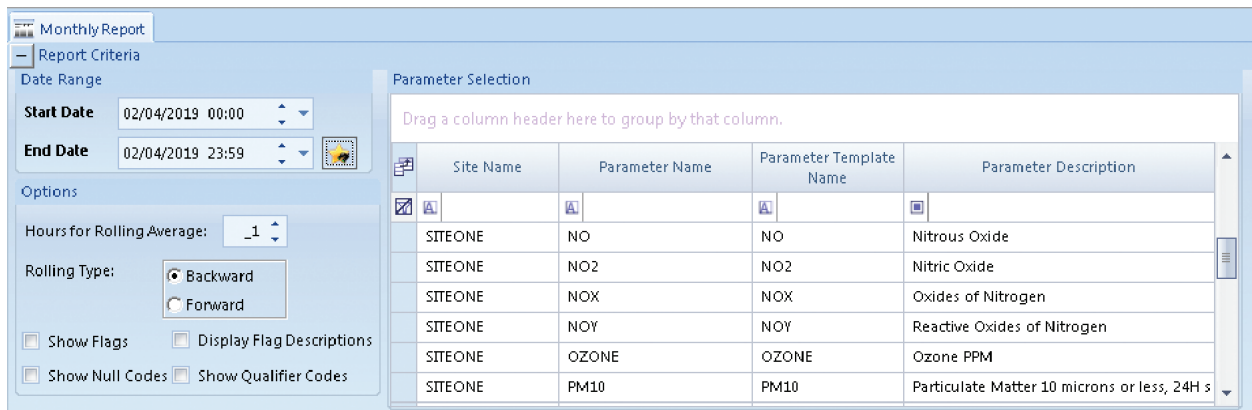
A report option is available to show null codes for invalid hours.

Monthly Report

Monthly reports provide a matrix view of a single parameter, showing values for the entire month. Invalid or flagged data is shown with a color background or font change defining the data condition. Statistics are provided for each row (day) and column (hour).

To run a **Monthly Report**:

1. Select **Reports > Monthly Report**.
2. Select a **Start** and **End** date
3. Select number of **Hours for Rolling Average**
4. Select a **Rolling Type (Backward or Forward)**
5. Select the **Parameters** that will be displayed in the report
6. If you want the **Flags** to be shown in the report, click the check box beside of **Show Flags**. (You may have to drag the screen divider down to see the Flags option. If you want the **Null Codes** to be shown in the report, click to the check box beside of **Show Null Codes**. If you want the **Qualifier Codes** to be shown in the report, click the check box beside of **Show Qualifier Codes**. Qualifier Codes and Null Codes can also be shown together.



7. Click the **Generate Report** button on the Ribbon.

► **Note:** If **Totalize in Reports** was selected in **Configuration Editors > Parameter Settings**, Monthly Reports will show a total of data rather than an average. If **Minimum in Reports** was this option was selected in **Configuration Editors > Parameter Settings**, Monthly Reports will show a minimum of data rather than an average or a total. Totalize in Reports and Minimum in Reports are most commonly used for rainfall.

Current Date: 2/4/2019 10:31 AM Monthly Report
 Site Name: SITEONE 093 : 7001 June 2018
 Parameter: OZONE 44201 Avg Interval: 1 hour
 Units: PPM 007 Method: 321

Day	Hours																							Summary					
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Max	Avg	RDS		
	D1	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3
D2	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D4	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D5	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D6	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D7	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D8	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D9	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D10	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D11	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D12	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D13	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D14	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D15	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D16	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D17	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D18	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D19	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D20	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D21	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D22	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D23	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D24	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D25	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D26	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D27	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D28	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D29	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
D30	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	C	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	23
Max	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3		33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	
Avg	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3		33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	33.3	
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	0	30	30	30	30	30	30	30	30	30	30	30	690	

Monthly Report with Parameter Code

If Site Codes, and/or Parameter codes have been configured in the Configuration Menu they will be included in the Header. Options are provided to show null codes or flags when an invalid hour is shown on the report. These options are also available in the Scheduled Task (options). Report options are also available to add the flag legend page, show null or qualifier codes, and whether to show flags for invalid date.

24-Hour Averages Summary Report

The **24-Hour Averages Report** provides a report of 24-hour averages, one month per page.

This report assumes that:

- ◆ either the data logger is storing and is polled for '1d' averages,
 - ◆ or that the **Data Rollup Utility** is used to create 24 hour averages from hourly data.
- The 24-Hour Averages Summary Report is for average data only.

Current Time: 02/04/2019 10:25

24 Hour Average Summary Report
June 2018

Day	SITEONE	
	PM10 UG/M3	PM25 UG/M3
01	6.3	.6
02	6.3	.6
03	6.2	.6
04	6.3	.6
05	6.3	.6
06	6.3	.6
07	6.3	.6
08	6.3	.6
09	6.2	.6
10	6.2	.6
11	6.3	.6
12	6.3	.6
13	6.3	.6
14	6.3	.6
15	6.3	.6
16	6.3	.6
17	6.3	.6
18	6.3	.6
19	6.3	.6
20	6.3	.6
21	6.3	.6
22	6.3	.6
23	6.3	.6
24	6.3	.6
25	6.3	.6
26	6.3	.6
27	6.3	.6
28	6.3	.6
29	6.3	.6
30	6.3	.6
Avg	6.2	0.6
Max	6.3	.6
Min	6.2	.6
Count	30	30

24 Hour Average Summary Report

8-Hour Rolling Average Report

This report is similar to the Daily Parameter Report in format, except that each of the hourly data cells are an 8-hour forward rolling average, commonly used for ozone reporting.

Current Date: 1/31/2019 4:07 PM

8 Hour Rolling Average Report

6/1/2018

Parameter	Site Name	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Grand Total		
		Avg	Max	HF	OT	Max																						
NO	SITEONE	6.08	6.086	6.073	6.060	6.08	6.081	6.082	6.090	6.094	6.114	6.118	6.118	6.096	6.122	6.137	6.142	6.141	6.134	6.136	6.142	6.173	6.177	6.101	6.108	6.110	6.108	23

◆ Monthly Highest Ozone Days Report

- Ozone parameters are determined by the parameter template that is configured with the Parameter Code 44201 with the lowest POC code.
- The value in the cell is the highest valid 8-hour rolling average with rolling average restarting at the start of the day. For example: For hours 0 - 4 there would be no valid value, only 17 valid values per day.
- Hard coded precision of 3 for PPM and 0 for PPB.

Current Date: 8/20/2024 12:21 PM

Monthly Highest Daily Ozone Report

		Jul-2024																															
Monitoring Site	POC	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
NCore	1	22	30	25	29	29	23	31	28	38	23	25	34	32	38	26	34	35	21	29	34	38	27	17	6	8	29	18	24	30	25	N/A	
South School	1	23	28	24	8	14	21	29	26	30	24	29	29	31	36	26	31	36	27	25	33	35	28	19	8	10	22	18	22	29	27	N/A	
West Park	2	18	26	22	24	25	21	27	26	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	24	24	N/A
Maximum Value		23	30	25	29	29	23	31	28	38	24	29	34	32	38	26	34	36	27	29	34	38	28	19	8	10	29	18	24	30	27	N/A	

◆ Four Highest Ozone Report

- Uses the season's start and end dates for the year in the criteria if configured.
- Multiple years are not supported.
- The report identifies the Ozone parameter to use based on the Parameter Code 44201 with the lowest POC code.
- It identifies the parameter to use in the AQI based on the Parameter Code 44201.
- If multiple results are found with Parameter Code 44201 it will use the first match with Average Period = 8.

Calibrations Reports

1-Point QC Summary Report

This report provides a statistical summary over the report period of all calibration data marked with the "PREC" level and configured with AQS codes.

Date Printed: 07/16/2018 10:22

1-Point QC Summary Report

7/1/2018 - 7/16/2018

<u>Site</u>	<u>Parameter</u>	<u>Parameter Code</u>	<u>Unit Code</u>	<u>Method Code</u>	<u>Count</u>	<u>CV%</u>	<u>Bias%</u>	<u>Upper Probability Limit</u>	<u>Lower Probability Limit</u>
SITEONE	OZONE	44201	007	321	2	33.42	0.09	33.39	33.35

Calibration Export

This report is used to export calibration data in a raw form, suitable for import into Excel or other external databases.

Site	Parameter	Sequence	Phase	Start Time	End Time	Value	Expected Value	% Error	Drift Limit %
SITEONE	CO	COCAL	Span1	29-Jan-2019 05:00:00	29-Jan-2019 05:10:00	1.3	10	86.82	
SITEONE	CO	COCAL	Span2	29-Jan-2019 05:00:00	29-Jan-2019 05:15:00	1.3	20	93.42	
SITEONE	CO	COCAL	Zero	29-Jan-2019 05:00:00	29-Jan-2019 05:05:00	1.3	0.0	1.3	
SITEONE	OZONE	AUTOCAL	PREC	29-Jan-2019 15:05:21	29-Jan-2019 15:09:21	245	0.0	24502.71	
SITEONE	OZONE	AUTOCAL	SPAN1	29-Jan-2019 15:05:21	29-Jan-2019 15:07:21	245	10	23502.81	
SITEONE	OZONE	AUTOCAL	SPAN2	29-Jan-2019 15:05:21	29-Jan-2019 15:08:21	245	20	22502.8	
SITEONE	OZONE	AUTOCAL	ZERO	29-Jan-2019 15:05:21	29-Jan-2019 15:06:21	245	0.0	24502.75	300

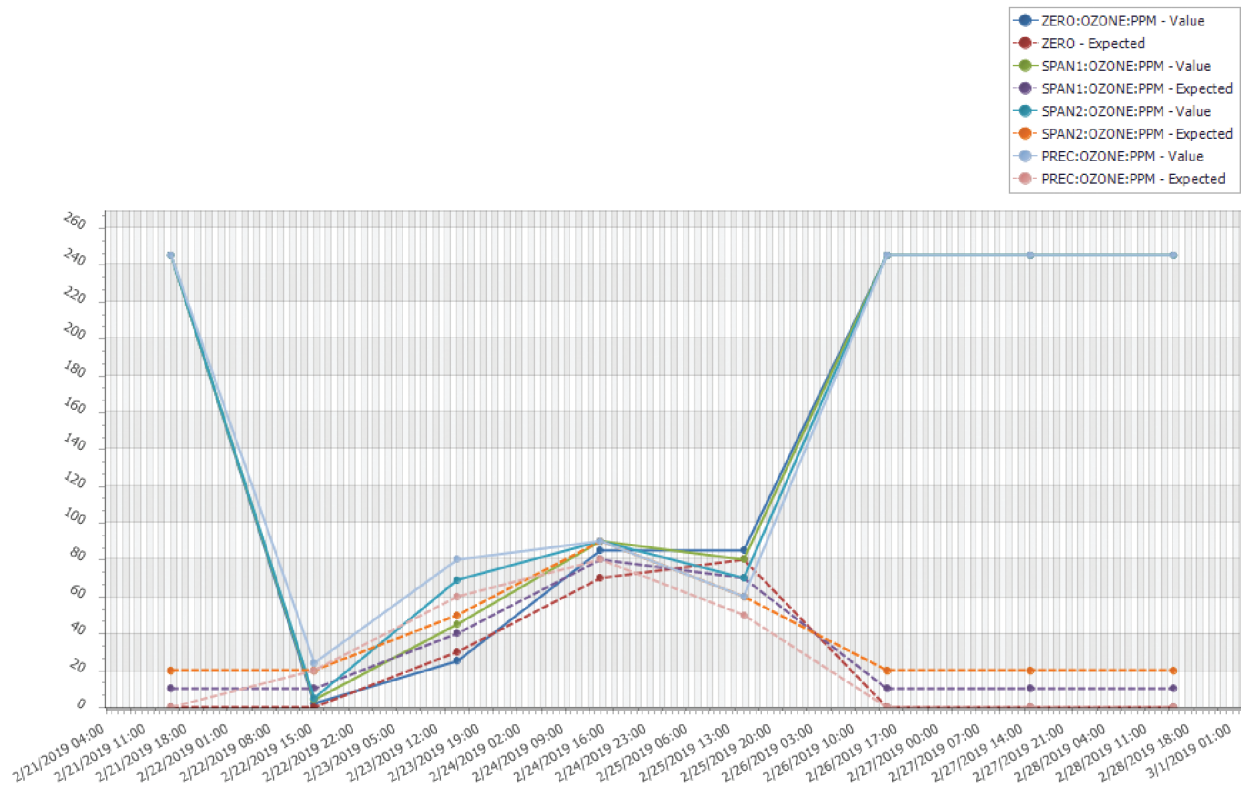
Calibration Graph Report

This report provides a historical trend of calibration results. Only one site and calibration program can be selected. If warning or drift limits are configured in the calibration, they will be displayed as dashed lines.

Current Date: 2/28/2019 4:25 PM

Calibration Graph Report

Site: SITEONE
 Source: SITEONE
 Sequence: AUTOCAL



Calibration Results

Calibration reports show the calibration event and results for any zero/span, precision check, or other calibration program.

Date Printed: 01/31/2019 04:02

Calibration Report

30-Jun-2018

<u>Site</u>	<u>Parameter</u>	<u>Sequence</u>	<u>Phase</u>	<u>Start Time</u>	<u>End Time</u>	<u>Value</u>		<u>Expected Value</u>	<u>Error</u>	<u>Drift Warning Limit</u>
SITEONE	CO	COCAL	Zero	30-Jun-2018 05:00:00	05:05:00	1.2	*	0	1.23	
			Span1	30-Jun-2018 05:00:00	05:10:00	1.2	*	10	-8.78	
			Span2	30-Jun-2018 05:00:00	05:15:00	1.2	*	20	-18.76	

* - Drift limit exceeded

** - Out of control limit exceeded

The percentage of error is calculated as follows:

- ◆ If the **Cal Span** has not been set in the **Parameter Editor**, zero error is shown as an absolute difference, while span precision errors are shown as a % of the expected value.
- ◆ If the Cal Span has been set in the **Parameter Editor** the errors are all shown as a % of the **Cal Span** value.
- **Note:** There are some internal options available to control the rounding/truncation logic for expected values. Contact support@agilaire.com if the % error is not showing the desired result.

Calibration Trend Graph

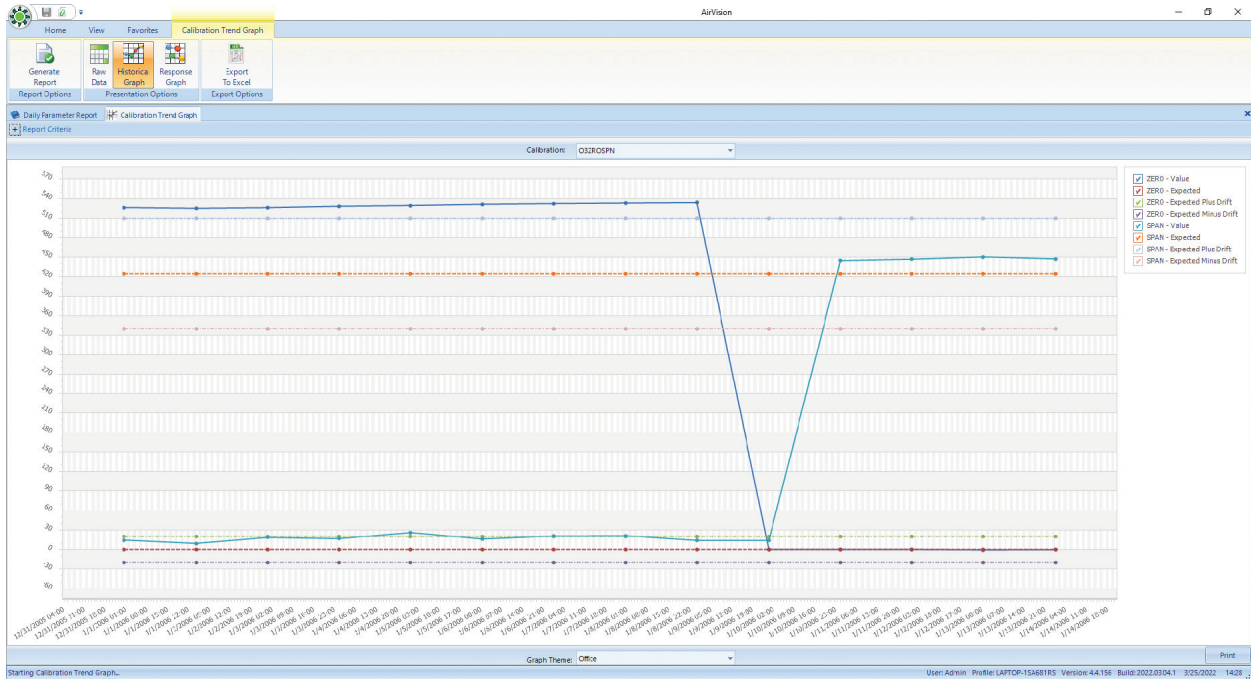
Calibration Trend Graphs provide an interactive, long-term view of calibration zero/span results over a user-defined period of time (month, quarter, etc). Select a **Start and End Date** and a **Parameter**. Click the **Generate Report** icon on the ribbon.

If you select **Raw Data Graph** from the ribbon at the top of the screen, you can view calibration data in a text table.

Calibration Trend Graph										
+ Report Criteria										
Drag a column header here to group by that column										
Site	Parameter	Source	Calibration	Phase Number	Phase Name	Start Date	EndDate	Expected Value	Value	Difference
SITEONE	OZONE	SITEONE	AUTOCAL	1	ZERO	6/6/2018 3:05 PM	6/6/2018 3:06 PM	0	33.3672294	33.3672294
SITEONE	OZONE	SITEONE	AUTOCAL	2	SPAN1	6/6/2018 3:05 PM	6/6/2018 3:07 PM	10	33.369358	23.369358
SITEONE	OZONE	SITEONE	AUTOCAL	3	SPAN2	6/6/2018 3:05 PM	6/6/2018 3:08 PM	20	33.3514022	13.3514022
SITEONE	OZONE	SITEONE	AUTOCAL	4	PREC	6/6/2018 3:05 PM	6/6/2018 3:08 PM	0	33.3645973	33.3645973
SITEONE	OZONE	SITEONE	AUTOCAL	1	ZERO	6/7/2018 3:05 PM	6/7/2018 3:06 PM	0	33.3582305	33.3582305
SITEONE	OZONE	SITEONE	AUTOCAL	2	SPAN1	6/7/2018 3:05 PM	6/7/2018 3:07 PM	10	33.3814964	23.3814964
SITEONE	OZONE	SITEONE	AUTOCAL	3	SPAN2	6/7/2018 3:05 PM	6/7/2018 3:08 PM	20	33.3682975	13.3682975
SITEONE	OZONE	SITEONE	AUTOCAL	4	PREC	6/7/2018 3:05 PM	6/7/2018 3:08 PM	0	33.3656425	33.3656425
SITEONE	OZONE	SITEONE	AUTOCAL	1	ZERO	6/8/2018 3:05 PM	6/8/2018 3:06 PM	0	33.376213	33.376213
SITEONE	OZONE	SITEONE	AUTOCAL	2	SPAN1	6/8/2018 3:05 PM	6/8/2018 3:07 PM	10	33.3661766	23.3661766
SITEONE	OZONE	SITEONE	AUTOCAL	3	SPAN2	6/8/2018 3:05 PM	6/8/2018 3:08 PM	20	33.3867874	13.3867874
SITEONE	OZONE	SITEONE	AUTOCAL	4	PREC	6/8/2018 3:05 PM	6/8/2018 3:08 PM	0	33.349266	33.349266
SITEONE	OZONE	SITEONE	AUTOCAL	1	ZERO	6/9/2018 3:05 PM	6/9/2018 3:06 PM	0	33.366085	33.366085
SITEONE	OZONE	SITEONE	AUTOCAL	2	SPAN1	6/9/2018 3:05 PM	6/9/2018 3:07 PM	10	33.3523368	23.3523368
SITEONE	OZONE	SITEONE	AUTOCAL	3	SPAN2	6/9/2018 3:05 PM	6/9/2018 3:08 PM	20	33.3676643	13.3676643
SITEONE	OZONE	SITEONE	AUTOCAL	4	PREC	6/9/2018 3:05 PM	6/9/2018 3:08 PM	0	33.3782424	33.3782424
SITEONE	OZONE	SITEONE	AUTOCAL	1	ZERO	6/10/2018 3:05 PM	6/10/2018 3:06 PM	0	33.3740196	33.3740196
SITEONE	OZONE	SITEONE	AUTOCAL	2	SPAN1	6/10/2018 3:05 PM	6/10/2018 3:07 PM	10	33.3787765	23.3787765
SITEONE	OZONE	SITEONE	AUTOCAL	3	SPAN2	6/10/2018 3:05 PM	6/10/2018 3:08 PM	20	33.3602752	13.3602752
SITEONE	OZONE	SITEONE	AUTOCAL	4	PREC	6/10/2018 3:05 PM	6/10/2018 3:08 PM	0	33.3766632	33.3766632
SITEONE	OZONE	SITEONE	AUTOCAL	1	ZERO	6/11/2018 3:05 PM	6/11/2018 3:06 PM	0	33.3661651	33.3661651
SITEONE	OZONE	SITEONE	AUTOCAL	2	SPAN1	6/11/2018 3:05 PM	6/11/2018 3:07 PM	10	33.3899536	23.3899536
SITEONE	OZONE	SITEONE	AUTOCAL	3	SPAN2	6/11/2018 3:05 PM	6/11/2018 3:08 PM	20	33.3820266	13.3820266
SITEONE	OZONE	SITEONE	AUTOCAL	4	PREC	6/11/2018 3:05 PM	6/11/2018 3:08 PM	0	33.3867797	33.3867797
SITEONE	OZONE	SITEONE	AUTOCAL	1	ZERO	6/12/2018 3:05 PM	6/12/2018 3:06 PM	0	33.3704032	33.3704032
SITEONE	OZONE	SITEONE	AUTOCAL	2	SPAN1	6/12/2018 3:05 PM	6/12/2018 3:07 PM	10	33.3730392	23.3730392
SITEONE	OZONE	SITEONE	AUTOCAL	3	SPAN2	6/12/2018 3:05 PM	6/12/2018 3:08 PM	20	33.3730278	13.3730278
SITEONE	OZONE	SITEONE	AUTOCAL	4	PREC	6/12/2018 3:05 PM	6/12/2018 3:08 PM	0	33.3614196	33.3614196
SITEONE	OZONE	SITEONE	AUTOCAL	1	ZERO	6/13/2018 3:05 PM	6/13/2018 3:06 PM	0	33.3635215	33.3635215
SITEONE	OZONE	SITEONE	AUTOCAL	2	SPAN1	6/13/2018 3:05 PM	6/13/2018 3:07 PM	10	33.3592987	23.3592987
SITEONE	OZONE	SITEONE	AUTOCAL	3	SPAN2	6/13/2018 3:05 PM	6/13/2018 3:08 PM	20	33.3687934	13.3687934

Raw Data

If you select **Historical Graph** you can view data in a graph. Each color represents a different phase, as shown in the legend. You can change the color scheme by selecting a **Graph Scheme** from the drop down list at the bottom of the screen.



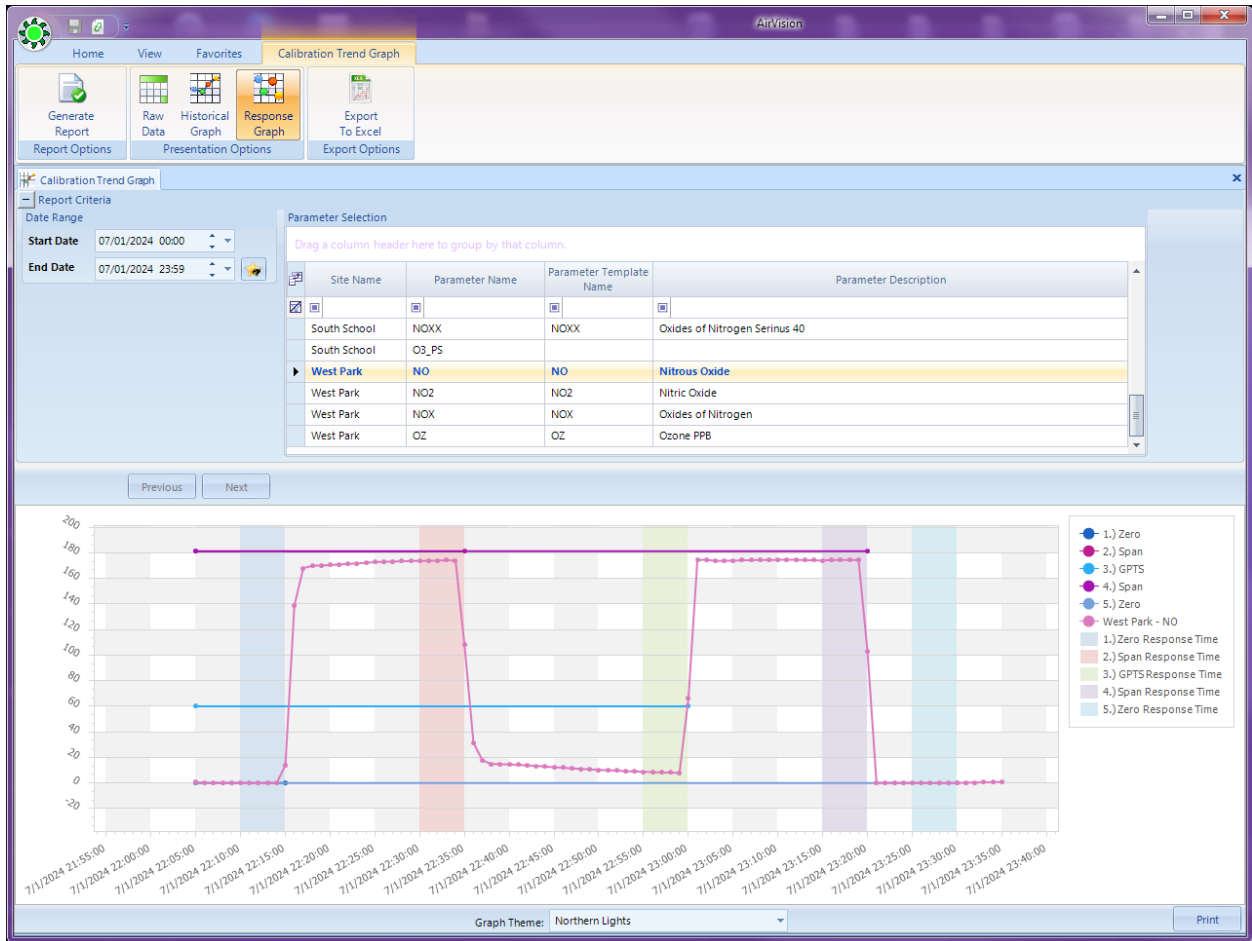
Historical Calibration Trend Graph

If you select **Response Graph** from the ribbon at the top of the screen, you can review fine-resolution data during each calibration cycle to see instrument response. This feature requires 1-minute data to be available for the calibration period. Each cal can be cycled through using the **Forward/Back** button. You can change the color scheme by selecting a **Graph Scheme** from the drop down list at the bottom of the screen.

The graph has a filter at the top to define the specific calibration program to be graphed, in the event that a parameter has more than one calibration program associated with it. The Response Graph option includes shaded color coded areas to indicate the response time period for each cal phase.

Additional Options can be added to the report.

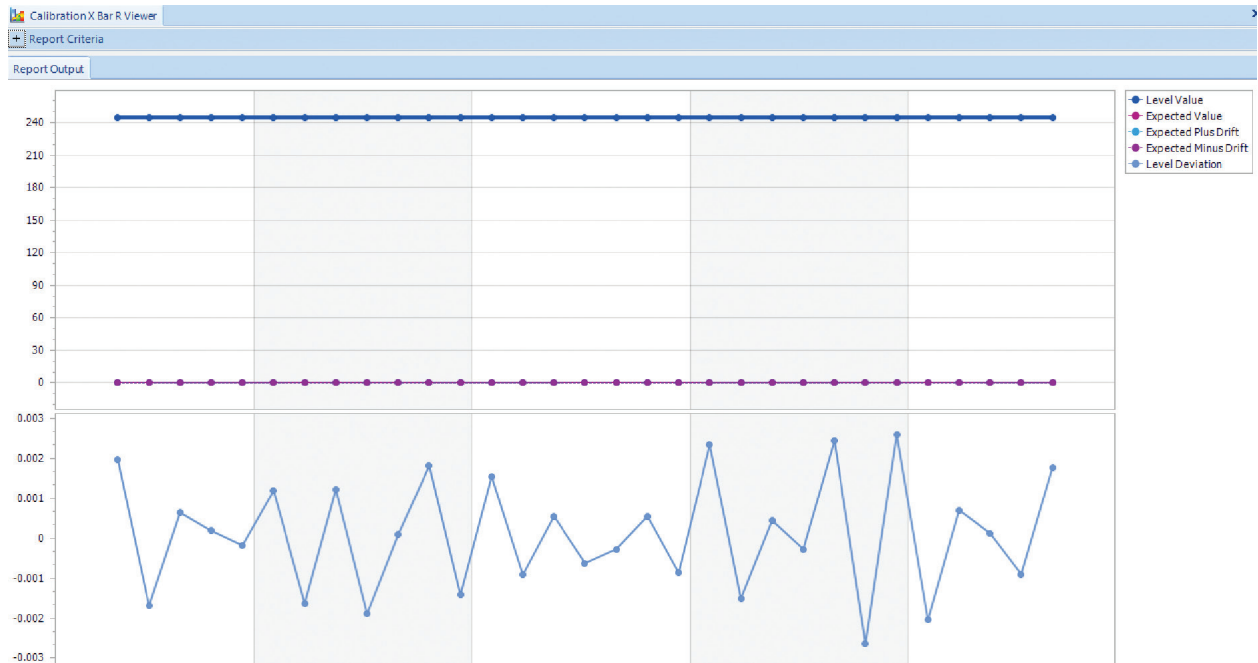
- ◆ **Show Null Codes**, which adds a second column beside of the data column that shows the null codes.
- ◆ **Show Invalid Values**, which fills the data in where the blank space would have been.
- ◆ **Show Seconds**, which includes the seconds in the data time stamp in the Date column.



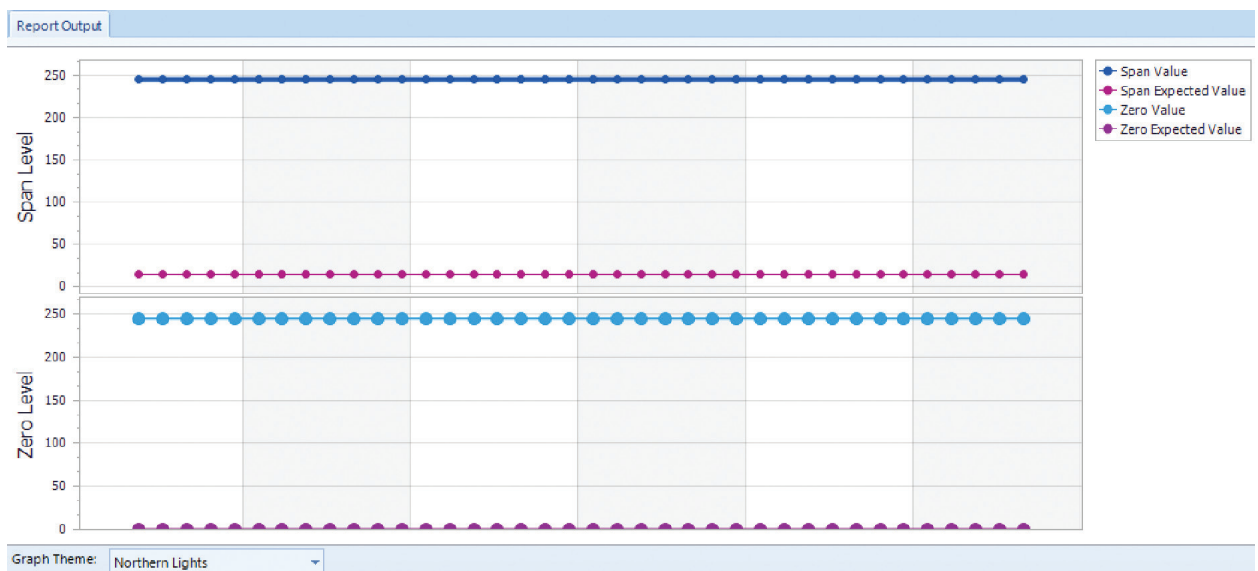
Calibration Trend Response Graph

Calibration X-Bar-R Chart

This chart provides a detailed review of a particular phase (e.g., zero, span, precision) for a particular parameter over time. The top chart shows the measured response and expected / reference value for each calibration event. If drift limits have been set, those bounds are shown as well. The bottom chart shows the value of the drift (difference) from one cal event to the next.



Calibration Zero/Span Graph Viewer



Multi Phase Cal Report

The Multi-Phase Cal Report in AirVision provides detailed information from a (generally) 5-point quarterly check, including slope and intercept data from regression.

Analyzer Model/Serial # T400/77342	Site Name and Sequence Name 01_KNOX O3MULTI	Report Date 25-Mar-2022	Calibration Date 03-Oct-2013 06:00
---------------------------------------	---	----------------------------	---------------------------------------

Diagnostics	Pre	Post
O3FLOW	0.704	0.704
O3PRESS	26.85	26.56
O3BENCHIT	28	28

	Photo Display	Expected	Response	Delta	% Error	>2%
ZERO		0	-1.122	-1.122		
20%PRCSN		100	98.623	-1.376	1.38	
20%PRCSN		200	198.722	-1.277	.64	
50%PRCSN		300	271.822	-28.177	9.39	**
80%PRCSN		400	401	1	.25	

COMMENTS

Sample Filter Changed? []Yes []No	Slope:	<input type="text" value=".9975"/>	FSP Cert Data
Sample Line Changed? []Yes []No	Intercept:	<input type="text" value="-1.1223"/>	Slope:
	Correl Coeff:	<input type="text" value="1.0000"/>	Intercept:

Note that the Y/N fields, the FSP cert data fields, and comments are not entered from any AirVision data, they are just blank spaces in the printed report for hand notes.

Configuration Requirements

The calibration must have phases (and calibration data) with levels of either of the two following combinations:

- ZERO, SPAN, PREC or
- ZERO, 20%, 40%, 60%, 80%

For diagnostic parameters to appear, they must have the primary calibration (report selected) parameter as a “Parent Parameter” in the Site/Parameter settings.

For the analyzer model and Serial Number to appear, the parameter must be tied to an Asset in the Asset Tracking system.

USEPA Zero Drift Report

This report shows zero drift calculated over the report period per USEPA guidance document (Lew Weinstock) in 2014/2015. Values in excess of the EPA defined limits is marked with a “*”.

Current Date: 1/31/2019 3:25 PM

Zero Drift Report

06/01/2018

Site	CO		OZONE	
	Last	14 Day	Last	14 Day
SITEONE	0	1.3 *	0	33.4*

* - Drift Limit Exceeded

Converter Efficiency Span and Precision Reports

These reports come in two groupings:

- NO2 converter efficiency calculation vs NOy converter efficiency calculation
- SPAN vs. PREC (Precision)

Thus, there are four reports to handle the combinations, although the calculations are much the same.

The required configuration for the report to run is as follows:

1. Calibration sequence must have levels for ZERO, SPAN (or PREC), and PREC_GPT or SPAN_GPT (matching the SPAN or PREC level)
2. Parameters must have parameter templates NO and NO2 or NOY.
3. NOX is not required, but can be present. It is not used in the calculations.

Date Printed: 08/07/2019 12:49

Converter Efficiency Span Report

SITEONE

Date	NO Input	Span				Zero			Corrected Span Response		GPT			Corrected GPT Response		Cal Diff Input	Diff Delta %	Converter Efficiency %
		NO Resp.	% Diff	NOy Resp.	% Diff	NO Resp.	NOy Resp.	Diff Resp.	NO	NOy	NO Resp.	Diff Resp.	NOy Resp.	NO	NOy			
08/06/19 00:00	20	20	0	20	0	0	0	20	20	30	0	30	30	30	-10	-100	0	

Statistical Reports

Concentration Distribution Report

The **Concentration Distribution reports** show the number of readings that fall into user-defined concentration ranges. The user defines the concentration ranges for each parameter type in the **Configuration Editors> Report Configurations > Frequency Distribution**.

Current Date : 6/21/2009															
Current Time : 12:05 AM															
Concentration Distribution Report															
Parameter: OZONE		Avg Interval: 001h				Maximum Samples: 9363									
<u>Site</u>	<u>Samples</u>	<u>Min.</u>	<u>310</u>	<u>320</u>	<u>330</u>	<u>340</u>	<u>350</u>	<u>360</u>	<u>370</u>	<u>380</u>	<u>>390</u>	<u>Max.</u>	<u>Arith. Mean</u>	<u>Geo. Mean</u>	<u>Geo. Dev.</u>
SITEONE	9363	- 1179.3	8588	0	0	8	0	0	0	0	767	505.5	18.5	32.8	7.6

Data Analysis

This report allows for ad-hoc report generation and data filtering/grouping. See the referred application note on the website under www.agilaire.com/application-notes or in the "Appendix" section of this manual.

Report Output						
Drop Filter Fields Here						
Report Value (Average)		Site ▲	Parameter ▲			
		▼ SITEONE				SITEONE Total
Interval ▲	Date ▲	NO	NO2	NOX	OZONE	
▼ 001h	7/1/2018 00:00:00	6.21	1.208	0.544	33.3	10.3155
	7/1/2018 01:00:00	6.035	1.205	0.551	33.3	10.27275
	7/1/2018 02:00:00	5.975	1.204	0.553	33.3	10.258
	7/1/2018 03:00:00	5.998	1.198	0.552	33.3	10.262
	7/1/2018 04:00:00	5.975	1.199	0.554	33.3	10.257
	7/1/2018 05:00:00	6.001	1.199	0.553	33.3	10.26325
	7/1/2018 06:00:00	5.988	1.2	0.553	33.3	10.26025
	7/1/2018 07:00:00	6.163	1.202	0.541	33.3	10.3015
	7/1/2018 08:00:00	6.015	1.193	0.548	33.3	10.264
	7/1/2018 09:00:00	6.099	1.202	0.547	33.3	10.287
	7/1/2018 10:00:00	6.006	1.199	0.552	33.3	10.26425
	7/1/2018 11:00:00	5.974	1.2	0.553	33.3	10.25675
	7/1/2018 12:00:00	6.028	1.2	0.552	33.3	10.27
	7/1/2018 13:00:00	6.084	1.202	0.549	33.3	10.28375
	7/1/2018 14:00:00	6.201	1.203	0.543	33.3	10.31175
	7/1/2018 15:00:00	6.16	1.2	0.547		2.635667
	7/1/2018 16:00:00	6.168	1.204	0.546	33.3	10.3045
	7/1/2018 17:00:00	6.09	1.201	0.548	33.3	10.28475
	7/1/2018 18:00:00	6.074	1.203	0.548	33.3	10.28125
	7/1/2018 19:00:00	6.075	1.197	0.548	33.3	10.28
7/1/2018 20:00:00	6.281	1.202	0.539	33.3	10.3305	
7/1/2018 21:00:00	6.223	1.208	0.542	33.3	10.31825	
7/1/2018 22:00:00	6.132	1.206	0.548	33.3	10.2965	
7/1/2018 23:00:00	6.136	1.206	0.55	33.3	10.298	
001h Total		6.087125	1.201708	0.548375	33.3	10.042032

Data Completeness Report

Current Date : 3/25/2022
 Current Time : 2:48 PM


Quarterly Data Completeness Report

01-Jan-2006 - 31-Dec-2006

Site: 01_KNOX

Parameter: PM25LC

Month	% Days of Month Meeting 75% Data Capture	Note
January	96	
February	82	
March	3	data capture not met
Data capture met for the quarter		no
April	0	data capture not met
May	0	data capture not met
June	0	data capture not met
Data capture met for the quarter		no
July	0	data capture not met
August	0	data capture not met
September	0	data capture not met
Data capture met for the quarter		no
October	0	data capture not met
November	0	data capture not met
December	0	data capture not met
Data capture met for the quarter		no
Did the year have four valid quarters?		no

Current Date : 3/25/2022
 Current Time : 2:48 PM


Quarterly Data Completeness Report

01-Jan-2006 - 31-Dec-2006

Site: 01_KNOX

Parameter: 01_O3

Month	% Days of Month Meeting 75% Data Capture	Note
January	100	
February	96	
March	12	data capture not met
Data capture met for the quarter		no
April	6	data capture not met
May	100	
June	100	
Data capture met for the quarter		no
July	100	
August	96	
September	100	
Data capture met for the quarter		yes
October	96	
November	100	
December	100	
Data capture met for the quarter		yes
Did the year have four valid quarters?		no

Data Recovery Report

The **Data Recovery report** provides a summary, by site, of each parameter and its rate of successful data capture, which allows you to summarize the reliability of the monitoring network. The **Percent Recovery** is a calculated by the number of valid averages divided by the number of possible averages in the reporting period.

Current Time: 8/12/2009 4:24:19 PM

Average Interval: 001h

Data Recovery Report

Site Name: SITEONE						
Parameter Name	Valid Average Scans	Valid Calibration Scans	Total Valid Scans	Total Scans In Period	Percent Recovery	
OZONE	1833	0	1833	8784	20.87	
Total:	1833	0	1833	8784	20.87	%

Frequency Distribution Report

The **Frequency Distribution Report** provides a breakdown of concentration values that represent the Nth percentile of a requested data set. In the example, the 95th percentile for ozone for the given time period was 46 ppb, meaning that 95% of the ozone readings were at or below 46 ppb. The report also lists minimum, maximum, means, and deviation. The report requires that percentile ranges be set up previously for a given Parameter Template (**Configuration Editors > Report Configurations > Frequency Distribution**). The report cannot be run on a parameter that does not have a Parameter template and a Frequency Distribution report configuration.

```

Current Date : 9/21/2009
Current Time : 5:04 PM

Frequency Distribution Report


Parameter: OZONE          Avg Interval: 001h          Maximum Samples: 96

Site      Samples  Min.  10   20   30   50   90   95   98   99   100  Max.  Arch.  Geo.  Geo.
         Samples  Mean  Mean Mean Mean Mean Mean Mean Mean Mean Mean Mean Mean Mean Mean Dev.
SITEONE   96    0.010 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.01 0.010 0.010 0.010 1.000
    
```


Network Data Recovery Report

This report shows an overall "all in one page" view of data capture/availability for the entire system. Unlike the Data Recovery Report, it will only show parameters that have a parameter template assigned to them (which allows the report to group them). Summary statistics for each parameter template group are shown at the bottom.

Current Time: 3/25/2022 14:49



Network Data Recovery Report
01-Sep-2015 - 30-Sep-2015

Site		AMBTMP	BARPRESS	SOLARRAD	SWDR	SWSP	VWDR	VWSP
01_KNOX	43.33%	43.33%	43.33%	41.25%			43.33%	38.75%
BLOUNT		33.33%						
BLOUNT2		33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%
BLOUNT3		33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%
Brentwood_Core		33.33%	28.33%	33.33%	33.33%	33.33%	33.33%	33.33%
CUMBERLAND		33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	27.92%
ROANE		33.33%	33.33%	33.33%	33.33%	33.33%	33.33%	33.33%
AVERAGE	43.33%	34.44%	34.05%	34.65%	33.33%	33.33%	35.00%	33.33%

Statistical Reports

Statistical reports provide statistics for any defined time range, as well as a comparison against previous years of the same parameter and date/time range, with calculated ratios. This report is similar to the Statistical functions in the Data Editor and used to identify data that lies outside the norm.

Current Time: 5/7/2009 5:07:27 PM

Statistical Report

Site: SITEONE **Parameter:** OZONE **Interval:** 001h

Statistics	Minimum	Maximum	Average	Mean	Count	Valid
Period	0	0	0	0	0	0
History	43	77	58.5833	51.6155	72	72
Ratio	0	0	0	0	0%	0%

AIRNow Reports

AIRNow AQSCSV Report

The **AirNow AQSCV Report** supports the proposed changes for submission of data to AirNow. The format requires a 3-digit County Code, which can be set in the **System Configuration** screen in **Configuration Editors>Site/Parameter Editor**. After all fields in the System Configuration editor have been configured, the AQSCV report can be run, scheduled, and transmitted, just like the OBS-style AirNow report.

A **Transfer Now** button is provided to test the AirNow transmission, or to send manual updates to the AirNow server.

Report Output
840470931025,0,0,20180601T0000-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T0100-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T0200-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T0300-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T0400-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T0500-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T0600-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T0700-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T0800-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T0900-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1000-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1100-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1200-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1300-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1400-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1500-0500,44201,60,,33.4,007,9,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1600-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1700-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1800-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T1900-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T2000-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T2100-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T2200-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180601T2300-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180602T0000-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,
840470931025,0,0,20180602T0100-0500,44201,60,,33.4,007,0,1,33.275986,-111.96069,WGS84,,,,,

AQSCV Report (AirNow CSV Report)

AQS XML 2.2 Report / XML 3.0 Report

AQS XML Reports provide formatted data for transmission to USEPA in AQS XML format. You have the option to select which Record Types you want to run: **Average Data Record**, **Sample Data Record**, **Precision Data Records**, and **Accuracy Data Records**. Also, calibration records that have been marked with the PREC phase type can also be generated as RP records if the **Calibration Precision Records** checkbox is selected.

```

Report Output:
--<AirQualitySubmissionn1:Version="3.0" xsi:schemaLocation="http://www.exchangenetwork.net/schema/AQS/Submission/3
http://www.epa.gov/ttn/airs/airsaqs/XML/Submission/3/0/EN_AQS_AirQualitySubmission_v3.0.xsd">
  <FileGenerationPurposeCode>AQS</FileGenerationPurposeCode>
  <FileGenerationDateTime>2018-07-26T12:39:30.8313592-04:00</FileGenerationDateTime>
--<FacilitySiteList>
  --<SiteIdentifierDetails>
    <StateCode>47</StateCode>
    <CountyCode>093</CountyCode>
    <FacilitySiteIdentifier>7001</FacilitySiteIdentifier>
  </SiteIdentifierDetails>
  --<MonitorList>
    --<MonitorIdentifierDetails>
      <SubstanceIdentifier>44201</SubstanceIdentifier>
      <SubstanceOccurrenceCode>1</SubstanceOccurrenceCode>
    </MonitorIdentifierDetails>
  --<RawDataList>
    --<TransactionProtocolDetails>
      <DurationCode>1</DurationCode>
      <MethodIdentifierCode>321</MethodIdentifierCode>
      <MeasureUnitCode>007</MeasureUnitCode>
    </TransactionProtocolDetails>

```

AQS XML Report

For the AQS XML 3.0 Reports, the PREC records are reported as "1-Point QC Check" QA transactions.

USEPA Reports

Precision Reporting for Gases

AirVision has the capability to generate precision (RP) or 1-Point QC (XML 3.0) records for calibrations that have been marked in the calibration record as a precision point. To accomplish this, a new field has been added to the Calibration Phase configuration and in the Calibration Data database to denote precision records.

To use this feature, use **Data Source Details->Logger->Calibrations->Phase**, and use the **PhaseType** field on the far right to denote the phase as a PREC phase. Other phases can be marked as ZERO, SPAN, etc if desired.

This will allow AirVision to mark future calibration records as precision points in the database. It will not affect older calibration records that have already been collected. However, those records can be adjusted using **Editors->Calibration Data**.

This function can also be used to ‘unmark’ or ‘invalidate’ bad precision runs so they are not reported in AQS.

Once collected and marked as PREC records, the AQS Reports (Text or XML) can be used to generate the desired records:

The screenshot shows the 'Sequence: COCAL' configuration window. It contains two main tables: 'Phases' and 'Phase Channels'.

Phases Table:

Phase Name	Phase Number	Duration Time	Response Time	Enabled	Status Pattern	Level
Zero	1	005M	001M	<input checked="" type="checkbox"/>	Select Lines	
Span1	2	005M	001M	<input checked="" type="checkbox"/>	Select Lines	
Span2	3	005M	001M	<input checked="" type="checkbox"/>	Select Lines	

Phase Channels Table:

Channel	Expected Value	Expected Value From Constant	Write Expected Value To Constant	Write Result To Constant	Store Calibration Results	Error Method	Warning Drift Limit	Out of Control Limit	StartDate	EndDate
CO	0				<input checked="" type="checkbox"/>	Difference	0	0		

AQI Reports

AQI Levels Report

The AQI Levels report gives a count of how many days the AQI was in each category range during the report period. It provides a site by site breakdown as well as a network total. The network days are based on the highest AQI category for each day across all sites.

Current Date : 5/30/2014
 Current Time : 6:51 AM

AQI Levels Report

Highest daily AQI levels for the period 01-May-2014 00:00 to 30-May-2014 23:00

Total Days

Site Name	Good	Moderate	USG	Unhealthy	Very unhealthy	Hazardous
SITEONE	4	0	21	0	0	0
SITETHREE	8	1	20	1	0	0
SITETWO	7	0	23	0	0	0
Network	0	0	30	0	0	0

AQI Monthly Group Report

Report Criteria

Date Range
 Start Date: 01/07/2012 00:00
 End Date: 01/07/2012 23:59

Site Selection
 Drag a column header here to group by that column.

Site Name	Site Description
G1	G1
H1	H1
H2	H2

Report Output

Current Date: 01/07/2014 2:30 PM

AQI Monthly Group Report
 January 2012

Sites: H2

Hours

Day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Highest Daily AQI	
07	42	44	44	46	46	46	48	48	48	46	48	48	50	52	54	58	60	62	62	60	58	56	52	50	62	O3 [8h]
Max	42	44	44	46	46	46	48	48	48	46	48	48	50	52	54	58	60	62	62	60	58	56	52	50	62	O3 [8h]

This report is like the AQI Monthly Report, except multiple sites are used to create a single monthly report, with the highest value for all selected sites used for each hour.

AQI Report -- Current

The **AQI Current report** provides the current Air Quality Index (AQI) for any defined date/hour for the defined site(s). It can be run for eah hour of the day and provides the highest level of detail of all AQI reports.

Current Date : 3/11/2009
 Current Time : 2:45 PM

Air Quality Index Report

Report period consists of 1-hour period beginning on 10/1/2007 at 00:00

Site	Ozone1h (1)		Ozone8h (8)	
	PPB		PPB	
	Avg	Index	Avg	Index
SITEONE	59	105	59.25	52

Highest AQI:

Critical Area : CLINGMAN	Critical Subindex : 105
Critical Pollutant : Ozone1h (1)	Descriptor : Unhealthy for Sensitive Groups

< - Less than 75% of averages available
 N/A - AQI is not applicable for this value

AQI Monthly Report

This report provides a Monthly Report format of AQI values, with each site listed as a separate page. Each cell is color coded based on the AQI program settings.

Current Date: 1/30/2019 4:42 PM		AQI Monthly Group Report																														
		June 2018																														
Sites: SITEONE		Hours																														
Day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	Highest Daily AQI							
																										Peak	Pollutant	Site				
01	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE			
02	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	104	104	104	104	104	105	105	105	N02	SITEONE			
03	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	105	N02	SITEONE		
04	104	104	104	104	104	104	104	104	104	104	104	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE		
05	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE		
06	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE		
07	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE		
08	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE		
09	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	104	104	104	104	104	104	104	104	105	N02	SITEONE		
10	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	105	N02	SITEONE	
11	104	104	104	104	104	104	104	104	104	104	104	104	104	104	104	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
12	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
13	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
14	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
15	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
16	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
17	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
18	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
19	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
20	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE	
21	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
22	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
23	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
24	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
25	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
26	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
27	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
28	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
29	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
30	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE
Max	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	105	N02	SITEONE

AQI Report -- Standard

The **AQI Standard report** provides the current Air Quality Index (AQI) for any defined calendar day for the selected site(s).

Current Date : 10/8/2010
 Current Time : 4:39 PM

Air Quality Index Report

Report period consists of 24-hour period ending on 10/1/2010 at midnight

Site	CO (8)		NO2 (1)		OzonePPM* (8)	
	Avg	Index	Avg	Index	Avg	Index
Agilaire	3.5	40	0	N/A	0.005	4

Highest AQI:

Critical Area : Agilaire	Critical Subindex : 40
Critical Pollutant : CO (8)	Descriptor : Good

< - Less than 75% of averages available
 N/A - AQI is not applicable for this value

Voice AQI Report

The screenshot shows the 'Voice AQI Report' software interface. It includes a 'Report Criteria' section with date range (01/01/2012 00:00 to 01/01/2012 23:59) and an 'Average Interval' table. The 'Parameter Selection' table is also visible, showing columns for Site Name, Parameter Name, and Parameter Template Name.

Average Interval	Description
008H	008H
005m	5 minute average from 5 minutes
006m	6 minute average from 6 minutes
010m	10 Minute Average from 10 Minutes
015m	15 minute average from 15 minutes
001h	Hourly average of 60 minutes

Site Name	Parameter Name	Parameter Template Name
H1	STN_WS	STN_WS
H2	O3 [8h]	OZONE_8HR
H2	O3 [ppb]	OZONE_PPB
H2	O3 [ppm]	OZONE
H2	O3 BOX TEMP	O3 BOX TEMP
H2	O3 GEN	O3 GEN
H2	O3 GEN LAMP TEMP	O3 GEN LAMP TEMP

Report Output Report Errors

0107201413 0107201414 01 ALL

Asset Reports (Optional, with Asset Tracking Module)

Asset Export Report

This report provides a list of all ASSETS selected, in a format most suitable for import to Excel, etc.

Current Date: 3/5/2019 11:30 AM

Asset Export Report								
Site	Parameter	Logger Name	Mfr/Model	S/N:	Tag	In Service	Out of Service	
			Agilaire	8832	12345	test	07/02/2013	11/25/2015
SITEONE		SITEONE	Agilaire	8832	12345	test	11/25/2015	
SITEONE		EBAM	MetOne	EBAM	A73245	Wind	07/02/2013	
SITETWO		SiteTwo	Agilaire	8832			11/25/2015	

Asset History Report

This report uses data from the Optional Asset Tracking Module (Chapter 3) and tracks the historical location of selected assets as they move from site to site. (One page per asset.)

Current Date: 1/30/2019 3:45 PM

Asset History Report			
Mfr/Model:	Agilaire	8832	
S/N:	12345		
Tag:	test		
Purchased:	07/02/2009		
Status:	Active		
History:	<u>Site</u>	<u>Starting</u>	<u>Ending</u>
		07/02/2013	11/25/2015
	SITEONE	11/25/2015	

Asset Reports (Optional, with Asset Tracking Module)

Parameter Asset History Report

This report tracks the history of which assets (analyzers) have been used for the selected parameters at a particular site. One page per site/parameter.

Site: 01_KNOX
Parameter: 01_O3

<u>History:</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Serial #</u>	<u>Starting</u>	<u>Ending</u>
	API	T400	77342	10/01/2013	10/08/2013
	API	T400	77342	10/08/2013	11/12/2013
	API	400E	2341	10/08/2013	11/12/2013
	Met One	BAM-1020 PM10	837593	11/19/2015	08/12/2016
	API	400E	2341	01/02/2018	

Configuration Reports

These reports provide output of current configuration settings (most important fields) for sites, parameters, channels, etc.

Analog Outputs Configuration Report

Analog Out Configuration Report

SITETWO

<u>Source Name</u>	<u>Logger Identifier</u>	<u>Channel Name</u>	<u>Dac Channel #</u>	<u>Interval Name</u>	<u>Action on Error</u>	<u>Low Input</u>	<u>High Input</u>	<u>Low Output</u>	<u>High Output</u>
SiteTwo	SC	NO	1	001h	I	10	1	100	0

Average Alarm Report

Average Alarm Report

SITEONE

<u>Parameter Name</u>	<u>Alarm Name</u>	<u>Alarm Type Name</u>	<u>Alarm Type Description</u>	<u>Priority Description</u>	<u>Flag</u>	<u>Alert on New Alarm</u>	<u>Alert on Return To Normal</u>	<u>Alert on Every Occurrence</u>
CO	CO high alarm	READING	Alarm Type Description	Normal	h	True	False	False

Calibration Alarm Configuration Report

Calibration Alarm Report

SITEONE

<u>Source Name</u>	<u>Calibration Name</u>	<u>Phase Name</u>	<u>Channel Name</u>	<u>Alarm Name</u>	<u>Auto Acknowledge Interval</u>	<u>Out of Control Limit</u>	<u>Drift Limit</u>	<u>Output Pattern</u>	<u>Alarm on Drift</u>	<u>Alarm on Out of Control</u>	<u>End on No Flag</u>
SITEONE	AUTOCAL	PREC	OZONE	Alarm1	000S	0	0	1	True	False	True
SITEONE	AUTOCAL	SPAN1	OZONE	Alarm1	000S	0	0	1	True	False	True
SITEONE	AUTOCAL	SPAN2	OZONE	Alarm1	000S	0	0	1	True	False	True
SITEONE	AUTOCAL	ZERO	OZONE	Alarm1	000S		3	1	True	False	True

Calibration Configuration Report

To run a Calibration **Configuration Report** (**Reports > Configuration folder > Calibration Configuration Report**), select a site or sites and click the **Generate Report** icon on the Ribbon.

Calibration Configuration Report SITEONE

<u>Calibration Name</u>	<u>Start Time</u>	<u>Repeat Interval</u>	<u>Recovery Time</u>	<u>Phase Name</u>	<u>Phase Number</u>	<u>Duration</u>	<u>Response Time</u>	<u>Status Pattern</u>	<u>Affected Channel</u>
AUTOCAL	06/18/13 15:05	001 d	005M	ZERO	1	001M	005S		OZONE
	06/18/13 15:05	001 d	005M	SPAN1	2	001M	005S		OZONE
	06/18/13 15:05	001 d	005M	SPAN2	3	001M	005S		OZONE
	06/18/13 15:05	001 d	005M	PREC	4	001M	005S		OZONE
COCAL	07/13/10 05:00	001D	005M	Zero	1	005M	001M		CO
	07/13/10 05:00	001D	005M	Span1	2	005M	001M		CO
	07/13/10 05:00	001D	005M	Span2	3	005M	001M		CO

Calibration Configuration Report (Reports > Configuration folder > Calibration Configuration Report)

Channel Configuration Report

To run a Channel Configuration Report (Reports > Configuration folder > Channel Configuration Report), select a Site or Sites and a Parameter Name or Parameter Names. Click the **Generate Report** icon on the Ribbon.

Channel Configuration Report

SITEONE

Parameter Name	Source Name	Logger ID	Channel #	Channel Name	Units	Type	Intervals			Storage			Analog Input		Input		Output		Hold Between Updates	Secondary Input Channel	Input Interval Name	Rolling Interval Name	General Value	
							Base	Ext 1	Ext 2	Base	Ext 1	Ext 2	Channel	Channel	High	Low	High	Low					Duration Interval	Storage Interval
							001m	015m	001h	2D	2H	7D	01	10	0	100	0	False						
OZONE	SITEONE	RD	1	OZONE	PPM	Analog In (Standard)	001m	015m	001h	2D	2H	7D	01	10	0	100	0	False						
CO	SITEONE	RD	5	CO	PPM	Analog In (Standard)	001m	015m	001h	1H	2H	5D	05	5	0	100	0	False						
NO	SITEONE	RD	6	NO	PPM	Analog In (Standard)	001m	015m	001h	1H	2H	5D	06	1	0	100	0	False						
NOX	SITEONE	RD	8	NOX	PPM	Analog In (Standard)	001m	015m	001h	1H	2H	5D	8	1	0	0	10	False						

Validation

SITEONE

Parameter Name	Channel #	Channel Name	High-High Alarm Limit			High Alarm Limit			Low Alarm Limit			Low-Low Alarm Limit			High ROC Alarm Limit			Low ROC Alarm Limit		
			Base	Ext 1	Ext 2	Base	Ext 1	Ext 2	Base	Ext 1	Ext 2	Base	Ext 1	Ext 2	Base	Ext 1	Ext 2	Base	Ext 1	Ext 2
OZONE	1	OZONE																		
CO	5	CO																		1.297
NO	6	NO																		100
NOX	8	NOX																		

Validation, Part 2

SITEONE

Parameter Name	Channel #	Channel Name	Floor Limit			Floor Value			Percent Valid			Ceiling Limit			Ceiling Value			Overwrite Math Constant		
			Base	Ext 1	Ext 2	Base	Ext 1	Ext 2	Base	Ext 1	Ext 2	Base	Ext 1	Ext 2	Base	Ext 1	Ext 2	Base	Ext 1	Ext 2
OZONE	1	OZONE																		
CO	5	CO																		
NO	6	NO																		
NOX	8	NOX																		

Channel Configuration Report (Reports > Configuration folder > Channel Configuration Report)

Channel Equation Report

Channel Equation Report

Site Name	Channel Number	Channel Name	Equation
SITEONE	20	Math pac	1+2+3=
SITEONE	24	AvgMath	K01=

Digital IO Configuration Report

Digital IO Configuration Report

SITEONE

<u>Source Name</u>	<u>IO Number</u>	<u>Input Type</u>	<u>Output Type</u>	<u>Line Name</u>	<u>Line Description</u>
Second logger	1	False	True	OutPut Line1	
Second logger	2	False	True	OutPut Line2	
Second logger	3	False	True	OutPut Line3	
Second logger	4	False	True	OutPut Line4	
Second logger	5	False	True	OutPut Line5	
Second logger	6	False	True	OutPut Line6	
Second logger	7	False	True	OutPut Line7	
Second logger	8	False	True	OutPut Line8	
Second logger	9	False	True	OutPut Line9	
Second logger	10	False	True	OutPut Line10	
Second logger	11	False	True	OutPut Line11	
Second logger	12	False	True	OutPut Line12	
Second logger	13	False	True	OutPut Line13	
Second logger	14	False	True	OutPut Line14	
Second logger	15	False	True	OutPut Line15	
Second logger	16	False	True	OutPut Line16	
Second logger	17	False	True	OutPut Line17	
Second logger	18	False	True	OutPut Line18	
Second logger	19	False	True	OutPut Line19	
Second logger	20	False	True	OutPut Line20	
Second logger	21	False	True	OutPut Line21	
Second logger	22	False	True	OutPut Line22	
Second logger	23	False	True	OutPut Line23	
Second logger	24	False	True	OutPut Line24	
Second logger	25	False	True	OutPut Line25	
Second logger	26	False	True	OutPut Line26	
Second logger	27	False	True	OutPut Line27	
Second logger	28	False	True	OutPut Line28	
Second logger	29	False	True	OutPut Line29	
Second logger	30	False	True	OutPut Line30	
Second logger	31	False	True	OutPut Line31	

GSI Configuration Report

GSI Configuration Report				
API_100E/T_AltGSI				
Modbus Port:				Supports Force Multiple Coils: True
Modbus Code:				Default Timeout Ms:
Modbus Command Type:				
<u>Entry Name</u>	<u>Entry Type</u>	<u>Autosend String</u>	<u>Autosend Repeat Interval</u>	<u>Parse Sync String</u>
SAMPFLOW	P	T 100 SAMPFLOWx0d	10s	100 SAMP FL=
SAMPPRESS	P	T 100 SAMPPRESSx0d	10s	100 SAMP=

GSI Entry Configuration, Part 2

API_100E/T_AltGSI

<u>Entry Name</u>	<u>Delimiter Characters</u>	<u>Number of Chars to Data</u>	<u>Number of Delimiters to Data</u>	<u>Number of Delimiters in String</u>	<u>Data Field Width</u>	<u>Data Field Type</u>	<u>Parse Chars In String</u>	<u>Digital IO String</u>	<u>GSI Send Name</u>	<u>GSI Parse Name</u>	<u>Modbus Register</u>	<u>Data Value Format</u>	<u>Input Index</u>
SAMPFLOW		0			4	F			ASO2SPFL	GSO2SMF	L		
SAMPPRESS		0			4	F			ASO2SMPR	GSO2SMP	R		

Logger Configuration Report

Logger Configuration Report

<u>Site Name</u>	<u>Source Name</u>	<u>Description</u>	<u>Id</u>	<u>Type</u>	<u>Debounce Digital Inputs</u>	<u>Met Cards</u>	<u>Analog Outputs</u>	<u>Analog Inputs</u>	<u>Digital Outputs</u>	<u>Digital Inputs</u>
SITEONE	SITEONE		01	1	False	1				
SITETHREE	SiteThree		03	1	False	1				
SITETWO	SiteTwo		02	1	False	1				

Math Equation Report

Central Equation Report

<u>Site Name</u>	<u>Parameter Name</u>	<u>Equation Name</u>	<u>Equation</u>
SITEONE	CO TRACE	COTRACE	CO TRACE * 10
SITEONE	Internal Math	internal math	(PM10_CONTIN)*(760/((BARPRESS*25.3971)*((RELHUM-32)*(5)/(9)+(273))/298))

Notification Configuration Reports

Notification Configuration Report

<u>Type</u>	<u>Name</u>	<u>User</u>	<u>Group</u>
ADVP Rules	Inside Temperature		Technicians
ADVP Rules	test ADVP		QA
Reports	AIRNowcsv		QA
Reports	Scheduled ReportTask		Technicians

Parameter Configuration Report

To run a **Parameter Configuration Report**, (Reports > Configuration folder > **Parameter Configuration Report**), select a **Site** or Sites and a **Parameter Name** or Parameters Names. Click the **Generate Report icon** on the Ribbon.

Parameter Configuration Report																		
SITEONE																		
<u>Name</u>	<u>Description</u>	<u>Template</u>	<u>Method</u>	<u>AQS Codes</u>			<u>Reported Digits</u>	<u>Prec.</u>	<u>Trunc. Rnd.</u>	<u>Units</u>	<u>Graph</u>		<u>Instrument Detection Limit</u>	<u>Totalize In Reports</u>	<u>Minimum In Reports</u>	<u>Report In Airflow</u>	<u>Enabled</u>	<u>POC</u>
				<u>Units</u>	<u>Parameter</u>	<u>Minimum</u>					<u>Maximum</u>							
NO	Nitrous Oxide	NO	456	007	42501	4	3	T	PPM	1	2		False	False	True	True	1	
NO2	Nitric Oxide	NO2	042	008	42502	4	3	T	PPB	0	500		False	False	True	True	1	
NOX	Oxides of Nitrogen	NOX	321	007	42503	4	3	T	PPM	0	500		True	False	True	True	1	

Parameter Configuration Report, (Reports > Configuration folder > Parameter Configuration Report)

Scheduled Tasks Report

To run a **Scheduled Tasks Report**, open **Reports > Configuration folder > Scheduled Tasks Report** and the report will be displayed automatically. No query is necessary.

Scheduled Tasks Report

Task Name	Description	Enabled	Start Time	Repeat Interval
Average Data Rollup Task	Average Data Rollup Task	False	1/31/2018 5:07:04 PM	6M
AIRNow FTP	AIRNow FTP Transfer Task	False	1/24/2011 11:06:09 AM	1H
Instrument Poll Task	Instrument Polling Task	False	10/3/2011 3:46:45 PM	1H
Task Group for Site One	Processes tasks contained in task group	True	3/11/2013 11:05:05 AM	1H
Hourly	Processes tasks contained in task group	True		
Hourly	Processes tasks contained in task group	True		
Hourly	Processes tasks contained in task group	True		
Hourly	Processes tasks contained in task group	True		
Hourly	Processes tasks contained in task group	True		
Hourly	Processes tasks contained in task group	True		
Hourly	Processes tasks contained in task group	True		
ADVP Rule Processing Task	ADVP Rule Processing Task	False	3/21/2013 3:08:05 PM	1H
AIRNow Report Task	Generates Report at assigned time for output	False	4/8/2015 10:59:58 AM	1H
Calculate Site Math Parameters	Calculate Math Parameters	False	4/23/2015 11:03:07 AM	1H
Average Data Purge minute	Average Data Purge Task	True	6/18/2012 11:10:59 PM	1D
Average Data Purge 5min	Average Data Purge Task	True	6/18/2012 11:12:58 PM	1D

Wednesday, January 30, 2019

Page 1 of 2

Scheduled Task Report (Reports > Configuration folder > Scheduled Tasks Report)

Site Configuration Report

To run a **Site Configuration Report**, (**Reports > Configuration folder > Site Configuration Report**), select a **Site** or **Sites** and click the **Generate Report icon** on the Ribbon.

Site Configuration Report

SITEONE:

Description:		Latitude:	33.2759 86
Abbreviation:		Longitude:	- 111.960 69
Address:	1904-B	Time Zone:	ET
City:	Knoxville	Agency Code:	TN8
County:	Knox	State Code:	47
Zip Code:	37918	CountyCode:	093
		Site Code:	7001

Site Configuration Report, (Reports > Configuration folder > Site Configuration Report)

Internal Reports

This report provides fine-level detail of configuration changes made to AirVision during the report period. It includes information on the value before and after the change, the time of the change, and the user name.

Audit Change Viewer

Report Output							
Drag a column header here to group by that column.							
Timestamp	Table Category	Table Name	Audit Action	Modified By	Column Name	Old Value	
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	CreatedBy		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	CreatedOn		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	EnableAirNowReporting		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	EpaReportedDigits		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	EpaReportingPrecision		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	MinimumInReports		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	ModifiedBy		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	ModifiedOn		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	ParameterName		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	ReportedSourceParameter...		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	SourceParameterData Type...		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	SourceParameterTemplateID		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	SystemTemplate		
7/3/2018 11:25:04.590		SourceParameterTemplate	INSERT	AirVision	TotalizeInReports		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	CreatedBy		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	CreatedOn		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	EnableAirNowReporting		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	EpaReportedDigits		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	EpaReportingPrecision		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	MinimumInReports		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	ModifiedBy		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	ModifiedOn		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	ParameterName		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	ReportedSourceParameter...		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	SourceParameterData Type...		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	SourceParameterTemplateID		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	SystemTemplate		
7/3/2018 11:25:25.150		SourceParameterTemplate	INSERT	AirVision	TotalizeInReports		

DB Modification History

The **Database Modifications Report** lists all modifications that were made to the AirVision database by Agilaire. It is a diagnostic/troubleshooting report, and rarely used.

Database Modifications Report	
Schema Name	dbo
Name	CalibrationLevelDeviation
Type Description	VIEW
Creation Date	3/15/2012 11:08:37 AM
Last Modified	12/4/2018 2:56:44 PM
Parent Name	
Schema Name	dbo
Name	ReadingAverageDataTag
Type Description	USER_TABLE
Creation Date	7/1/2010 3:55:32 PM
Last Modified	12/4/2018 2:56:45 PM
Parent Name	
Schema Name	dbo
Name	ReadingQualifierCodeDetail
Type Description	USER_TABLE
Creation Date	7/1/2010 3:55:32 PM
Last Modified	12/4/2018 2:56:48 PM
Parent Name	
Schema Name	dbo
Name	ReadingAnnotation
Type Description	USER_TABLE
Creation Date	7/1/2010 3:55:32 PM
Last Modified	12/4/2018 2:56:48 PM
Parent Name	

Database Modification History Report (Reports>Internal Reports>DB Modification History)

Diagnostic Reports

Software Version Report

This report displays the schema versions used by system components, and the build dates of the programs. It can be used to identify if the programs or database schema are out of date and don't match.

Software Version Report

Database Schema Timestamp	1/29/2019 10:32:40 AM
Database Schema Version Id	b10be061-5681-4984-a05f-76322e1e836b
Database Schema Version Number	17723
Client Database Schema Timestamp	1/23/2019 10:45:43 AM
Client Database Schema Version Id	592e3739-886e-403e-815d-2c3a614a2573
Client Database Schema Version Number	17719
Client Build Timestamp	1/31/2019 12:09:48 AM
Client Build Version	2019.01.31.1
Client Product Version	4.0.58
Server Database Schema Timestamp	1/23/2019 10:45:43 AM
Server Database Schema Version Id	592e3739-886e-403e-815d-2c3a614a2573
Server Database Schema Version Number	17719
Server Build Timestamp	1/31/2019 12:14:54 AM
Server Build Version	2019.01.31.1
Server Product Version	4.0.58

Exception Journal Report

Reports low-level server exceptions for troubleshooting.

Exception Journal Report

Time Stamp	Exception Log Type	Exception Type Name	UtilityJournalMessageID	
3/5/2019 12:05:06 AM	Nested	System.Net.Sockets.SocketException	9502353d-043f-e911-8cf5-180373be2a16	
Computer Name	Windows User	Application User	Program Name	Product Version
SITEONE	SYSTEM	Admin	AirVision.WindowsService	2019.01.31.1
Assembly Name	Namespace	Type Name		
System.dll	System.Net.Sockets	NetworkStream		
Method Prototype	Void Write(Byte[] buffer, Int32 offset, Int32 size)			
Exception Message	An established connection was aborted by the software in your host machine.			
Exception Stack Trace	at System.Net.Sockets.NetworkStream.Write(Byte[] buffer, Int32 offset, Int32 size)			

Login Event History

Provides a historical record of all user login/logout events in time-sequential form.

Login Event History

Created On	User Name	Is System	Event	Details	Application	Client Address
2/4/2019 13:03	Admin	True	Logout	Log out for user Admin	WindowsApplication	
2/4/2019 13:03	QA1	True	Login	Login success for user QA1	WindowsApplication	1.1.1.1
2/4/2019 13:04	QA1	True	Logout	Log out for user QA1	WindowsApplication	
2/4/2019 13:04	Admin	True	Login	Login success for user Admin	WindowsApplication	1.1.1.1
2/4/2019 13:05	Admin	True	Logout	Log out for user Admin	WindowsApplication	
2/4/2019 13:05	QA1	True	Login	Login success for user QA1	WindowsApplication	1.1.1.1
2/4/2019 13:06	QA1	True	Logout	Log out for user QA1	WindowsApplication	
2/4/2019 13:06	Admin	True	Login	Login success for user Admin	WindowsApplication	1.1.1.1
2/4/2019 13:07	Admin	True	Logout	Log out for user Admin	WindowsApplication	
2/4/2019 13:07	QA1	True	Login	Login success for user QA1	WindowsApplication	1.1.1.1
2/4/2019 13:12	QA1	True	Logout	Log out for user QA1	WindowsApplication	
2/4/2019 13:12	Admin	True	Login	Login success for user Admin	WindowsApplication	1.1.1.1
2/7/2019 11:27	Admin	True	Logout	Log out for user Admin	WindowsApplication	
2/7/2019 11:27	Admin	True	Login	Login success for user Admin	WindowsApplication	1.1.1.1

Login Session History

Provides a historical record of user sessions, including session duration.

Login Session History

User Name	Login Date/Time	Logout Date/Time	Session Duration hh:mm:ss	Client Address
Admin	1/24/2019 09:38	1/24/2019 15:35	05:56:58	1.1.1.1
Admin	1/24/2019 15:37	1/29/2019 10:41	19:04:44	1.1.1.1
Admin	1/24/2019 15:48	1/25/2019 17:39	01:51:09	1.1.1.1
Admin	1/25/2019 12:12	1/25/2019 16:53	04:41:35	1.1.1.1
Admin	1/25/2019 16:54	2/4/2019 13:03	20:09:37	1.1.1.1
Admin	1/29/2019 10:41	1/29/2019 10:42	00:00:41	1.1.1.1
Admin	1/29/2019 10:42	1/29/2019 10:45	00:03:13	1.1.1.1
Admin	1/29/2019 10:45			1.1.1.1
QA1	2/4/2019 13:03	2/4/2019 13:04	00:00:24	1.1.1.1
Admin	2/4/2019 13:04	2/4/2019 13:05	00:01:13	1.1.1.1
QA1	2/4/2019 13:05	2/4/2019 13:06	00:00:50	1.1.1.1
Admin	2/4/2019 13:06	2/4/2019 13:07	00:00:53	1.1.1.1
QA1	2/4/2019 13:07	2/4/2019 13:12	00:04:41	1.1.1.1
Admin	2/4/2019 13:12	2/7/2019 11:27	22:14:35	1.1.1.1
Admin	2/7/2019 11:27			1.1.1.1

Site Node Logger Status Report

The status of all 8872's in the network can be polled (XS command), and this report will show various status indications of free database size, hard disk, etc. If task notifications are enabled and have email subscribers (pg. 80), email alarms can be provided for warnings.

Site Node Logger Status Report

<u>Site Name</u>	<u>Logger</u>	<u>Logger Id</u>	<u>Free Drive Space(MB)</u>	<u>Drive Space Low</u>	<u>Database Size(MB)</u>	<u>Database Free Space (MB)</u>	<u>Database Size Warning</u>	<u>Status Message</u>	<u>SoftwareVersion</u>
8872_634	8872_634	NS	899	Yes	10239	0	Yes	Drive space low warning!	2018.06.05.1

Table Size Information

The **Table Size Information Report** lists all tables in the database and their size. In general, this report is used to review the two, (potentially) largest tables.

- Reading Average Data
- Utility Journal Message (Event Log)

<i>Table Name</i>	<i>Rows</i>	<i>Reserved (K)</i>	<i>Data (K)</i>	<i>Index Size (K)</i>	<i>Unused (K)</i>
All Tables	24,400	29,160	24,288	4,280	592
AdvpCharacteristicRelation	12	32	8	24	0
AdvpDataCharacteristic	4	32	8	24	0
AdvpHistoricalAverage	0	0	0	0	0
AdvpLogicalJoinOperator	2	32	8	24	0
AdvpRuleCondition	0	0	0	0	0
AdvpRuleStatus	0	0	0	0	0
AdvpRuleStatusSite	0	0	0	0	0
AdvpValueComparisonType	4	32	8	24	0
AlarmAdvpParameter	0	0	0	0	0
AlarmAdvpRule	0	0	0	0	0
AlarmAdvpTask	0	0	0	0	0
AlarmTriggerFlag	0	0	0	0	0
AmbAirNowFlagDetail	6	16	8	8	0
AmbAirNowTask	0	0	0	0	0
AmbAqiLevel	63	88	56	32	0
AmbAqiProgram	10	32	8	24	0
AmbAqsBlankType	3	32	8	24	0
AmbAqsCompositeType	5	32	8	24	0
AmbAqsCountyTribalCode	3,376	784	504	248	32
AmbAqsDurationCode	23	32	8	24	0
AmbAqsFrequencyCode	31	32	8	24	0
AmbAqsNullCode	52	64	16	48	0
AmbAqsParameterCategory	4	32	8	24	0
AmbAqsParameterType	1,065	320	240	72	8
AmbAqsStateCode	57	48	8	40	0
AmbAqsUnitCode	124	56	24	32	0
AmbFrequencyDistribRange	0	0	0	0	0
AmbFrequencyDistribution	0	0	0	0	0
AmbFtpTransfer	0	0	0	0	0
AmbVosProgram	0	0	0	0	0
AmbWindRoseLevel	16	16	8	8	0
AmbWindRoseProgram	2	32	8	24	0

Table Report (Reports>Internal Reports)

Logger Reports

Central Messages (for older 8816/8832 loggers)

To run the **Central Messages Report**, **Poll Central Messages** must be selected in the **Task Scheduler** in one of the polling tasks. If you're polling manually, select **Central Message** as a **Data Type**. To run the report, select **Reports>Logger Reports>Central Messages**, select a date range and Source then click **Generate Report**.

Logger Central Message Report	
Site Name Agilaire	Site Description
Logger Identifier 01	Logger Name Logger01
Message Time	Message Text
10/4/2010 11:43:10 AM	RESTART

Input Line Status Report

If Status Input Changes are polled from the data loggers, the **Input Line Status Report** displays Site and Logger Name, Logger ID, Line Number, Line Name, Line State, Time of Change, and Line Description.

To run an **Input Line Status Report**, select **Reports > Logger Reports > Input Line Status Report**. In the **Report Criteria** screen, select a **Start/End Date** and a **Site/Source Name**. Click the **Generate Report** icon. An **Input Line Status Report** will be displayed in the bottom section of the screen. Each site/logger is shown in a separate page.

Input Line Report				
Site Name SITEONE				
Logger Name Logger01		Logger Identifier 01		
Line Number	Line Name	Line State	Time Of Change	Line Description
4	OutPut Line4	<input checked="" type="checkbox"/>	2/5/2009 1:38:45 PM	
4	OutPut Line4	<input type="checkbox"/>	2/5/2009 1:38:46 PM	
37	OutPut Line37	<input checked="" type="checkbox"/>	5/5/2009 12:00:02 AM	
37	OutPut Line37	<input type="checkbox"/>	5/5/2009 12:05:01 AM	
37	OutPut Line37	<input checked="" type="checkbox"/>	5/6/2009 12:00:02 AM	
2	DIG002	<input checked="" type="checkbox"/>	5/6/2009 12:00:02 AM	
2	DIG002	<input type="checkbox"/>	5/6/2009 12:05:01 AM	
37	OutPut Line37	<input type="checkbox"/>	5/6/2009 12:05:01 AM	
37	OutPut Line37	<input checked="" type="checkbox"/>	5/7/2009 12:00:02 AM	
2	DIG002	<input checked="" type="checkbox"/>	5/7/2009 12:00:02 AM	
2	DIG002	<input type="checkbox"/>	5/7/2009 12:05:01 AM	
37	OutPut Line37	<input type="checkbox"/>	5/7/2009 12:05:01 AM	
37	OutPut Line37	<input checked="" type="checkbox"/>	5/8/2009 12:00:02 AM	
2	DIG002	<input checked="" type="checkbox"/>	5/8/2009 12:00:02 AM	
2	DIG002	<input type="checkbox"/>	5/8/2009 12:05:01 AM	
37	OutPut Line37	<input type="checkbox"/>	5/8/2009 12:05:01 AM	

Input Line Report

Power Failure Report

If Power Failure events are being polled from the data loggers, the **Power Failure Report** displays Site and Logger Name, Logger ID, Failure Time and Restored Time.

To run a **Power Failure Report**, select **Reports > Logger Reports > Power Failure Report**. In the **Report Criteria** screen, select a **Start/End Date** and a **Site/ Source Name**. Click the **Generate Report** icon. A **Power Failure Report** will be displayed in the bottom section of the screen. Each site/logger is shown in a separate page.

<i>Logger Power Failure Report</i>			
<i>Site Name</i>	SITEONE	<i>Site Description</i>	
<i>Logger Name</i>	SITEONE	<i>Logger Identifier</i>	RD
<u><i>Failure Time</i></u>		<u><i>Restored Time</i></u>	<u><i>Duration (Days hh:mm)</i></u>
20-Sep-2010 07:52		20-Sep-2010 08:17	00:25
22-Sep-2010 11:02		22-Sep-2010 11:03	00:01
22-Sep-2010 11:07		22-Sep-2010 11:10	00:03
29-Oct-2010 17:35		01-Nov-2010 10:36	2 17:01
01-Nov-2010 15:20		01-Nov-2010 17:04	01:43
02-Nov-2010 08:50		02-Nov-2010 10:38	01:47
10-May-2011 07:53		10-May-2011 07:54	00:00
02-Jun-2011 11:23		02-Jun-2011 11:23	00:00
02-Jun-2011 11:24		02-Jun-2011 11:26	00:01
02-Jun-2011 11:26		02-Jun-2011 11:27	00:00
21-Jun-2011 22:00		22-Jun-2011 05:43	07:42
26-Sep-2011 09:36		26-Sep-2011 09:36	00:00

Power Failure Report

Met Reports

Joint Frequency Distribution Report

The **Joint Frequency Distribution (JFD) report** provides a tabular summary of the same data that is represented in the Wind/Pollution Rose report. This data correlates a wind speed or pollutant value, by programmed value ranges, with the occurrence of that data in various wind direction sectors. The JFD report may only be run against the same Wind/Pollution Rose programs created in the **Wind Rose Levels Editor**. This report provides the same information as the Wind Rose/Pollution Rose report, only in tabular form.

```

Current Date : 1/30/2019
Current Time : 3:11 PM
    
```

Joint Frequency Distribution Report
3/8/2010 - 6/25/2018

```

Site: SITEONE
Parameter: CO
Units: PPM
    
```

WDR Site: SITEONE
WDR Parameter: SWD

Limit	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Freq.
< 1	0.01	0.01	0.01	0.01	0.01	5.21	6.23	0	0	0	0	0	0	0	0	0.01	11.50
< 2	0.23	0.17	0.05	0.01	0.03	7.11	37.43	4.74	0.44	0.93	2	7.08	10.46	6.63	2.58	8.41	88.30
< 3	0	0	0	0	0	0	0	0	0.01	0	0.01	0.01	0.01	0	0	0	.04
< 4	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.01
< 5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.00
< 6	0.01	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.01
< 7	0	0	0	0	0	0.15	0	0	0	0	0	0	0	0	0	0	.15
> 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.00
Freq.	.26	.18	.06	.02	.04	12.4	43.6	4.74	.45	.93	2.01	7.09	10.4	6.63	2.58	8.42	99.98
Calm:	0.02					7	6						7				

Joint Frequency Distribution Report

Meteorological Report

The **Meteorological Report** shows meteorological data, such as wind direction, wind speed, temperature, rainfall, relative humidity, and stability class (based on lateral turbulence and wind speed method). Each site is shown separately for each day. If the reported parameters includes the following parameter templates, the report will also generate the Stability Class via the SRDT Method:

- SOLARRAD
- SWSP or WSP_MID
- DELTAT_GM

Current Time: 05/15/2019 01:28

Meteorological Report

Site: SITEONE

5/14/2019

Interval 001h

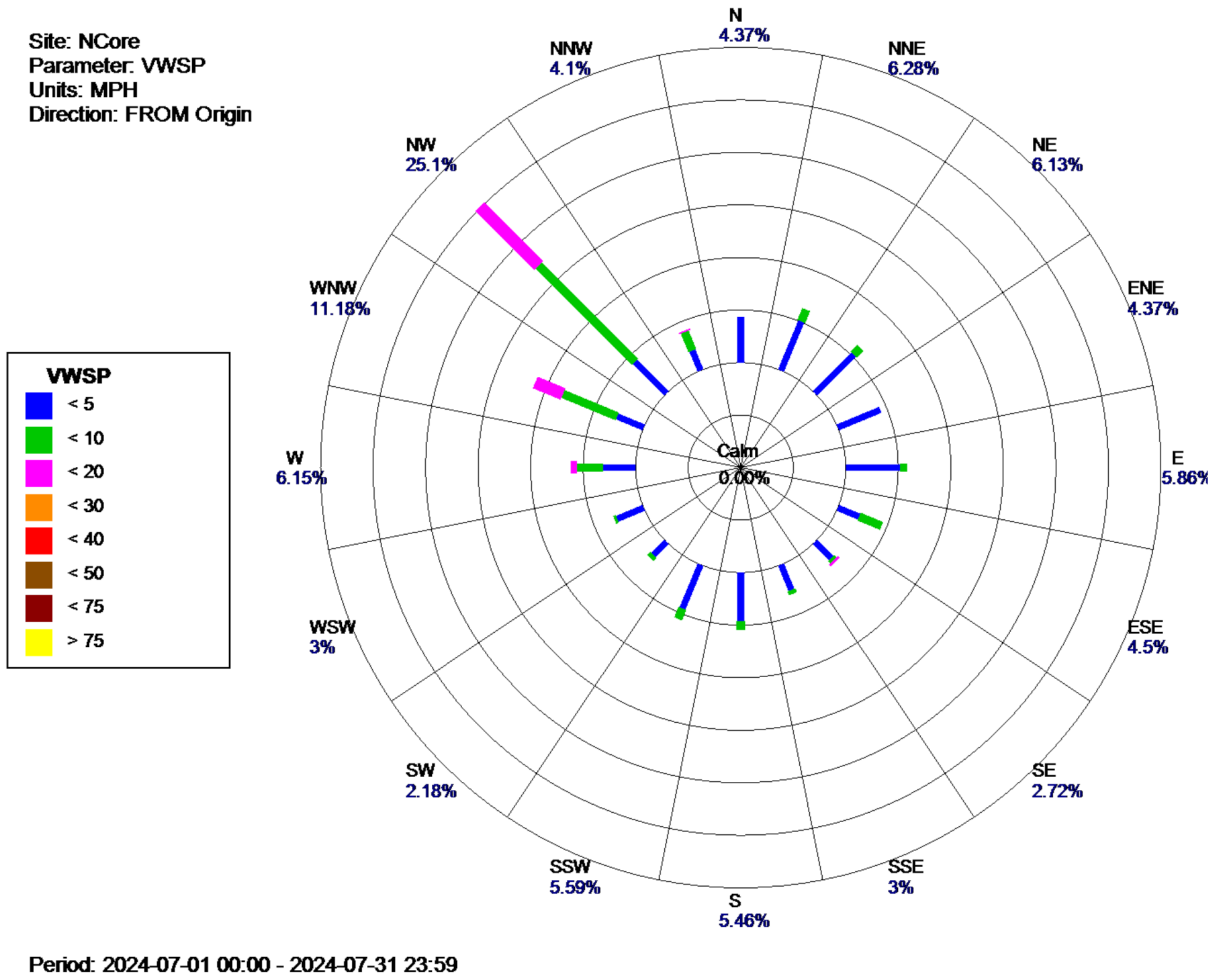
Hour	RH	SWD	SWS
	PERCENT	DEG	MPH
00:00	0.010243	257.2	20.0
01:00	0.010457	224.9	20.0
02:00	0.010268	261.9	20.0
03:00	0.010168	256.0	20.0
04:00	0.010138	259.6	20.0
05:00	0.010056	243.1	20.0
06:00	0.00995	266.8	20.0
07:00	0.010179	269.4	20.0
08:00	0.010239	251.9	20.0
09:00	0.01053	251.9	20.0
10:00	0.010492	265.4	20.0
11:00	0.01037	246.6	20.0
12:00	0.010359	237.0	20.0
13:00	0.011221	229.8	20.0
14:00	0.01072	253.3	20.0
15:00	0.010398	272.5	20.0
16:00	0.010337	243.5	20.0
17:00	0.010968	223.2	20.0
18:00	0.011688	225.2	20.0
19:00	0.010655	271.5	20.0
20:00	0.010688	287.1	.0
21:00	0.010575	240.7	20.0
22:00	0.010619	236.5	20.0
23:00	0.010453	253.4	20.0
Max	0.011688	287.1	20.0
Min	0.00995	223.2	.0
Sigma	0.000383	16.7	4
Average	0.01049	251.1	19.1
Good	24	24	24

Rainfall Total:

Meteorological Report (Reports Menu)

Wind/Pollution Rose

The **Wind/Pollution Rose** correlates wind direction data with another reading, either wind speed/magnitude, or a pollutant concentration value. The length of the line corresponds to the frequency of readings in that direction and concentration value, while the line color thickness corresponds to the magnitude of the speed/pollutant value.



Wind/Pollution Rose

► **Note:** The values for each "class" or "level" are set in the Wind Rose Levels Editor (Chapter 2).

Version 4.7 and above allows the selection of different numbers of sectors (16, 28, 32, 36, etc) and to denote if wind direction is considered “from” (default) or “towards.”

Sample Data Reports

Basic Sample Data Report

This report is a basic report (suitable for export to Excel) of non-continuous (sample) data records. Null codes are shown beside the date, if present.

	SITEONE
	PM25LC
	88101
	105
24-Apr-2014 00:00	10
11-May-2014 00:00	9.4
12-May-2014 00:00	5.3
13-May-2014 00:00	10.9
14-May-2014 00:00	10.2
15-May-2014 00:00	6
16-May-2014 00:00	8.7
17-May-2014 00:00	12.1
18-May-2014 00:00	3.2
19-May-2014 00:00	6.8
20-May-2014 00:00	5.8
16-Dec-2014 00:00	67
04-May-2015 00:00	2.53
24-Nov-2015 00:00	79
01-Sep-2017 00:00	500 AA
11-Oct-2017 00:00	100

Monthly Sample Data Report

The **Monthly Sample Data Report** shows the value of the non-continuous sample values for each day (showing a blank for days where there is no sample). If you want the Qualifier Codes to be shown in the report, click to select **Show Qualifier Codes**.

Data in this report is only shown for parameters with Sample or Composite type, and which have a certain Parameter Template (either "PM25" or "PM10") defined.

Current Time: 8:13 PM

Monthly Sample Report
PM10
July 2011

Day	01_KNOX	BLOUNT	BLOUNT2	BLOUNT3	Summary		
					Average	Max	Count
1	14.1	14.1	14.1	14.1	14.1	14.1	4
4	12.3	12.3	12.3	12.3	12.3	12.3	4
7	19.4	19.4	19.4	19.4	19.4	19.4	4
10	27.2	27.2	27.2	27.2	27.2	27.2	4
13	21.1	21.1	21.1	21.1	21.1	21.1	4
16	18.3	18.3	18.3	18.3	18.3	18.3	4
17	17.7	17.7	17.7	17.7	17.7	17.7	4
19	11.9	11.9	11.9	11.9	11.9	11.9	4
22	14.4	14.4	14.4	14.4	14.4	14.4	4
25	14.6	14.6	14.6	14.6	14.6	14.6	4
28	13.5	13.5	13.5	13.5	13.5	13.5	4
Max	27.2	27.2	27.2	27.2	27.2	27.2	27.2
Average	16.8	16.8	16.8	16.8	16.8	16.8	16.8
Count	11	11	11	11	44	44	44

Monthly Sample Report for PM 2.5 from the Reports Menu

Sample Annotations Report

This report shows annotations applied to any non-continuous data record.

Date Printed: 02/05/2019 05:20

Annotation Report
01-Mar-2014 00:00 to 04-Feb-2019 23:59

Site: SITEONE
Parameter: PM25LC

<u>Category</u>	<u>Date Annotated</u>	<u>User Name</u>	<u>Start</u>	<u>End</u>	<u>Annotation</u>
Audit	11-Oct-17 15:48	QA			Added Reading
Audit	11-Oct-17 15:36	QA			Added Reading
Audit	11-Oct-17 15:38	QA			Added Reading
Audit	24-Aug-18 14:11	QA			Added Reading

Sample/Hourly Daily Comparison Report/Graph

Current Date: 1/7/2014 2:36 PM

Sample/Hourly Daily Comparison

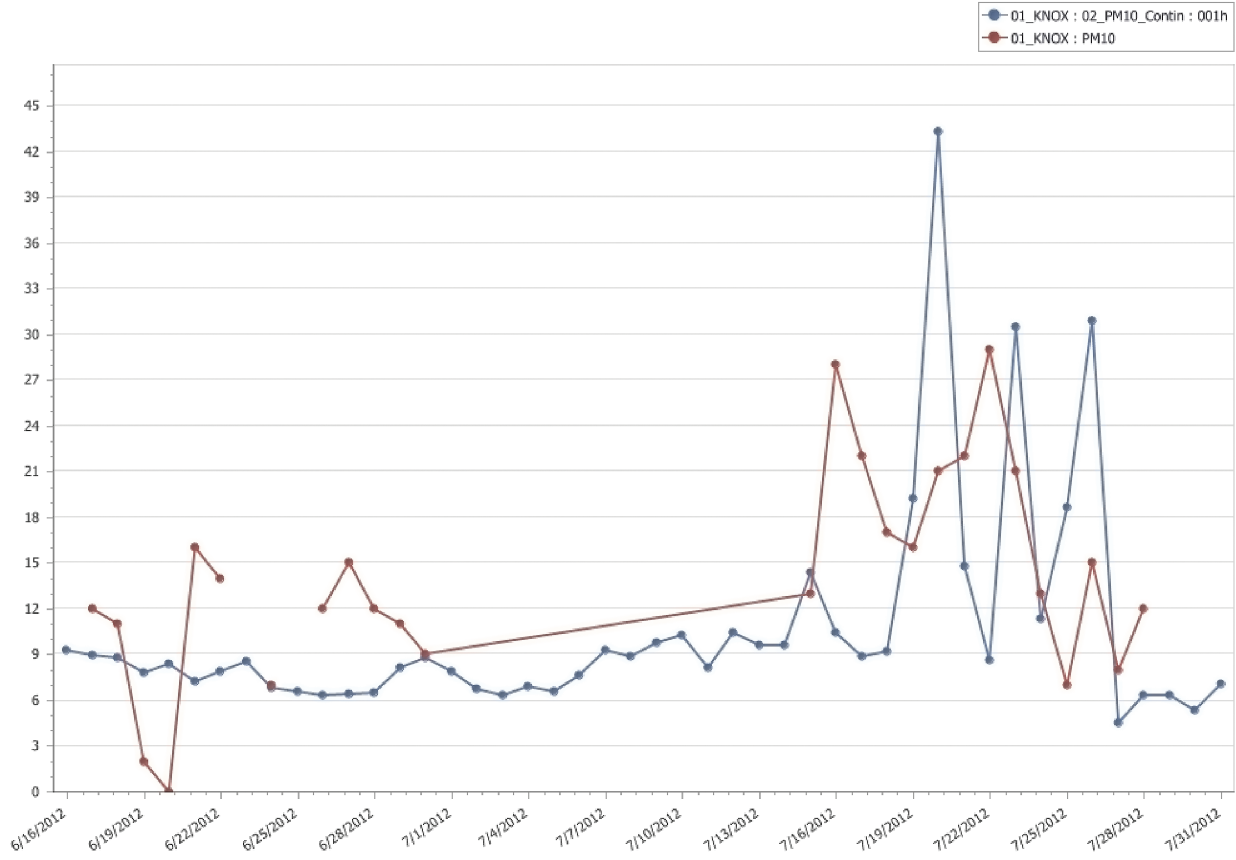
This report and graph allows the user to compare daily values of non-continuous (sample) data records with 24-hour averages made from hourlaverages from a continuous instrument (e.g., TEOM, BAM, T640). The report creates the 24-hour values, no Data Average Rollup program is required.

Date	01_KNOX	
	02_PM10_Contn	PM10
6/16/2012	9.2	
6/17/2012	8.9	12
6/18/2012	8.7	11
6/19/2012	7.8	2
6/20/2012	8.4	0
6/21/2012	7.2	16
6/22/2012	7.9	14
6/23/2012	8.5	
6/24/2012	6.8	7
6/25/2012	6.5	
6/26/2012	6.3	12
6/27/2012	6.3	15
6/28/2012	6.4	12
6/29/2012	8.1	11
6/30/2012	8.7	9
7/1/2012	7.8	
7/2/2012	6.7	
7/3/2012	6.3	
7/4/2012	6.8	
7/5/2012	6.5	
7/6/2012	7.6	
7/7/2012	9.3	
7/8/2012	8.8	
7/9/2012	9.8	
7/10/2012	10.2	
7/11/2012	8.1	
7/12/2012	10.4	
7/13/2012	9.6	
7/14/2012	9.6	
7/15/2012	14.3	13
7/16/2012	10.4	28
7/17/2012	8.9	22
7/18/2012	9.2	17
7/19/2012	19.2	16
7/20/2012	43.3	21
7/21/2012	14.7	22
7/22/2012	8.6	29
7/23/2012	30.4	21
7/24/2012	11.3	13
7/25/2012	18.6	7
7/26/2012	30.9	15
7/27/2012	4.5	8
7/28/2012	6.2	12
7/29/2012	6.2	
7/30/2012	5.3	
7/31/2012	7	

Sample Hourly Comparison Graph

Current Date: 1/7/2014 2:33 PM

Sample/Hourly Comparison Graph

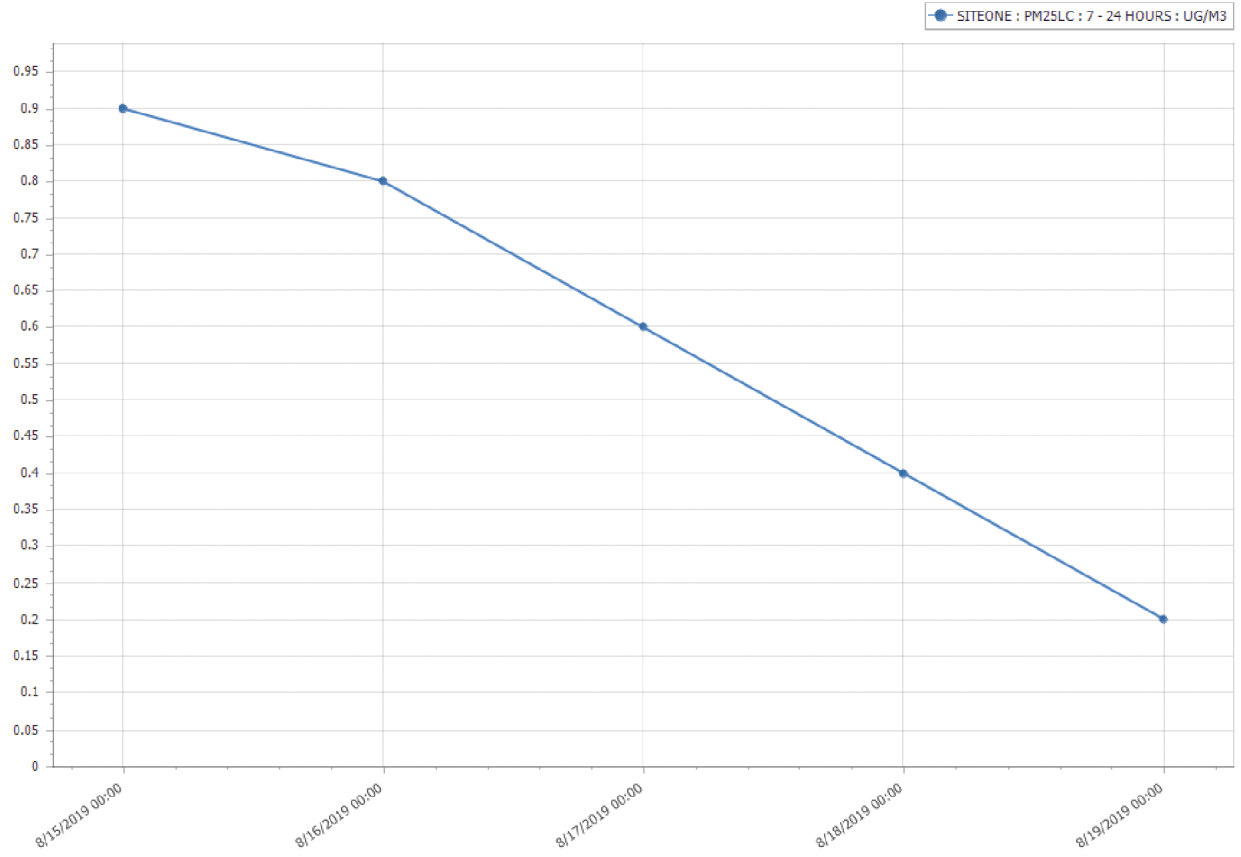


Sample Data Graph.

This report provides a time-series chart of non=continuous (sample) data.

Current Date: 8/19/2019 1:36 PM

Sample Data Graph Report



Other Notations Reports

Annotations Report

The **Annotations Report** may be run on any list of parameters, for any time range. It provides a summary of all annotations added during editing, ADVP, direct poll files, mapping, etc.

To see a report of annotations made in the **Average Data Editor**, open the **Reports** menu, expand **Notation Reports** and select **Annotations Report**. Make the usual query selections of **Start/End Date**, **Average Interval**, and **Parameter(s)**. Click the **Generate Report** icon on the ribbon.

Date Printed: 01/30/2019 02:58

Annotation Report
01-Jan-2018 00:00 - 31-Mar-2018 23:59

Site: SITEONE
Parameter: CO

Category	Date Annotated	User Name	Start	End	Annotation
Audit	16-Jan-18 15:37	AirVision	16-Jan-18 00:00	16-Jan-18 00:00	Reading Value Changed from: 1.25667405 to: 2
Audit	16-Jan-18 15:37	AirVision	16-Jan-18 01:00	16-Jan-18 01:00	Reading Value Changed from: 1.22007139 to: 2
Audit	16-Jan-18 15:37	AirVision	16-Jan-18 02:00	16-Jan-18 02:00	Reading Value Changed from: 1.218464 to: 2
Audit	16-Jan-18 15:37	AirVision	16-Jan-18 03:00	16-Jan-18 03:00	Reading Value Changed from: 1.27755557 to: 2
Audit	16-Jan-18 15:37	AirVision	16-Jan-18 04:00	16-Jan-18 04:00	Reading Value Changed from: 1.27838839 to: 2

Annotations Report

Audit Trail Report

The **Audit Trail Report** provides a record of modified data where the value has been modified.

Current Date : 1/30/2019
Current Time : 2:52 PM

Data Audit Trail
09-Mar-2017 - 31-Mar-2018

Site: SITEONE
Parameter: NO
Interval: 001h

TimeStamp	Raw Value	Final Value	Flags	Time Modified	Modified By	Annotation
10/09/2017 00:00	7		E	10/09/2017 11:09	AirVision	test
10/09/2017 00:00	7		E	10/09/2017 11:13	AirVision	test
10/09/2017 00:00	7		E	10/09/2017 11:15	AirVision	Reading Value Changed from: 7.32171714 to: 7
10/09/2017 00:00	7		E	10/09/2017 11:17	AirVision	Reading Value Changed from: 7 to: Not Specified

LogBook Report

The **LogBook Report** generates reports of logbook entries that were made in the **LogBook Entries Editor**. To query a LogBook Report select LogBook Report from **Notation Reports** under the **Reports** menu. Select **Start** and **End Dates** and a **Site Name** from the top section of the screen and click the **Generate Report icon** in the upper left section of the screen. The user may also choose one or all **Logbook Categories** as a filter for the report.

The logbook report will be displayed in the lower section of the screen.

```
Date Printed: 06/25/2018 05:10

                                     Logbook Report
                                     SITEONE
                                     18-Jan-2011 00:00 to 24-Jun-2018 23:59

Entered by:  AirVision
Category:    Other
Entry Time:  10/29/2012 12:30      Event Time: 10/29/2012 12:30

  Log Entry
test

-----ADDENDUM [10/29/2012 12:35:20 PM] USER [AirVision]-----
test again

Comments:
```

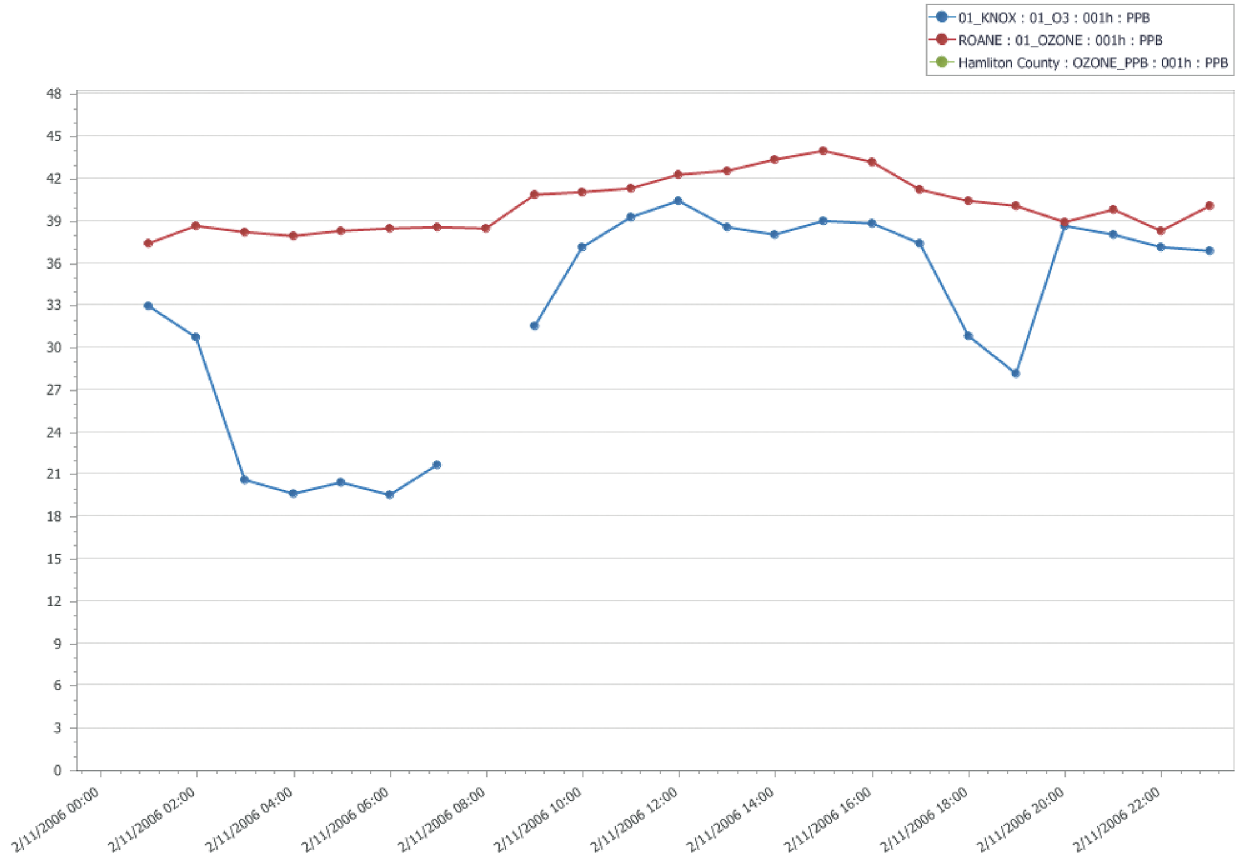
Average Reports

Average Data Trend Report

This report allows access to feature similar to the graphs in the Data Editor, but for use as an automated report or for a user without permissions to the Data Editor. It supports checkbox options for dynamic scaling, show invalid as empty, etc.

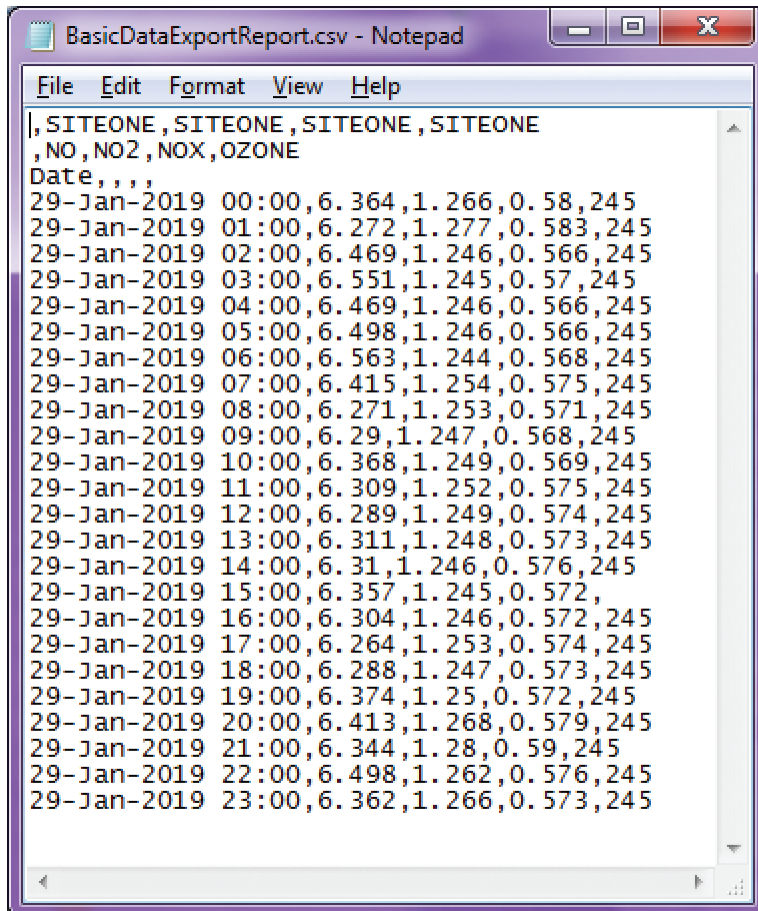
Current Date: 11/4/2013 10:30 AM

Average Data Trend Report



Basic Data Export

This report is much like the Daily Summary Report, but allows for unlimited number of sites/parameters as columns, and any number of averages as rows, without page breaks or summary data. It is ideally suited for CSV export via the task scheduler to disk or FTP, for automating data export to legacy systems, websites, etc. In this report, invalid data is represented as an empty value. Averages can also be set to rolling or block. Options include adding additional columns to show flags on the data and whether to show values or blanks when data is invalid.



```
BasicDataExportReport.csv - Notepad
File Edit Format View Help
|,SITEONE, SITEONE, SITEONE, SITEONE
,NO,NO2,NOX,OZONE
Date,,,
29-Jan-2019 00:00,6.364,1.266,0.58,245
29-Jan-2019 01:00,6.272,1.277,0.583,245
29-Jan-2019 02:00,6.469,1.246,0.566,245
29-Jan-2019 03:00,6.551,1.245,0.57,245
29-Jan-2019 04:00,6.469,1.246,0.566,245
29-Jan-2019 05:00,6.498,1.246,0.566,245
29-Jan-2019 06:00,6.563,1.244,0.568,245
29-Jan-2019 07:00,6.415,1.254,0.575,245
29-Jan-2019 08:00,6.271,1.253,0.571,245
29-Jan-2019 09:00,6.29,1.247,0.568,245
29-Jan-2019 10:00,6.368,1.249,0.569,245
29-Jan-2019 11:00,6.309,1.252,0.575,245
29-Jan-2019 12:00,6.289,1.249,0.574,245
29-Jan-2019 13:00,6.311,1.248,0.573,245
29-Jan-2019 14:00,6.31,1.246,0.576,245
29-Jan-2019 15:00,6.357,1.245,0.572,
29-Jan-2019 16:00,6.304,1.246,0.572,245
29-Jan-2019 17:00,6.264,1.253,0.574,245
29-Jan-2019 18:00,6.288,1.247,0.573,245
29-Jan-2019 19:00,6.374,1.25,0.572,245
29-Jan-2019 20:00,6.413,1.268,0.579,245
29-Jan-2019 21:00,6.344,1.28,0.59,245
29-Jan-2019 22:00,6.498,1.262,0.576,245
29-Jan-2019 23:00,6.362,1.266,0.573,245
```

Data with Flags

This report provides a summary of data with all of the flags (not just the highest priority flag like other reports), primarily for auditing or troubleshooting. Different parameters are broken out into separate pages.

Current Date:	1/30/2019	2:24 PM	Data With Flags	
Site Name:	SITEONE		29-Jan-2019	Units:
Parameter:	CO			Avg Interval: 001h
	<u>Date</u>	<u>Value</u>	<u>Flags</u>	
29-Jan-2019	00:00	1.3		
29-Jan-2019	01:00	1.3		
29-Jan-2019	02:00	1.3	h	
29-Jan-2019	03:00	1.3	h	
29-Jan-2019	04:00	1.3	h	
29-Jan-2019	05:00	1.3	<Ch	
29-Jan-2019	06:00	1.3	h	
29-Jan-2019	07:00	1.3	h	
29-Jan-2019	08:00	1.3		
29-Jan-2019	09:00	1.3		
29-Jan-2019	10:00	1.3		
29-Jan-2019	11:00	1.3		
29-Jan-2019	12:00	1.3		
29-Jan-2019	13:00	1.3		
29-Jan-2019	14:00	1.3		
29-Jan-2019	15:00	1.3	h	
29-Jan-2019	16:00	1.3		
29-Jan-2019	17:00	1.3		
29-Jan-2019	18:00	1.3		
29-Jan-2019	19:00	1.3		
29-Jan-2019	20:00	1.3	h	
29-Jan-2019	21:00	1.3		
29-Jan-2019	22:00	1.3	h	
29-Jan-2019	23:00	1.3		

Other Reports

Cumulative Report

This report shows a totalized value of the selected parameter(s) over the report period, such as totalized fainfall.

Current Date: 3/25/2022 3:03 PM

Cumulative Report

1/20/2006 - 1/27/2006

Parameter	Units	01_KNOX	BLOUNT2	BLOUNT3	Brentwood_NCore
RAINFALL	INCHES		16.91	7.17	.93

Site Health Report

This report shows ranges of data for primary measurements (parameters with parameter templates), as well as diagnostic parameters (parameters with parent parameters), and a Logbook and Calibration report for all "all in one" health check of the site. Secondary Measurements are defined as selected parameters that have a "Parent Parameter" set in the site/parameter configuration.

Current Date: 1/7/2014 2:33 PM

Site Health Report

Site Name: 01_KNOX
Address:

Starting Date: 15-Feb-2006 00:00
Ending Date: 16-Feb-2006 00:00

Primary Measurements:

Parameter	Max	Min	Average
01_CO	46	8	24
02_PM10_Contra	30.4	13.2	18.5
08_TEMP	23.6	21.9	22.7
13_RAINFALL	0.05	0.05	0.05
14_SOL_RAD	554.2	-2.9	133.5
15_BAROMETR	746.7	742.7	743.7
21_PM2.5	30.2	13.3	18.5
41_WSVEC	2.9	0.1	1.1
43_WDVEC	333.9	2	206.8
45_SIGMA_TH	36.4	9.2	21.2
47_BARFR	-999	-999	-999
CALCD_OZONE	-999	-999	-999
PM10	-999	-999	-999
PM10_BAM24	-999	-999	-999
REL_HUM	78.4	26.1	53.1
SO2	-999	-999	-999
SO2_SampleFlow	-999	-999	-999
SO4	-999	-999	-999
WD	353	2	207
WS	3.2	0.4	1.3

Secondary Measurements:

Parameter	Max	Min	Average	
21_PM2.5:24_AMBDEW	21.9	15.3	18.5	
21_PM2.5:25_DRYDEW	-999	-999	-999	
21_PM2.5:26_NOISE	1.5	0.89	1.171	
21_PM2.5:27_FILLOAD	26	23	23	
21_PM2.5:28_STATUS	1	0	0	
01_O3:O3BENCHT	-999	-999	-999	

Logbook Report

Category User Name Entry Time Event Time Entry

Calibration Report

Parameter Sequence Phase Start Time End Time Value Expected Value Error

Violation of Standards Report

The **Violation of Standards Reports** provide a list of time periods where user-defined standards were violated. The user defines the violation limits and calculation methods (hourly, multi-hour, or USEPA annual standards) using the **Violation of Standards** configuration editor.

Note: Some NAAQS calculations in the Violation of Standards Report require multiple years of data to run.

Current Date : 7/20/2009			
Current Time : 4:01 PM			
Violation of Standards Report			
Ozone_PP8 8 Hour			
20-Jul-2006 00:00 - 21-Jul-2009 00:00			
Site:	SITEONE	Parameter:	OZONE
Avg Interval:	8 hour	Units:	PPB
Average Type:	Forward rolling	Violation Limit:	75
<u>Rank</u>	<u>Average</u>	<u>Date</u>	<u>Hour</u>
1	86	06/22/2007	10
2	79	06/12/2007	11
3	77	08/17/2007	10

Chapter 4

Data Editors

Air Vision provides the following Data Editors:

- ◆ **Average Data Editor**
- ◆ **Linear Data Editor**
 - **Cell Color Codes in Flags Editor**
 - **Right-Click Options**
- ◆ **Cross-Tab Data Editor**
- ◆ **Matrix Data Editor**
- ◆ **Time Series Graph**
 - **Scatter Plot Graph**
 - **Histogram**
- ◆ **Batch Reading Updater**
- ◆ **Annotate Data Editor**
- ◆ **Sample Data Editor**
 - **Methods for Sample Data Handling in AirVision**
- ◆ **Calibration Data Editor**
- ◆ **Lock/Unlock Data**
- ◆ **Logbook Entry Editor**
- ◆ **Cal Adjust Processor (Optional)**

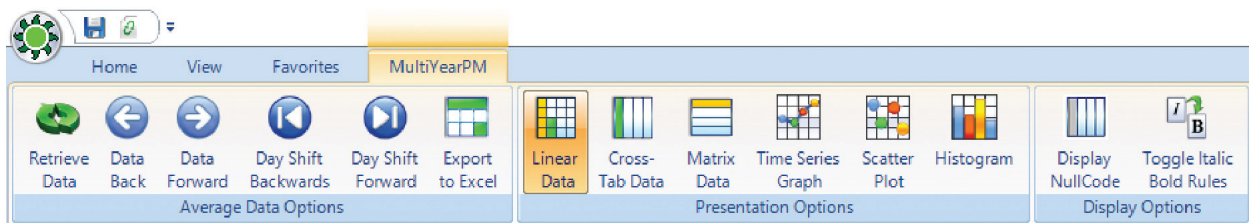
Average Data Editor

The AirVision **Average Data Editor (Data Editors > Average Data Editor)** combines multiple functions into a single tool:

- ◆ Editing details of data points
- ◆ Batch editing
- ◆ Comparison of current data with historical minimum, maximum, and mean
- ◆ Analyze/Exported

In addition, you can toggle between the following six formats by clicking buttons in the ribbon at the top of the screen:

- ◆ Linear Table (the default display)
- ◆ Cross Tab Table
- ◆ Matrix Table
- ◆ Time Series Graph (can be used for single or multiple parameters, but the historical comparison tools in this X-Y scatter plot only appear in single- parameter queries)
- ◆ Scatter Plot graph (can include regression values by checking the box in the legend, and requires queries of two or more parameters with at least 2 data points each)
- ◆ Histogram (for single parameter queries)



Ribbon bar to toggle between Data Editor displays; arrows to scroll backward and forward through data

Control-Keys can also be helpful for navigating when using the editor:

- ◆ **CTRL-N** for Next (Data Forward)
- ◆ **CTRL-P** for Previous (Data Back)
- ◆ **CTRL-L** to Reload data set.

To edit data in the **Average Data Editor (Data Editors > Average Data Editor)**, enter

- ◆ **Start and End Date** (type dates or use arrow keys to select)
- ◆ **Average Interval** (for example, 001h Hourly average of 60 minutes)
- ◆ **Parameter Selection** (for example, **Site Name** SITEONE, **Parameter Name** CO, **Parameter Template** CO)
- ◆ Click the **Retrieve Data** button in the ribbon at the top of the screen

The Average Data Editor will open the **Linear Data Editor** by default. Click buttons in the ribbon to change formats. Click the **Data Back** or **Data Forward** button to jump scroll to either the previous or following data set. For example, if your initial query was for a week of data, the scroll buttons will take you backward or forward to a week of data. "Day Forward" and "Day Back" buttons always scroll as a 24-hour period, which can be useful for reviewing 1-minute data every day during a calibration window (e.g., 1:45 - 2:30 am each day).

Linear Data Editor

The **Linear Data Editor** allows access to all major database fields, displaying :

- ◆ Site Name, Parameter Name, Parameter Template Name
- ◆ Average Interval
- ◆ Start and End Dates
- ◆ Value (Hover the mouse pointer over data values to see any annotations.)
- ◆ Raw Value (can't be edited)
- ◆ AQS Null Codes
- ◆ Data Logger Flags
- ◆ Qualifier Codes
- ◆ AirVision Data Grade (used by ADVP for approval levels)
- ◆ Annotations

To edit data values, double-click in the Value cell or right-click to bring up a pop-up menu.

Flag: Back Color:

Description: Fore Color:

Mapped AIRNow Code:

Mapped AQS Null Code: Priority:

Flag Type:

Flag	Description	Priority	Invalidates Data	Mapped AQS Null Code	Mapped AIRNow Code	Flag Type	Fore Color	Back Color
I	Invalidated By Edit	2	<input checked="" type="checkbox"/>	AL - Voided by Op...		Validity Flag	0, 0, 0	255, 255, 0
T	Out of Control	3	<input checked="" type="checkbox"/>			Validity Flag	0, 0, 0	255, 0, 0
?	Suspect	3	<input type="checkbox"/>	TS - Holding Time...			0, 0, 0	192, 192, 192
P	Power Failure	5	<input type="checkbox"/>	AV - Power Failure...			0, 0, 0	255, 0, 0
B	Bad Status	6	<input type="checkbox"/>	AN - Machine Mal...		Validity Flag	0, 0, 0	255, 128, 0
C	Calibration	7	<input type="checkbox"/>	AY - Q C Control P...		Validity Flag	0, 0, 0	0, 255, 2...
M	Maintenance	8	<input type="checkbox"/>	BA - Maintenance/...		Validity Flag	0, 0, 0	192, 255, ...
m	Marked Maint by edit	9	<input type="checkbox"/>	BA - Maintenance/...			0, 0, 0	255, 192, ...
O	Overrange	10	<input type="checkbox"/>	AN - Machine Mal...			0, 0, 0	128, 255, ...
F	Boiler Offline	11	<input type="checkbox"/>			Validity Flag	255, 255, ...	128, 128, ...
+	Max Exceeded	12	<input type="checkbox"/>	AN - Machine Mal...		Validity Flag	0, 0, 0	192, 192, ...
-	Min Exceeded	13	<input type="checkbox"/>	AN - Machine Mal...		Validity Flag	0, 0, 0	255, 192, ...
D	Channel Disabled	14	<input type="checkbox"/>			Validity Flag	0, 0, 0	0, 192, 1...
A	Arithmetic Error (math calculation er...	15	<input checked="" type="checkbox"/>			Informational F...	0, 0, 0	255, 255, ...
<	Logger Invalid	16	<input checked="" type="checkbox"/>			Validity Flag	0, 0, 0	255, 0, 0
E	Edited	20	<input type="checkbox"/>			Informational F...	0, 0, 0	223, 255, ...
f	Floor Limit	21	<input type="checkbox"/>			Informational F...	0, 0, 0	192, 255, ...
c	Ceiling Limit	22	<input type="checkbox"/>			Informational F...	0, 0, 0	255, 192, ...
z	Zero Adjusted	33	<input type="checkbox"/>				0, 0, 0	255, 192, ...
Q	Quality Assured	34	<input type="checkbox"/>				0, 0, 0	255, 192, ...
e	Site Malfunction	35	<input type="checkbox"/>				0, 0, 0	255, 128, ...
a	Audit	36	<input type="checkbox"/>	AZ - Q C Audit (A...			0, 128, 0	0, 0, 0, 0
p	Precision Check	37	<input type="checkbox"/>	AX - Precision Che...			0, 128, 0	0, 0, 0, 0
o	Other	38	<input type="checkbox"/>				0, 0, 192	0, 0, 0, 0
R	Rate of Change Exceeded	114	<input type="checkbox"/>	AN - Machine Mal...	R - Suspect Rate of...	Validity Flag	0, 0, 0	255, 0, 2...
H	High-High Alarm	115	<input type="checkbox"/>			Informational F...	128, 0, 1...	255, 0, 0
L	Low-Low Alarm	116	<input type="checkbox"/>			Informational F...	128, 0, 1...	255, 255, ...
h	High Alarm	117	<input type="checkbox"/>			Informational F...	192, 0, 1...	255, 128, ...
l	Low Alarm	118	<input type="checkbox"/>			Informational F...	192, 0, 1...	255, 255, ...
J	High Rate of Change Exceeded	119	<input type="checkbox"/>			Informational F...	192, 0, 1...	255, 255, ...
j	Low Rate of Change Exceeded	120	<input type="checkbox"/>			Informational F...	192, 0, 1...	255, 255, ...
V	Dig Info#1	121	<input type="checkbox"/>				0, 0, 0	255, 255, ...
W	Dig Info#2	122	<input type="checkbox"/>				0, 0, 0	255, 255, ...
X	Dig Info#3	123	<input type="checkbox"/>				0, 0, 0	255, 255, ...
Y	Dig Info#4	124	<input type="checkbox"/>				0, 0, 0	255, 255, ...
Z	Dig Info#5	125	<input type="checkbox"/>				0, 0, 0	255, 255, ...
S	Site Visit	130	<input type="checkbox"/>			Informational F...	0, 0, 192	255, 255, ...
s	Site Activity	131	<input type="checkbox"/>			Informational F...	255, 255, ...	0, 0, 255
>	Some Data Missing	200	<input type="checkbox"/>				0, 0, 0	255, 255, ...
t	Out of Control (Partial)	201	<input type="checkbox"/>			Informational F...	0, 0, 0	255, 255, ...

Cell Color Codes in Flags Editor

All data is color-coded based on the flag-to-color mappings listed in the **Flags Editor**. AirVision is loaded with some default mappings, but you can customize this for your system. The color mappings are global to all users for consistency.

Flags Editor

Flag:

Description:

Mapped AIRNow Code:

Mapped AQS Null Code:

Flag Type:

Back Color:

Fore Color:

Priority:

Flag	Description	Priority	Invalidates Data	Mapped AQS Null Code	Mapped AIRNow Code	Flag Type	Fore Color	Back Color
I	Invalidated By Edit	2	<input checked="" type="checkbox"/>			Validity Flag	0, 0, 0	255, 255, 0
T	Out of Control	3	<input checked="" type="checkbox"/>			Validity Flag	0, 0, 0	255, 0, 0
?	Suspect	3	<input type="checkbox"/>	TS - Holding Time or			0, 0, 0	128, 128, 0
P	Power Failure	5	<input type="checkbox"/>	AV - Power Failure (0, 0, 0	255, 0, 0
B	Bad Status	6	<input type="checkbox"/>	AN - Machine Malfu		Validity Flag	0, 0, 0	255, 128, 0
C	Calibration	7	<input checked="" type="checkbox"/>	AY - Q C Control Poi	B - Bad	Validity Flag	0, 0, 0	0, 255, 25
M	Maintenance	8	<input checked="" type="checkbox"/>	BA - Maintenance/R		Validity Flag	0, 0, 0	192, 255, 0
m	Marked Maint by edit	9	<input type="checkbox"/>	BA - Maintenance/R			0, 0, 0	255, 192, 0
O	Overrange	10	<input type="checkbox"/>	AN - Machine Malfu			0, 0, 0	128, 255, 0
F	Boiler Offline	11	<input type="checkbox"/>			Validity Flag	255, 255, 0	128, 128, 0
+	Max Exceeded	12	<input checked="" type="checkbox"/>	AN - Machine Malfu		Validity Flag	0, 0, 0	128, 0, 0
-	Min Exceeded	13	<input checked="" type="checkbox"/>	AN - Machine Malfu		Validity Flag	0, 0, 0	255, 192, 0
D	Channel Disabled	14	<input checked="" type="checkbox"/>			Validity Flag	0, 0, 0	0, 192, 19
A	Arithmetic Error (math calculation erro	15	<input type="checkbox"/>			Informational Fla	0, 0, 0	255, 255, 0
<	Logger Invalid	16	<input checked="" type="checkbox"/>			Validity Flag	0, 0, 0	255, 0, 0
E	Edited	20	<input type="checkbox"/>			Informational Fla	0, 0, 0	223, 255, 0
f	Floor Limit	21	<input type="checkbox"/>			Informational Fla	0, 0, 0	255, 0, 25
c	Ceiling Limit	22	<input type="checkbox"/>			Informational Fla	0, 0, 0	255, 192, 0

Flags Editor in Configuration Editors

In addition, AirVision uses two font changes to represent data in the data editor:

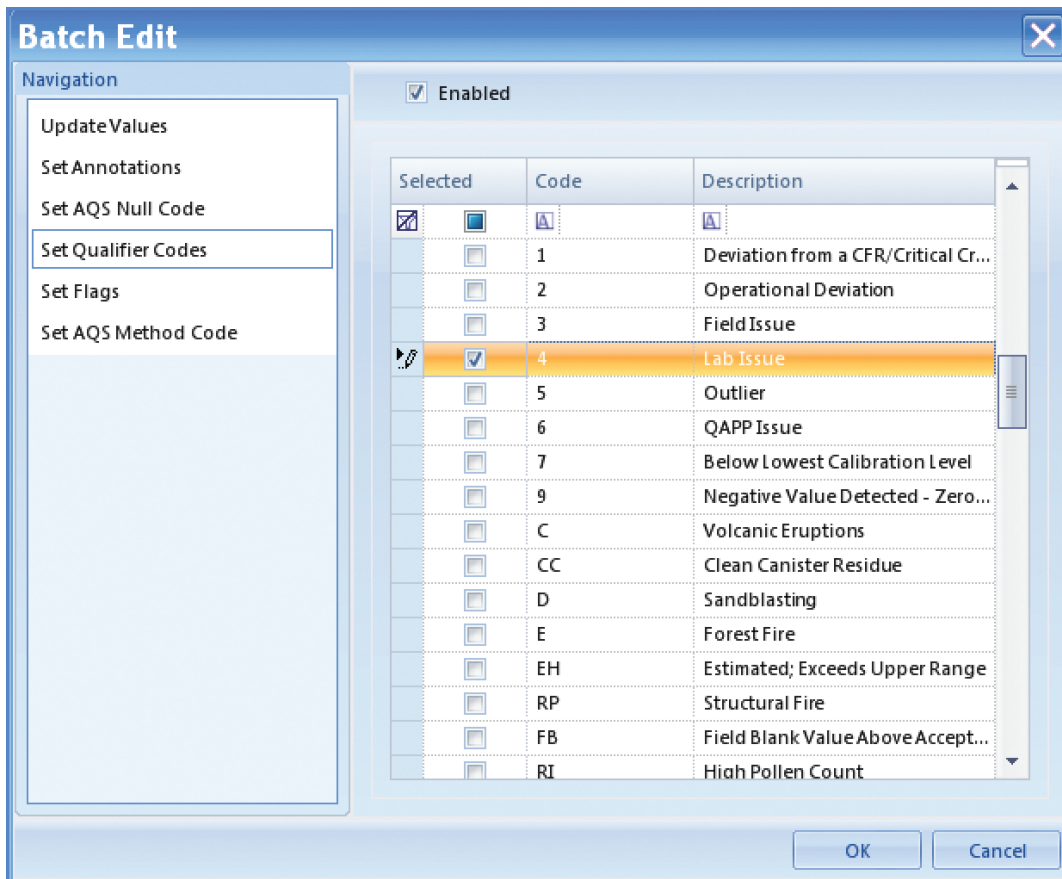
- ◆ **Bold** values represent data that does not match the raw database (edited values)
- ◆ *Italics* values represent data that has an annotation. Hover the mouse pointer over data values to see details of annotations.

The Flags Editor also defines the default mapping of EPA null codes when an invalid hour is exported in the AQS reports. If no null code is defined in the Data Editor for that point, AirVision will check this table to see if any flag on the data is mapped to a null code, and if so, that code is reported. If more than one flag is on the data and maps to multiple codes, the highest priority (lowest number) is reported.

Right-Click Options

Each of the three non-graphical data editors support select, shift-select, CTRL-select, and click-drag selection capabilities, and a right-click menu options. Right-click a data point in the **Value** column to bring up the following menu options:

- ◆ **Restore from Raw** copies value from the raw database to the final **Value** and resets flags
- ◆ **Restore to Original**
- ◆ **Lock and Unlock** Lock keeps the data from being edited. (If user has been granted security permissions)
Unlock allows the data that had been locked to be edited. (If user has been granted security permissions)
- ◆ **Set to Minimum Detectable Limit** sets data value to MDL configured in Parameter Editor
- ◆ **Set AQS Code** brings up a pick list to apply new AQS null codes
- ◆ **Set Qualifier Code** brings up a selection box for AQS qualifier (exception) codes
- ◆ **View All Flags** (for single data points only) shows all data logger and system flags and allows you to change or clear flags. Multiple flags can be displayed in each cell.
- ◆ **Set Annotations** brings up an annotation screen so you can add an annotation
- ◆ **Batch Editor** allows you to take multiple edit actions
- ◆ **Approve** - See Application Notes "Using the Data Grade Levels" at www.agilaire.com/application-notes.



Batch Edit with Set Qualifier Codes Enabled

Cross-Tab Data Editor

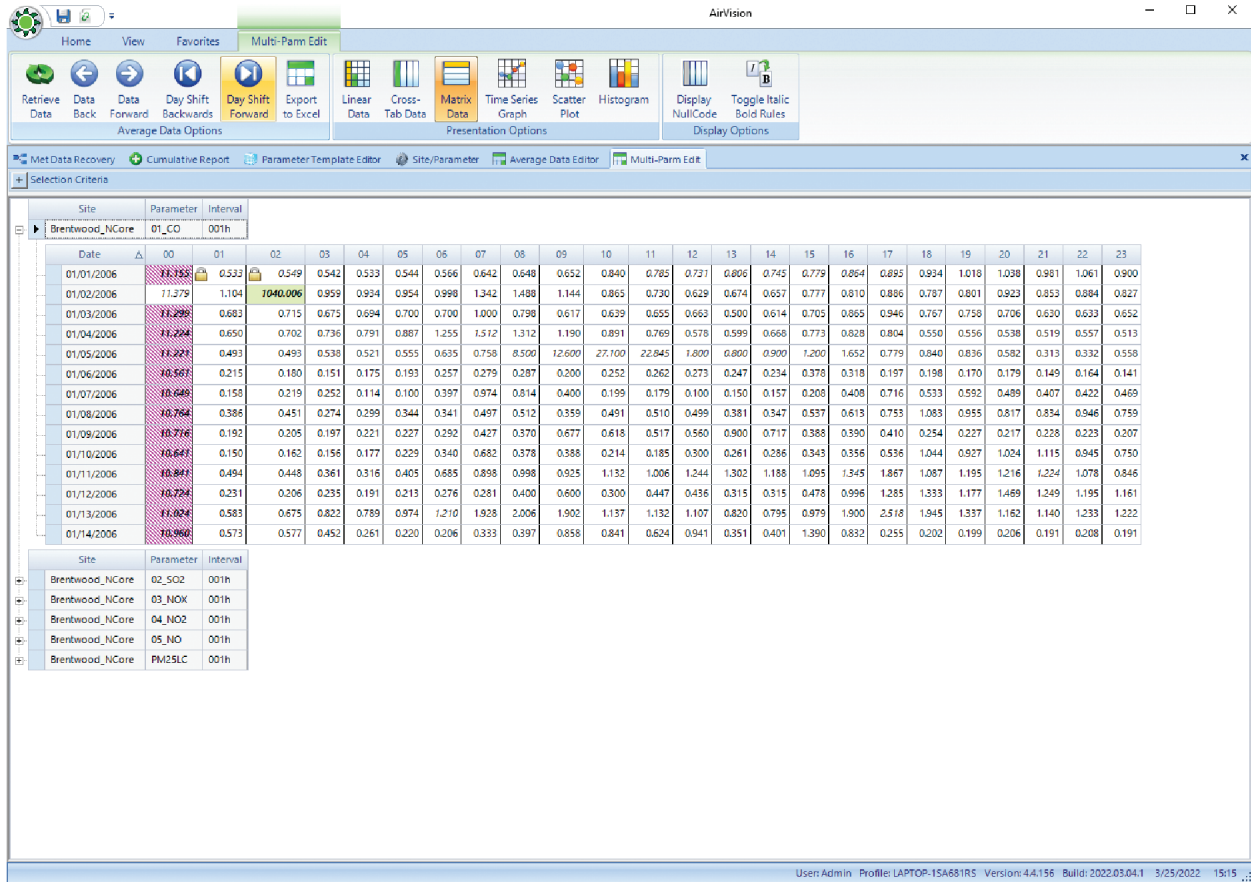
The **Cross-Tab Data Editor** shows Parameters as columns and sequences rows by date/time in ascending order and provides the same right-click menu as the Linear Data Editor.

	Brentwood_NC ore 01_CO 001h	Brentwood_NC ore 02_SO2 001h	Brentwood_NC ore 03_NOX 001h	Brentwood_NC ore 04_NO2 001h	Brentwood_NC ore 05_NO 001h	Brentwood_NC ore PM25LC 001h
Date	Final Value	Final Value	Final Value	Final Value	Final Value	Final Value
1/1/2006 00:00	11.155	113	223	92	130	16
1/1/2006 01:00	0.533	6	12	10	1	18
1/1/2006 02:00	0.549	5	13	10	1	19
1/1/2006 03:00	0.542	5	13	11	2	77
1/1/2006 04:00	0.533	7	33	28	2	21
1/1/2006 05:00	0.544	6	16	13	2	20
1/1/2006 06:00	0.566	9	17	15	1	21
1/1/2006 07:00	0.642	11	20	17	3	21
1/1/2006 08:00	0.648	9	17	14	4	24
1/1/2006 09:00	0.652	6	26	17	9	26
1/1/2006 10:00	0.840	17	56	25	32	31
1/1/2006 11:00	0.785	10	26	15	11	31
1/1/2006 12:00	0.731	6	27	15	12	27
1/1/2006 13:00	0.806	12	29	17	11	26
1/1/2006 14:00	0.745	6	25	17	9	28
1/1/2006 15:00	0.779	8	30	21	9	26
1/1/2006 16:00	0.864	11	43	27	15	29
1/1/2006 17:00	0.895	10	46	25	20	35
1/1/2006 18:00	0.934	11	51	25	25	34
1/1/2006 19:00	1.018	8	51	24	26	37
1/1/2006 20:00	1.038	17	62	24	37	41
1/1/2006 21:00	0.981	9	74	28	45	45
1/1/2006 22:00	1.061	18	78	29	49	50
1/1/2006 23:00	0.900	13	53	25	27	48
1/2/2006 00:00	11.379	120	233	95	137	41
1/2/2006 01:00	1.104	23	71530	22119	49072	54114
1/2/2006 02:00	1040.006	20689	62691	21013	41	61
1/2/2006 03:00	0.959	19	60	19	41	52
1/2/2006 04:00	0.934	18	75	21	53	43

Cross-Tab Data Editor from Data Editors menu

Matrix Data Editor

The **Matrix Data Editor** presents data in a format similar to the monthly report. If you select multiple parameters, they are grouped with a plus (+) symbol for expansion.



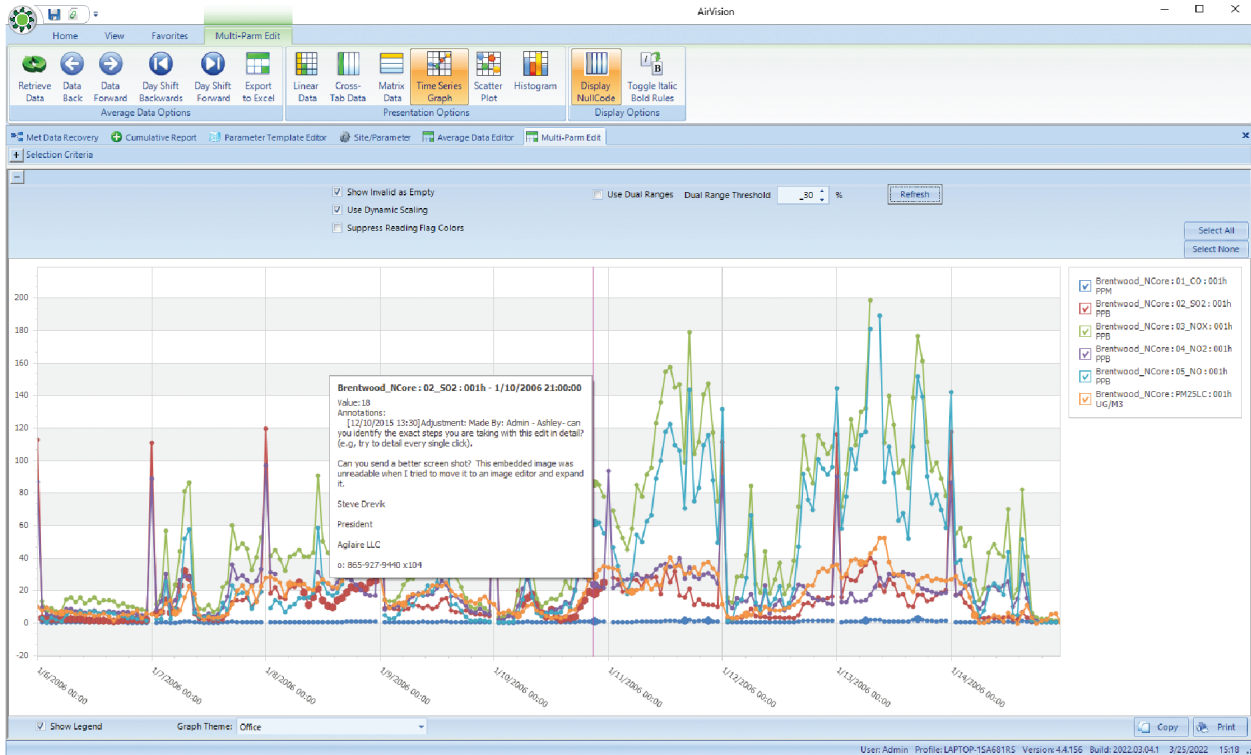
Matrix Data Editor from Data Editors menu

- **Note:** In the Cross-Tab and Matrix editor modes, ribbon controls allow you to show/hide additional columns to display null codes, and to toggle the bold/italic modes.

Time Series Graph

You can generate the **Time Series Graph** in two modes, for one or more parameters. In multi-parameter mode, you can group different parameters together for any time period. With the tools at the bottom of the screen, you can change the color scheme, remove or restore the legend, and print the graph.

The minus (-) sign in the upper left corner of the screen minimizes the selection criteria to make more room for the graph.



Time Series from Data Editors menu with multiple parameters selected

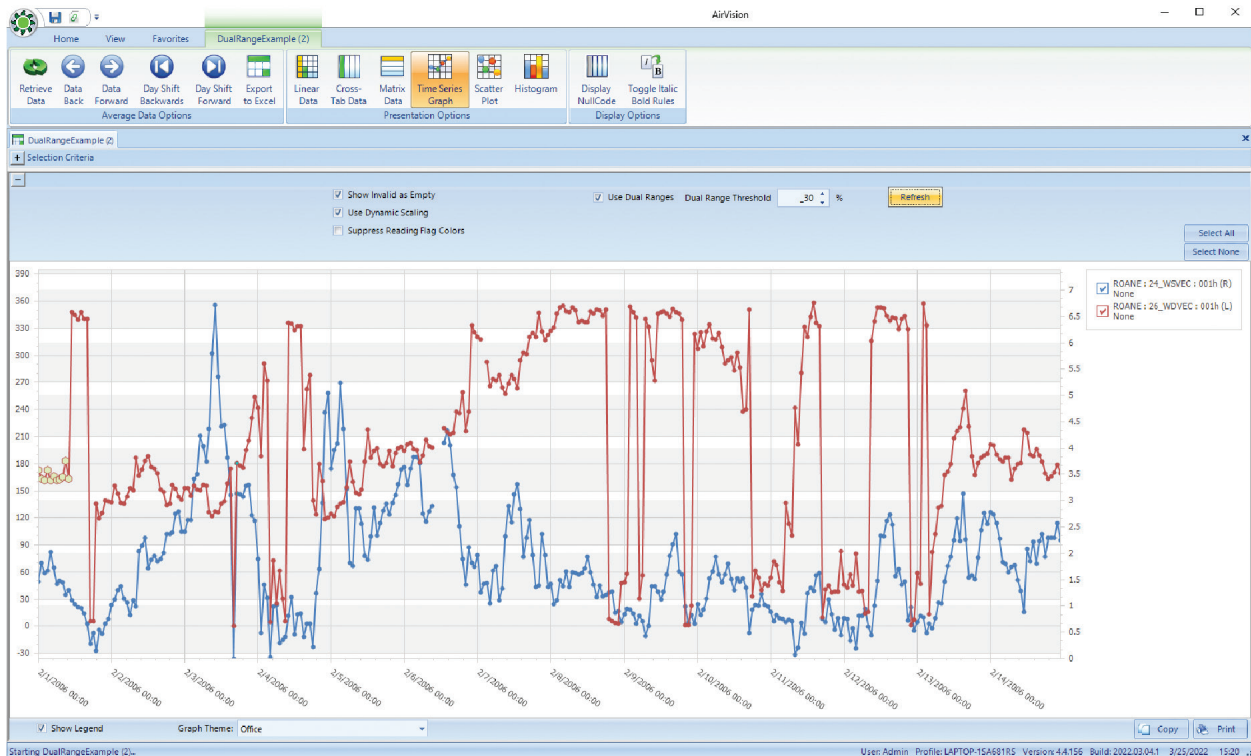
Use the mouse scroll wheel to zoom in or out; right-click and hold to drag the zoomed graph to a different data area.

Hover the cursor over a data point to see the specific date, time, and data value. If there is a flag on the data point the flag will also be displayed.

You can toggle between hiding or showing invalid data (e.g., data during calibration, maintenance, or analyzer failures).

When graphing parameters with two dramatically different full scale ranges, you may choose to use the **Dual Y-Axis Scale** option. When choosing this option, you must also choose the percentage (e.g., 10%, 20%) of the full scale range that is used as the 'breakpoint' for the secondary Y-axis. A value of 20% is common. Note that this function requires that Graph Maximum and Graph Minimum be set in the Parameter configuration. Graphs that have any parameters without limits configured cannot use the Dual Y-Axis function.

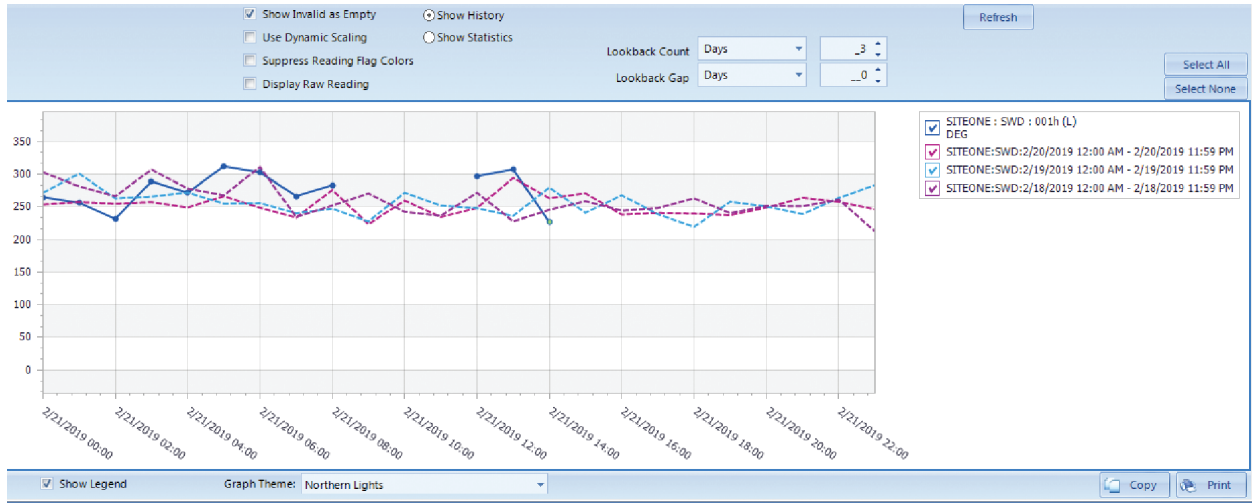
Suppress Flag Colors - If not selected, flagged data will be shown with “dots” with colors based on the Flag configuration. If selected, data will just be shown as the trend graph color. In both cases, hovering the cursor over the point will always show the flag, and the flag colors are still represented in the tabular/grid display. Suppressing the flag colors can be helpful when reviewing 1-minute data for several parameters during calibration.



Dual Y-Axis function

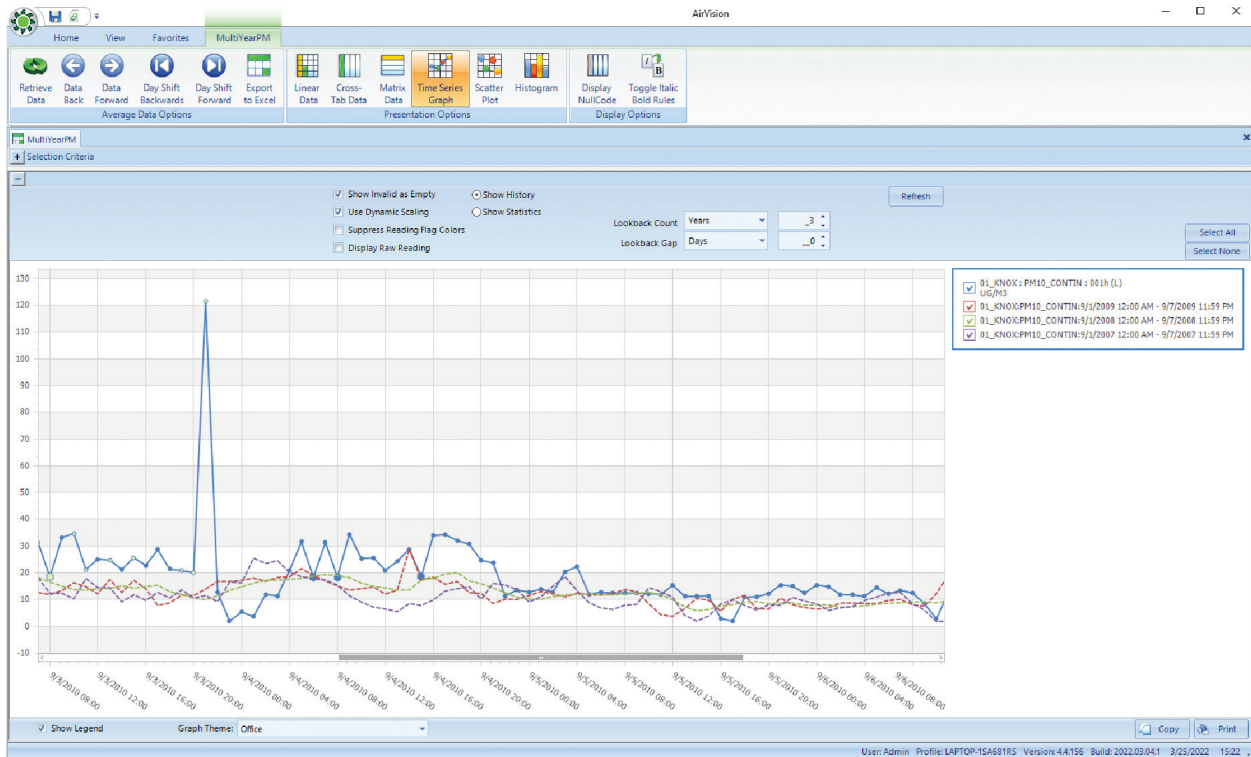
If you bring up the Time Series Graph in single parameter mode, you get additional options at the top of the graph

- ◆ **Show History** displays N previous years of data alongside main graph
- ◆ **Show Statistics** displays cumulative statistics of N previous years--min, max, avg
- ◆ **Lookback Count** select number of years, months, or days from the drop-down list
- ◆ **Lookback Gap** select number of years, months, or days from the drop-down list.



Time Series Graph with a single parameter selected

The **Refresh** button must be clicked to show any changes to selections. If the database contains data from previous years for the same parameter, those previous years can be graphed in the Time Series Graph alongside the current data by selecting **Show History** and the number of years you want to graph. Each previous year is graphed individually. Select **Refresh** to update the graph.



Time Series Graph with a single parameter and Show History option and hover over displaying date, and time data value

The **+/- Days** selector can be used to compile nearby days for the same hour into the comparison statistics. An example of how this is applied would be:

Current Data = 1/15/09,. Number of Years = 3, +/- Days = 1

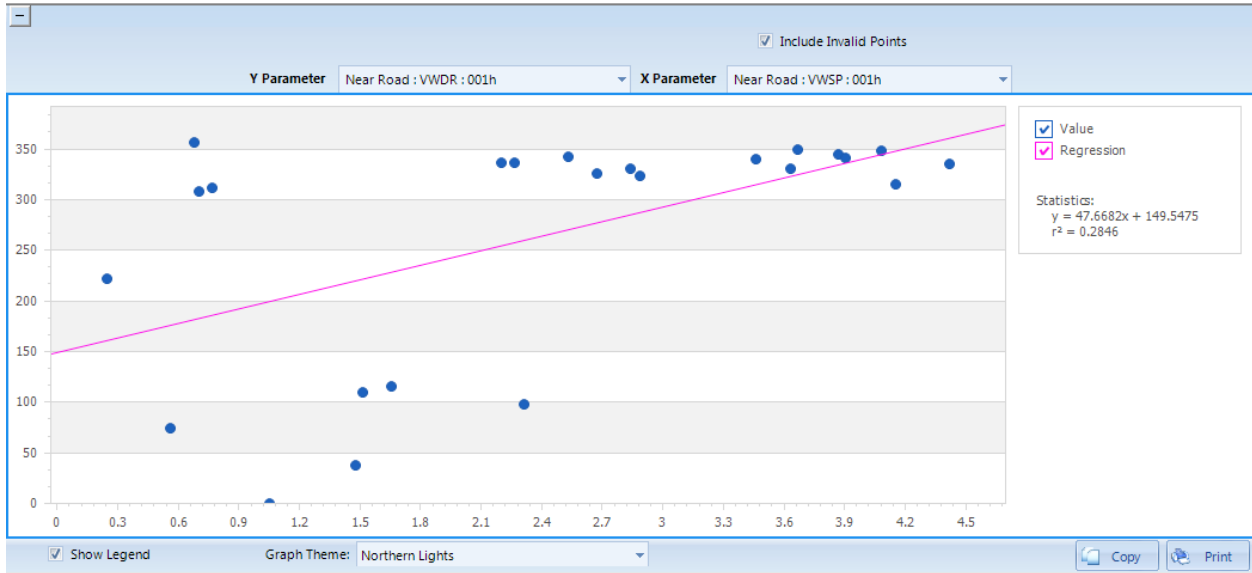
1/5/09 data at hour 00 would be compared against statistics using the following points:

- 1/4/06, hour 00
- 1/5/06, hour 00
- 1/6/06, hour 00
- 1/4/07, hour 00
- 1/5/07, hour 00
- 1/6/07, hour 00
- 1/4/08, hour 00
- 1/5/08, hour 00
- 1/6/08, hour 00

Obviously, selection of a large data set with a long look back period and large skews can be very processor day intensive for the client and the SQL server for large data sets. Agilaire recommends this tool be used for data sets of roughly a week or less.

Scatter Plot Graph

The **Scatter Plot Graph** allows any two parameters in the existing chart to be plotted in an X-Y chart. The Y axis parameter is the primary parameter and all data points are color coded according to the Data Flags color mappings to help distinguish outliers that have already been flagged.

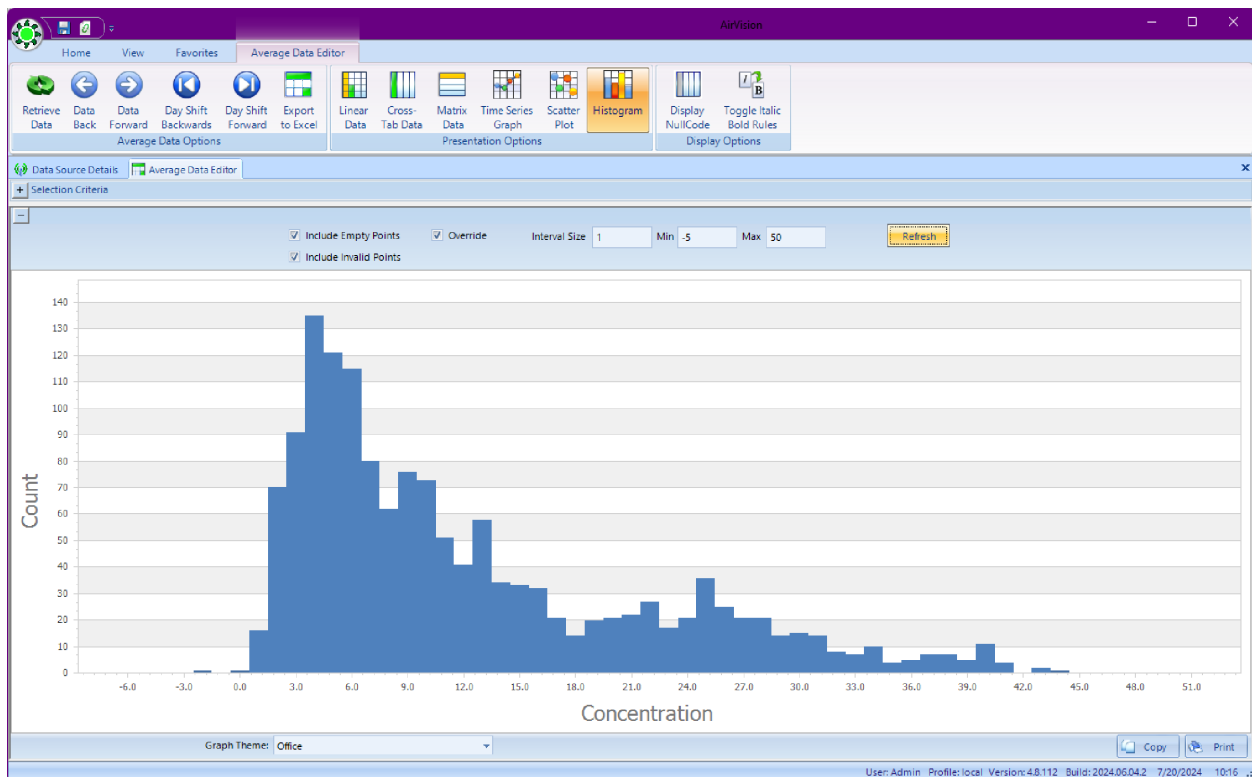


Scatter Plot Graph from Data Editors menu with hover over displaying date, time and data value

Note that the Scatter Plot Graph can create a linear regression line and formula for any two parameters.

Histogram

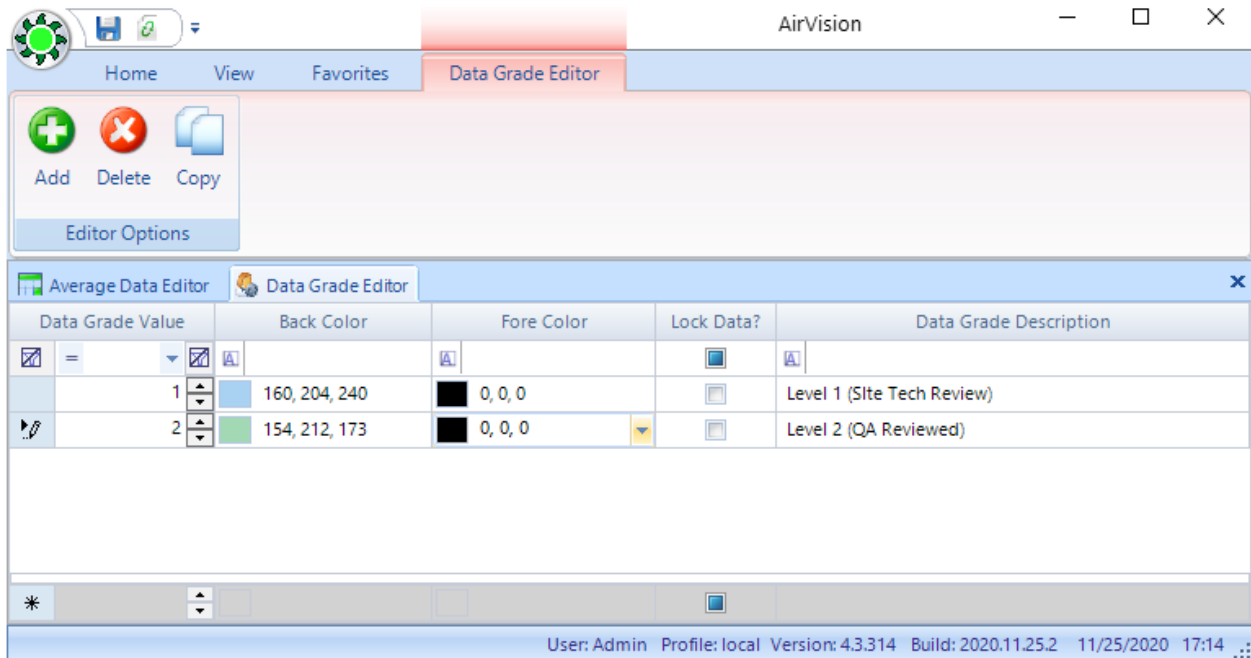
The **Histogram** provides a graph of the distribution of values for the entire data set, but it is designed to display only one parameter at a time, so be careful not to use multiple parameters. The default graph uses the graph maximum/minimum from **Configuration Editors > Site/Parameter**, but you can check **Override** to set a custom max/min specifically for the X axis of this graph.



Histogram from Data Editors menu with hover over displaying date, time and data value

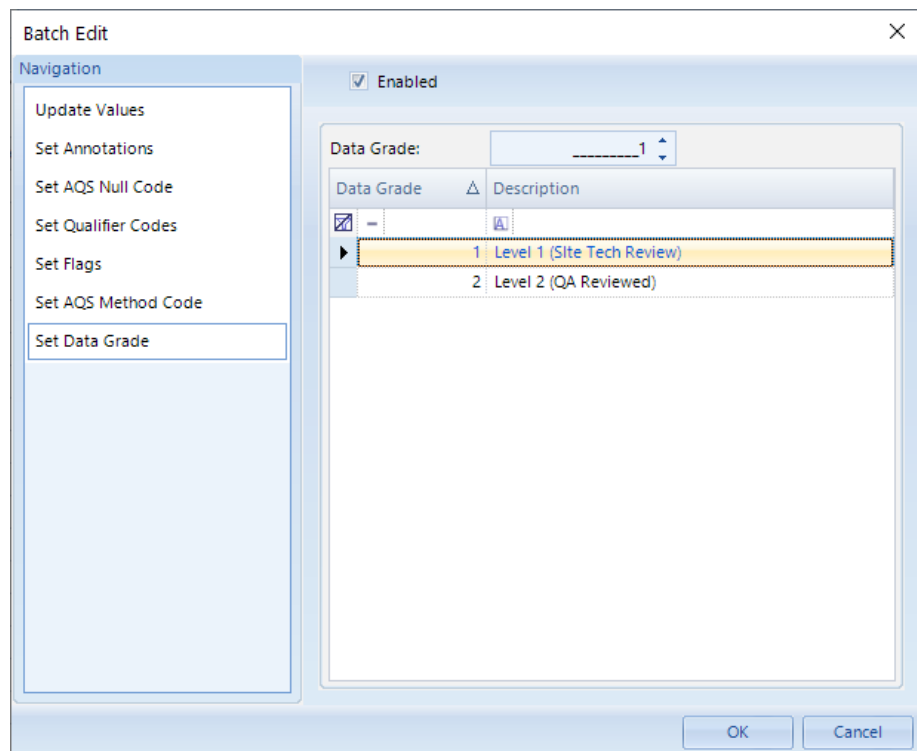
Using The Data Grade Levels For Managing QA Status

The **Data Grade Level Editor** lets you assign levels to the “Data Grade” field in the database (previously only used by ADVP) to track QA levels. For a simple common system, you can use the “Add” button to create two levels, one for site tech review, and the other for QA review complete.

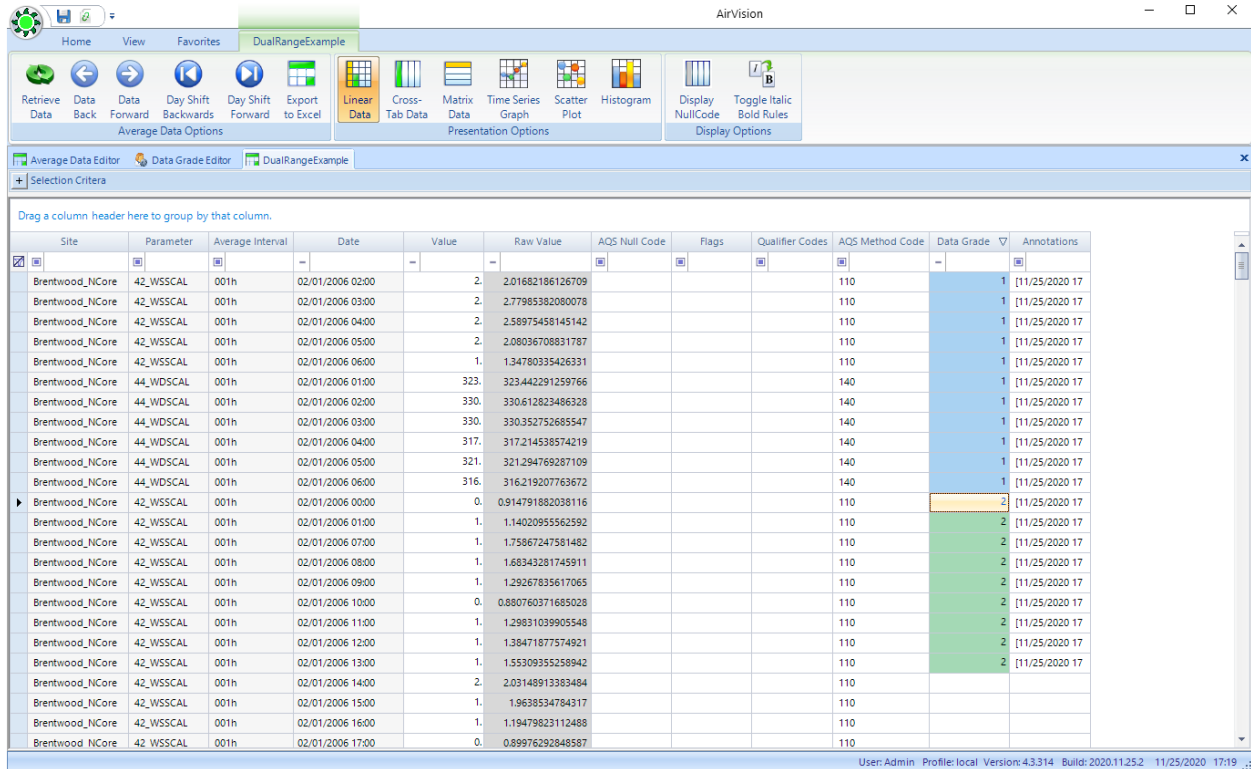


You can assign whatever background colors you want for the QA Level / Data Grade display field. A particular data grade can also be associated with locking the data, if the data is set to that data grade.

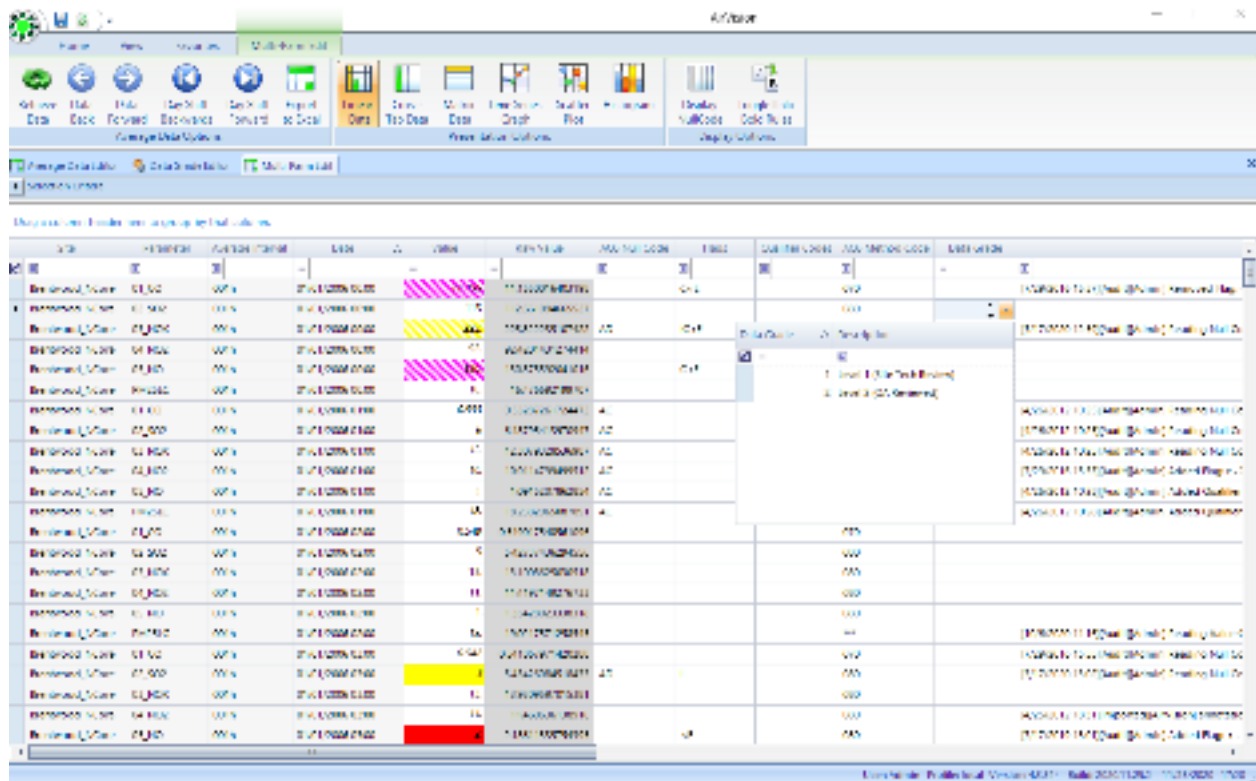
Once configured, the selections will appear in places like the Batch Reading Updater:



Marked data will appear as such in the Average Data Editor:



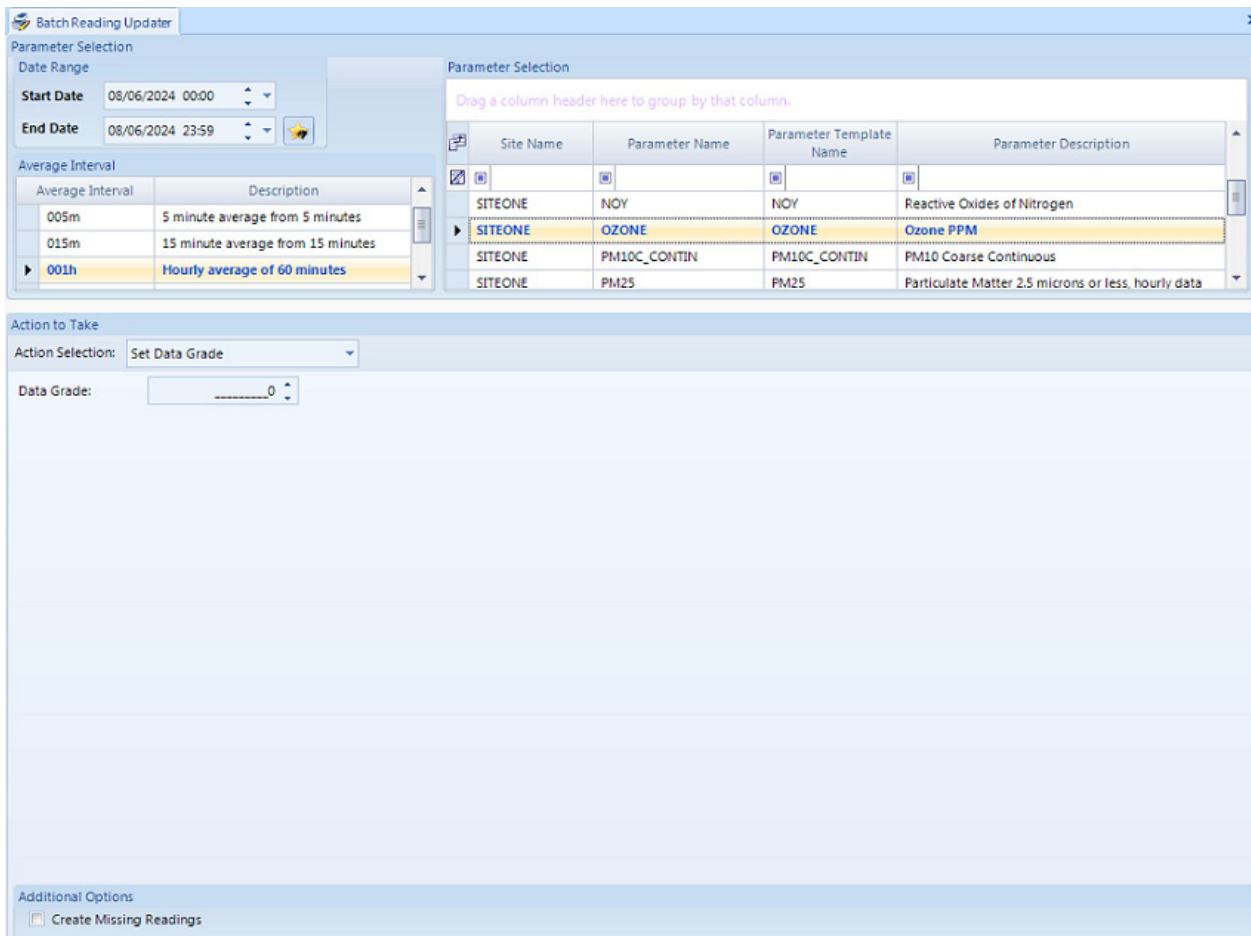
Or directly on that field in the Average Data Editor (you must **double-click** the field for the selection list):



Batch Reading Updater

This editor allows the user to do ‘blind’ edits on very large data sets without having to retrieve the data into memory in the Average Data Editor. The user simply selects the sites, parameters, time period, and the required action, much like the Batch Edit options in the Average Data Editor.

This tool also offers the option to “lock” data and prevent future edits until the data has been unlocked (again, using the Batch Edit tool). Locked data appears in the Average Data Editor with a padlock icon beside it. Data can be approved for users with Data Grade functionality.

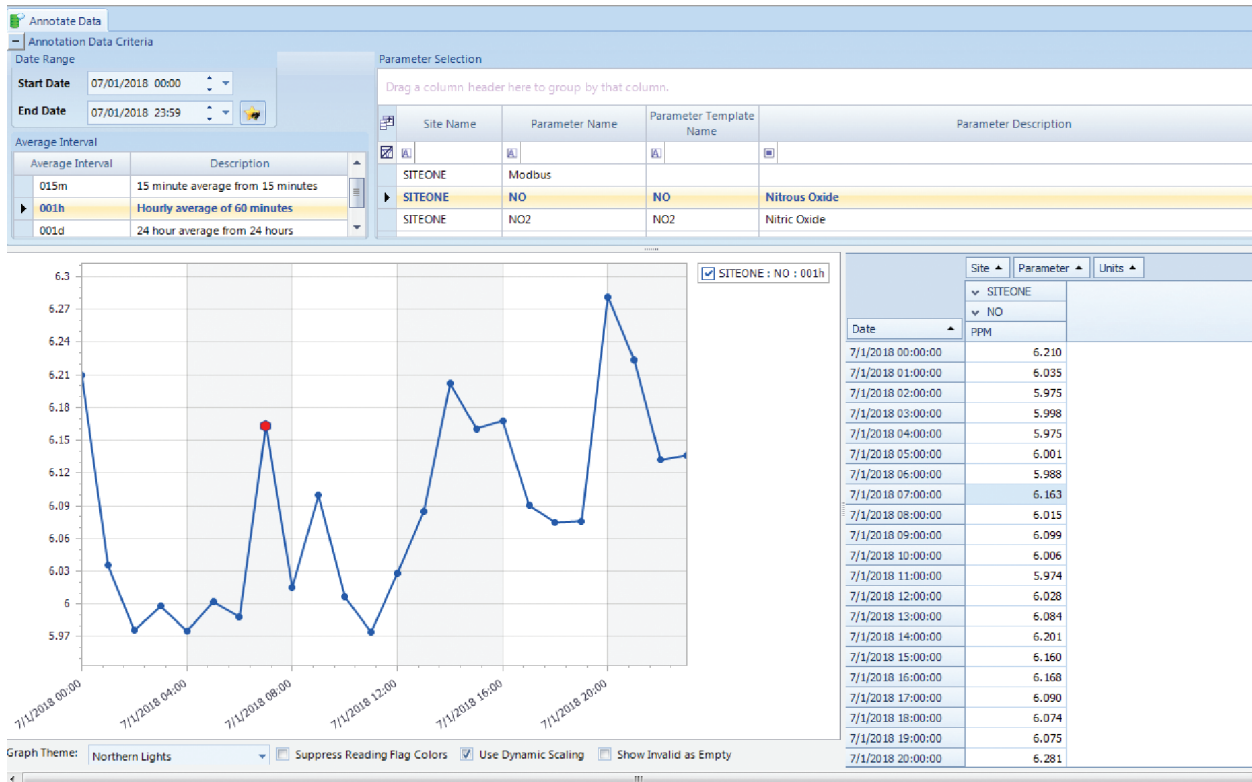


Batch Reading Updater

Annotate Data Editor

This editor allows only for the graphical review and annotation of data. It is designed to be used with the Security and Group Permissions system to give limited access to the data only for the purpose of entering annotation notes (e.g., comments for site technicians).

Like the regular editor, the user can query specific site/parameters and date time ranges, and see a split screen of graphical and tabular data. The user can then drag-select, shift-select, or CTRL-select a range of data points, and right-click to enter annotations.



Sample Data Editor

The **Sample Data Editor** allows manual entry of PM filter, air toxics samples, or other non-continuous data.

⇒ **Important!** The parameter must have been configured in the Site/Parameter Table as a (Particulate) Sample data type parameter for it to appear as a selection in the sample data editor.

To create a new sample data record, use the **Add** button on the ribbon. The required fields will be marked to the right with a red “!” icon.

You can optionally select a special blank type (field blank, lab blank) for appropriate notation in AQS reporting. You can also define the sample as a Scheduled Sample, whether it is considered a Creditable Sample, and also select to have the sample marked as non-reportable. The Sample Identifier is a free-form field to be used for the filter ID or some other ID code to trace the sample.

The editor can also be used to retrieve and edit previous samples using the date range selection tool and the **Retrieve Data** toolbar icon. Data can also be given a Data Grade.

Sample data can also be imported automatically using the optional File Import Tool.

Sample Data Editor

Note that the Editor will automatically check interval times between samples (and pickup delay, if available) against EPA standards, providing color notation of warnings.

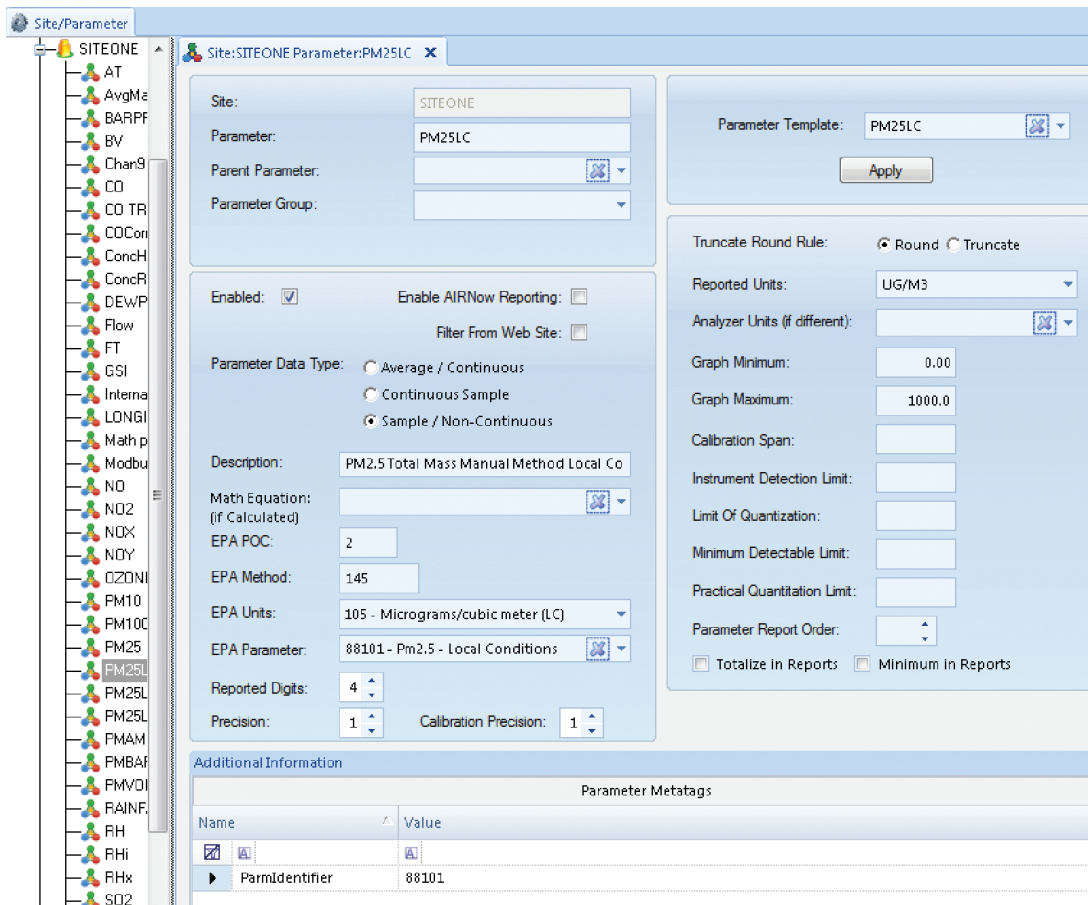
Methods for Sample Data Handling in AirVision

Manual filter/sample data can be handled in several different ways in AirVision, primarily depending on some of the options elected. These include:

1. Manual data entry of filter data through the Sample Data editor (base system)
2. Import of PM filter data files through File Import Tool, with follow-up editing for weights / lab data
3. Automatic polling of FRM samplers (using Direct Instrument Poll drivers) for Filter Data records, with follow-up editing for weights / lab data
4. Combining methods 2 or 3 with File Import Tool for final lab results.

This section will focus on methods 2 and 3, as the other methods follow easily from a study of the setups of these methods.

First, we consider the Site/Parameter setup. In most cases, we want to report to AQS the PM concentration value itself, as well as average ambient temperature, barometric pressure, and volume. We may also want to report min/max temperature, min/max barometric pressure, and flow covariance. For this document, we will call this “Extended AQS Reporting”. We would set up site/parameter records for each entry we wish to report to AQS.



- **Note:** *If you do not report average flow/temp/pressure to AQS, they can still be imported using the File Import Tool, but a Parameter record does not need to be configured at this point. For this document, we will call this the “Basic AQS Reporting”.*

Next, we consider the File Import Template we will use for either manual file import, or connected to the Direct Instrument Poll of our FRM sampler. If we want to use the Basic AQS Reporting method, we can use the default Partisol templates already packaged in the system. These map the pressure, temperature, and flow fields to sub-records inside the PM sample record:

Column Number	Data Field	Parameter Template	Parse Format	Flag Map
1	Sample Identifier	PM25LC		
5	Date		yyyy/MM/dd	
6	Time		HH:mm	
11	Value	PMFLOWCOV		
12	Sample Total Flow	PM25LC		
13	Value	PMMINTEMP		
14	Sample Ambient Temp	PM25LC		
15	Value	PMMAXTEMP		
19	Value	PMMINBP		
20	Sample Barometric Press	PM25LC		
21	Value	PMMAXBP		
38	Value	PMSAMPTIM		

Note that the flow, temperature, and pressure are data fields **within** the PM25LC sample record. They are not stored separately as parameter records, and thus in this method, AQS records cannot be generated independently for those measurements.

The screenshot displays the 'File Import Configuration' window in AirVision. The 'File Schema' section is active, showing the following configuration:

- Template Name:** Partisol 2025 Filter Data_2Ximport
- File Layout:**
 - Number of Header Lines: 0
 - Number of Footer Lines: 0
 - Minimum Number of Columns: (empty)
 - Field Delimiter: Comma
 - Sample Type: Standard
- Parameter Information:**
 - Parameter Matching: Match Parameter by Column Number, Match Parameters from Row, Match Parameters from Header
 - Data Type: Average / Continuous, Logbook, Sample / Non-Continuous, Annotation, Calibration
 - Duration Code: 7 - 24 HOURS
 - Frequency Code: 3 - EVERY 3RD DAY
 - Blank Type: (empty)
- Existing Data:**
 - Do Not Modify Existing Data
 - Update Field Values
 - Reset Record And Overwrite

The 'File Column Mapping' table is shown below:

Column Number	Data Field	Parameter Template	Parse Format	Flag Map
1	Sample Identifier	PM2SLC		
5	Date		yyyy/MM/dd	
6	Time		HH:mm	
11	Value	PMFLOWCOW		
12	Sample Total Flow	PM2SLC		
12	Value	PMVOLUME		
13	Value	PMMINTEMP		
14	Value	PMAMBTMP		
14	Sample Ambient Temp	PM2SLC		
15	Value	PMMAXTEMP		
19	Value	PMMINBP		
20	Value	PMBARPRESS		
20	Sample Barometric Press	PM2SLC		
21	Value	PMMAXBP		
38	Value	PMSAMPTIM		

At the bottom of the table, there is an 'Add ...' button and an 'Add Column Mapping' button.

The status bar at the bottom of the window shows: User: Admin Profile: LAPTOP-15A681R5 Version: 4.4.156 Build: 2022.03.04.1 3/25/2022 15:34

Double Import Method

The same column can be used more than once to bring in flags across multiple parameters, or to import a value into several parameters.

Example - in a case of a BAM-1022 that does both PM25 and PM10, we want to apply the flag to both pollutants:

Column Number	Data Field	Parameter Template	Parse Format	Flag Map
1	Date/Time		yyyy-MM-dd HH:mm:ss	
3	Value	PM25LC		
4	Value	PM10C_CONTIN		
5	Value	AMBTEMP		
6	Value	RELHUM		
10	Flags	PM25LC		BAM1022Status
10	Flags	PM10_CONTIN		BAM1022Status

If we use the Extended template, our records would look like this:

Sample Data Editor

Selection Criteria

Drag a column header here to group by that column.

Site	Parameter	Units	Sample Time	Value	Sample ID	Null Code	Qualifier Code	Frequency Code	Duration Code	Blank Type	Method Code	Creditable	Scheduled
SITEONE	PM25LC	UG/M3	05/12/2014 00:00	5.3				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/13/2014 00:00	10.9				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/14/2014 00:00	10.2				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/15/2014 00:00	6.0				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/16/2014 00:00	8.7				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/17/2014 00:00	12.1				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/18/2014 00:00	3.2				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/19/2014 00:00	6.8				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/20/2014 00:00	5.8				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	12/16/2014 00:00	15670.9				1 - EVERY DAY	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/04/2015 00:00	2.5				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	11/24/2015 00:00	79.0				3 - EVERY 3RD D	7 - 24 HOURS		145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	ug	09/01/2017 00:00	5000		AA		3 - EVERY 3RD D	7 - 24 HOURS	LAB - Filter	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	ug	10/10/2017 00:00	1000				3 - EVERY 3RD D	7 - 24 HOURS	FIELD - Filte	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	ug	10/11/2017 00:00	1000				3 - EVERY 3RD D	7 - 24 HOURS	FIELD - Filte	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Details Extended Details Annotations

Site: SITEONE Units: ug Frequency Code: 3 - EVERY 3RD DAY Creditable Sample:

Parameter: PM25LC Sample ID: Duration Code: 7 - 24 HOURS Scheduled Sample:

Sample Time: 09/01/2017 00:00 AQS Method Code: 145 Blank Filter Type: LAB - Filter Not Taken to Site Exclude From Reporting:

Sample Value: 500.00000 Null Code: AA - Sample Pressure out of Limit

Here, the flow, pressure, temp data are all available for AQS reporting, but not stored as fields within the PM25 record. But that's OK, we can still access that data when using the Calculator.

The Sample Calculator

The calculator allows the editor to determine PM concentration from volume, temperature, pressure, and tare/final weight data manually entered into the editor (users with the File Import Tool have the option, of course, to directly import the concentration data).

The screenshot shows the 'Sample Data Editor' window. At the top, there's a 'Selection Criteria' section. Below it is a large table with columns: Site, Parameter, Units, Sample Time, Value, Sample ID, Null Code, Qualifier Code, Frequency Code, Duration Code, Blank Type, Method Code, Creditable, and Scheduled. The table contains multiple rows of data for 'SITEONE' with 'PM25LC' parameter. Below the table is the 'Sample Details' panel, which includes fields for Site, Parameter, Sample Time, Sample Values, Units, Sample ID, AQS Method Code, Frequency Code, Duration Code, Blank Filter Type, Null Code, Creditable Sample, and Scheduled Sample. A red arrow points to a calculator icon in the 'Sample Values' field.

This screenshot shows a close-up of the data table from the previous image. A context menu is open over a row with a value of 75. The menu items are: Set to Minimum Detectable Limit, Recalculate Sample (highlighted), Set AQS Null Code, Set Qualifier Codes, View All Flags, Set Annotations, Delete Annotations, Batch Edit, Show Children, Export to Excel, Analyze/Export Selected, and Copy Selected to Clipboard. Below the table, there are input fields for units (ug), Sample ID, Method Code, Duration Code (7 - 24 HOURS), Blank Filter Type (FIELD - Filter Removed Before Inst), and Null Code.

Click the calculator button to open the calculator for that record. The user can also drag-select multiple rows, right click, and select "Recalculate Sample" to calculate the concentration for multiple samples.

When you click the calculator button, a popup screen will appear for data entry:

Particulate Sample Calculator

Particulate Calculation

Site-Parameter: NCore2 : PM25_FRM

07/01/2024 00:00

Calculation Input Parameters

Final Weight: 323.19220 (mg)

Initial Weight: 323.00400 (mg)

Sample Weight: 0.18820 (mg)

Time: 1440 (minutes)

Site Environment Parameters

Formula Type

Actual

Theoretical

Without P/T Correction (PM25)

Populate from Site Samples/Averages

Flow: 24.00000 (L/min)

Pressure: 760.00000 (mm Hg)

Temperature: 275.05000 (K)

Calculation

Calculate Sample 5.44600

OK Cancel

Here, all data can be manually entered, and “Calculate Sample” used to calculate the concentration. If using the Basic method, the flow, pressure, and temperature will already be populated from the meta data in the main PM data record.

For the Extended method, flow/pressure/temperature data can be filled using the “Populate from Site Samples/Averages” button. The algorithm AirVision uses to fill these records are as follows:

1. Try to find sample data records with the same date/time from parameters with the parameter templates PMVOLUME, PMBARPRESS, and PMAMBTEMP.
2. If these do not exist, try to find hourly data records for that day with parameter templates AMBTEMP and BARPRESS, and create 24-hour totals/averages from those parameters.

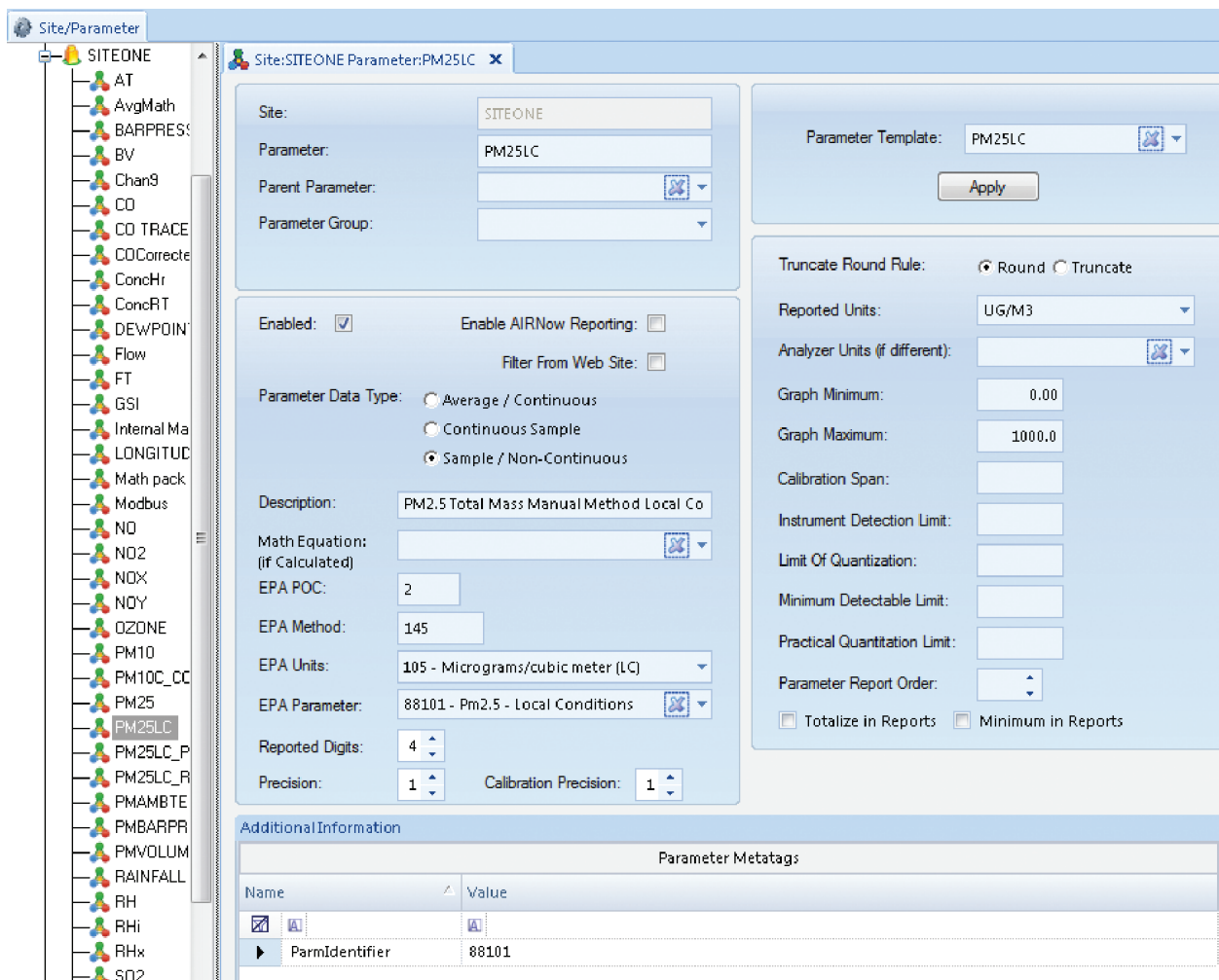
Once the flow, pressure, temperature, and tare/final weights have been entered, the “Calculate Sample” button will calculate the concentration value. “OK” will save the result.

Co-Located Samplers

In the Basic mode, it would be easy to copy a File Import Template and create alternate templates and alternate Parameter Templates (e.g., PM25LC_2, PMAMBTEMP_2, etc).

Because the calculator has some elements hard-coded to particular parameter templates, using the Extended mode can be problematic for co-located samplers configured at the same site.

For this reason, it may be easier for the user to configure a secondary “pseudo site” to represent a co-located sampler. The co-located site can have the same site/county code, and a similar list of parameters (and use the standard parameter templates). In this case, the only difference would be the Site Name, and the POC settings in the parameters:



In this case, the parameter just appears in AQS as the same site, with a different POC code:

Report Output															
RD	I	47	093	7001	88101	2	7	105	145	20130101	00:00	5.7	3	4	
RD	I	47	093	7001	88101	2	7	105	145	20130104	00:00	14.6	3	4	
RD	I	47	093	7001	88101	2	7	105	145	20130107	00:00	13.9	3	4	
RD	I	47	093	7001	88101	2	7	105	145	20130110	00:00	3	3		
RD	I	47	093	7001	88101	2	7	105	145	20130113	00:00	5.2	3		
RD	I	47	093	7001	88101	2	7	105	145	20130116	00:00	5.3	3		
RD	I	47	093	7001	88101	2	7	105	145	20130119	00:00	6.6	3		
RD	I	47	093	7001	88101	2	7	105	145	20130122	00:00	AQ	3		
RD	I	47	093	7001	88101	2	7	105	145	20130125	00:00	AQ	3		
RD	I	47	093	7001	88101	2	7	105	145	20130128	00:00	AQ	3		
RD	I	47	093	7001	88101	2	7	105	145	20140424	00:00	10	3	7	
RD	I	47	093	7001	88101	2	7	105	145	20140511	00:00	9.4	3	7	
RD	I	47	093	7001	88101	2	7	105	145	20140512	00:00	5.3	3		
RD	I	47	093	7001	88101	2	7	105	145	20140513	00:00	10.9	3		
RD	I	47	093	7001	88101	2	7	105	145	20140514	00:00	10.2	3		
RD	I	47	093	7001	88101	2	7	105	145	20140515	00:00	6	3		
RD	I	47	093	7001	88101	2	7	105	145	20140516	00:00	8.7	3		
RD	I	47	093	7001	88101	2	7	105	145	20140517	00:00	12.1	3		
RD	I	47	093	7001	88101	2	7	105	145	20140518	00:00	3.2	3		
RD	I	47	093	7001	88101	2	7	105	145	20140519	00:00	6.8	3		
RD	I	47	093	7001	88101	2	7	105	145	20140520	00:00	5.8	3		
RD	I	47	093	7001	88101	2	7	105	145	20141216	00:00	15670.9	1		
RD	I	47	093	7001	88101	2	7	105	145	20150504	00:00	2.5	3		
RD	I	47	093	7001	88101	2	7	105	145	20151124	00:00	79	3		
RB	I	47	093	7001	88101	2	7	077	145	LAB 20170901	00:00	AA			0
RB	I	47	093	7001	88101	2	7	077	145	FIELD 20171010	00:00	ZZ			
RB	I	47	093	7001	88101	2	7	077	145	FIELD 20171011	00:00	100			

Enhancements To The Sample Data Editor (Version 2.10)

The following enhancements were made to the Sample Data Editor:

- ◆ Additional fields were added to the meta data of the records, and to the File Import Tool:
 - Tare/Final Weight
 - End Time
 - Analysis Time
 - Cannister ID
 - MDL, Uncertainty Values

Note that the Sample Data Editor supports sorting and filtering on these fields in the Linear Mode:

The screenshot shows the 'Sample Data Editor' window. At the top, there is a 'Selection Criteria' section. Below it is a table with columns: Site, Parameter, Units, Sample Time, Value, Sample ID, Null Code, Qualifier Code, Frequency Code, Duration Code, Blank Type, Method Code, Creditable, and Scheduled. A red arrow points to the 'Value' column header. The table contains multiple rows of data for 'SITEONE' with 'PM25LC' parameter. Below the table is a 'Sample Details' section with fields for Site, Parameter, Sample Time, Sample Value, Units, Sample ID, AQS Method Code, Frequency Code, Duration Code, Blank Filter Type, Null Code, Creditable Sample, and Scheduled Sample. There is also a 'Qualifier Code' dropdown and a 'Description' field.

Thus, the user can easily search for PMFLOW under a certain value, flow covariance over a certain limit, etc, or just filter the samples based on Blank Type or Null Code.

The editor also supports selection of data points and the ability to add annotations to the data, much like the Average Data Editor, including italic marking of data points, and mouse-hover over to see the annotations:

Selection Criteria

Drag a column header here to group by that column.

Site	Parameter	Units	Sample Time	Value	Sample ID	Null Code	Qualifier Code	Frequency Code	Duration Code	Blank Type	Method Code	Creditable	Scheduled	Exclude From Reporting
ManualSamp1	PM25LC	UG/M3	11/04/2013 16:02	30	T8121974			3 - EVERY 3RD DAY	7 - 24 HOURS		333	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ManualSamp1	PM25LC	UG/M3	11/07/2013 00:00	44.2	T8121975			3 - EVERY 3RD DAY	7 - 24 HOURS		333	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ManualSamp1	PM25LC	UG/M3	11/10/2013 00:00	38.5	T8121975			3 - EVERY 3RD DAY	7 - 24 HOURS		333	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ManualSamp1	PM25LC	UG/M3	11/10/2013 00:00	32.9	T8121913			3 - EVERY 3RD DAY	7 - 24 HOURS		333	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ManualSamp1	PM25LC	UG/M3	12/20/2013 00:00	44.5	T8121975			3 - EVERY 3RD DAY	7 - 24 HOURS		333	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ManualSamp1	PM25LC	UG/M3	12/23/2013 00:00	34.1	T8121913			3 - EVERY 3RD DAY	7 - 24 HOURS		333	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
ManualSampleData : PM25LC - 12/20/2013 00:00:00 Value:44.5 Annotations: [11/6/2013 13:37]Weather Event: Made By: Admin - Heavy snowfall up near sampler input														

The Sample Data Editor also provides right-click options on selected data points for several functions like the Average Data Editor, including a Batch Edit function.

Drag a column header here to group by that column.

Site	Parameter	Units	Sample Time	Value	Sample ID	Null Code	Qualifier Code	Frequency Code	Duration Code	Blank Type	Method Code	Creditable	Scheduled
SITEONE	PM25LC	UG/M3	01/01/2013 00:00	5.7			4	3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	01/04/2013 00:00	14.6			4	3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	01/07/2013 00:00	13.9			4	3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	01/10/2013 00:00	3.0				3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	01/13/2013 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	01/16/2013 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	01/19/2013 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	01/22/2013 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	01/25/2013 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	01/28/2013 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	04/24/2014 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/11/2014 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/12/2014 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/13/2014 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/14/2014 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/15/2014 00:00					3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/16/2014 00:00	8.7				3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/17/2014 00:00	12.1				3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/18/2014 00:00	3.2				3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/19/2014 00:00	6.8				3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
SITEONE	PM25LC	UG/M3	05/20/2014 00:00	5.8				3 - EVERY 3RD D	7 - 24 HOURS	-	145	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

- Set to Minimum Detectable Limit
- Set AQS Null Code
- Set Qualifier Codes
- View All Flags
- Set Annotations
- Delete Annotations
- Batch Edit
- Show Children
- Export to Excel
- Analyze/Export Selected
- Copy Selected to Clipboard

Sample Details	Extended Details	Annotations
Site: SITEONE	Units: UG/M3	Frequency Code: 3 - EVERY 3RD DAY
Parameter: PM25LC	Sample ID:	Duration Code: 7 - 24 HOURS
Sample Time: 01/13/2013 00:00	AQS Method Code: 145	Blank Filter Type: -
Sample Value: 5.20000	Null Code:	
Creditable Sample: <input checked="" type="checkbox"/>	Qualifier Code	Description
Scheduled Samples: <input checked="" type="checkbox"/>	*	
Exclude From Reporting: <input type="checkbox"/>		

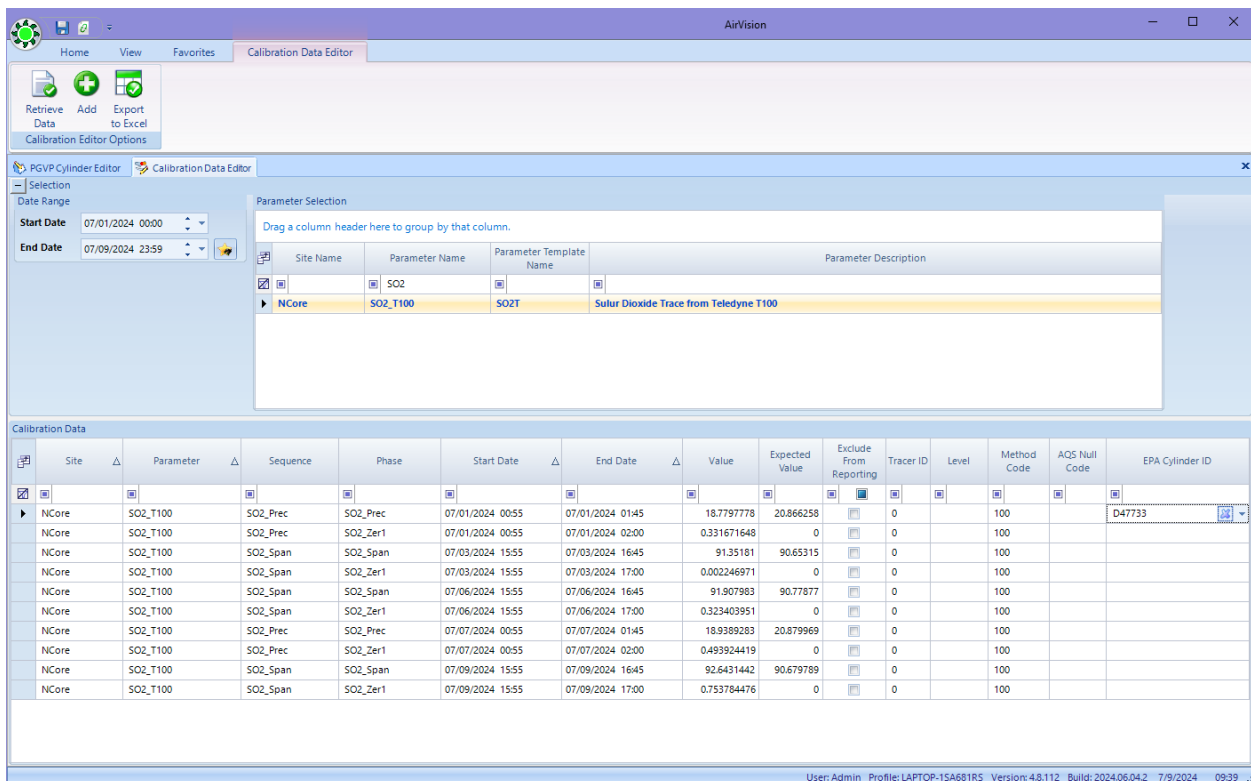
Calibration Data Editor

The **Calibration Data Editor** can be used to correct errors in calibration records collected from the data logger, or to add new records (e.g., to reflect a manually collected calibration).

To edit existing records, select the appropriate site/parameter and date range, and use the **Retrieve Data** ribbon icon.

You can edit dates, times, values, expected values, bottle/tracer IDs, or mark the record as non-reportable. However, there is no provision to delete a record.

To add a new record, press the **Add** icon on the ribbon. You will be prompted for the site, parameter, calibration program and phase: The record will be created in the editor, and the remaining record characteristics can be entered. The user may also define the calibration level of a phase (ZERO, PREC, etc). This is used primarily by the Cal Adjustment Tool and the AQS Precision Report function. The level will normally be added automatically by the system if the cal level is defined in Data Source Details for the cal phase, but the Cal Editor allows for updating old records or correcting data.

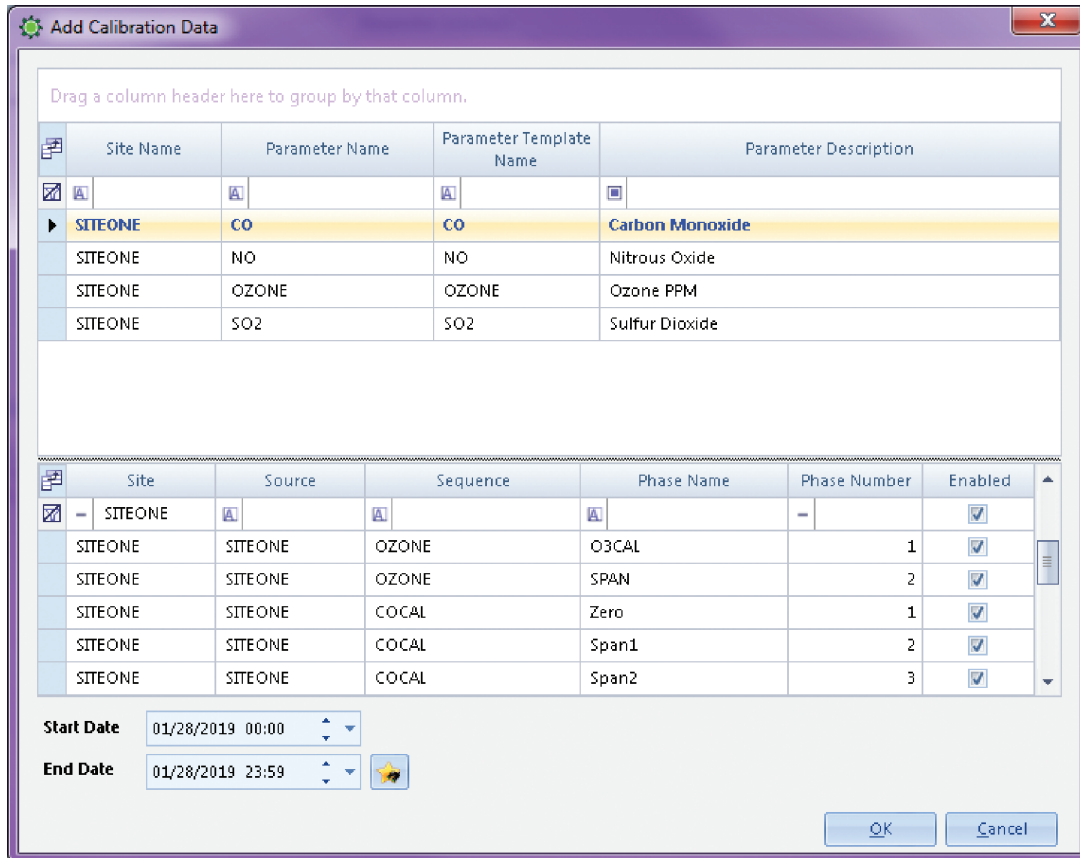


Calibration Data Editor

You may also add null codes, update levels, and update/add associations for cylinder IDs for the Protocol Gas Verification Program (PGVP).

To add a new calibration record, press the **Add** icon on the ribbon. You will be prompted for the site, parameter, calibration program and phase:

The record will be created in the editor, and the remaining record characteristics can be entered.



Adding Calibration Data in the Calibration Data Editor via the Add button on the ribbon

Lock/Unlock Data

The lock and unlock data is located in the Batch Reading Updater under Data Editors. Select from the query the Site and Parameter, the interval type, and the date range. Under Action to Take click the down arrow in the Action Selection field and select Set Readings Locked or Set Readings Unlocked, then click the Apply Action button on the Ribbon at the top.

The screenshot shows the 'Batch Reading Updater' interface. At the top left, there is an 'Apply Action' button with a green checkmark icon. Below it is the 'Reading Updater Options' section. The main area is divided into several sections:

- Parameter Selection (Date Range):** Start Date: 05/14/2019 00:00, End Date: 05/14/2019 23:59.
- Average Interval:** A table with columns 'Average Interval' and 'Description'. The '001h' interval is selected, with the description 'Hourly average of 60 minutes'.
- Parameter Selection (Table):** A table with columns 'Site Name', 'Parameter Name', 'Parameter Template Name', and 'Parameter Description'. The 'NOX' parameter for 'SITEONE' is highlighted.
- Action to Take:** Action Selection: Set Readings Locked (dropdown menu).
- Lock Readings:** A checkbox labeled 'Lock Readings' which is checked.

Average Interval	Description
005m	5 minute average from 5 minutes
015m	15 minute average from 15 minutes
001h	Hourly average of 60 minutes

Site Name	Parameter Name	Parameter Template Name	Parameter Description
SITEONE	NO	NO	Nitrous Oxide
SITEONE	NO2	NO2	Nitric Oxide
SITEONE	NOX	NOX	Oxides of Nitrogen
SITEONE	OZONE	OZONE	Ozone PPM

Special permissions exist in Security to assign a group (role) rights to lock data, and to unlock data, to define which users can access these functions.

LogBook Entry Editor

The **LogBook Entry Editor** allows you to make entries in a logbook that can then be seen in LogBook Reports. To make a logbook entry, open **LogBook Entry Editor** from the Editors menu.

Click the **New Log Entry** button in the upper left corner of the screen

In the bottom section of the screen enter a **Log Entry Time**, **User Entry Time**, select a **Category** from the drop-down list or select **New Category** and enter a different category, select a **User** and a **Site** from the drop-down lists

Enter the LogBook message in the **Entry Text** box and click **Save**.

The new entry information will be displayed in a row in the top section of the screen.

The screenshot displays the LogBook Entry Editor interface. It is divided into several sections:

- Selection:** Includes a Date Range section with Start Date (01/04/2013 00:00) and End Date (01/04/2013 23:59).
- Site Selection:** A table with columns Site Name and Site Description. It lists SITEONE, SITETHREE, and SITETWO. SITEONE is selected.
- Logbook Data:** A table with columns Site, Category, User Name, Entry Time, Event Time, and Entry. It shows two entries for SITEONE: one with Category 'Test' and one with Category 'RoutineCheck'.
- Logbook Entry Details:** Fields for Log Entry Time (01/04/2013 11:25), Event Time (01/04/2013 11:25), Category (Test), User (AirVision), and Site (SITEONE).
- Entry Text:** A large text area for entering the logbook message.

Adding LogBook entries in the LogBook Entry Editor from the Editors menu

Note that entries cannot be changed or deleted. A preference setting can be set to allow for log entries to be appended for later.

Cal Adjust Processor (Optional)

The **Cal Adjust Processor Tool** allows you to apply zero adjustments or zero/span adjustments to data based on calibration results and expected value. Note: This tool is optional and not normally enabled, but can be enabled by contacting support@agilaire.com.

Note that AirVision will look for calibration records that have been marked ZERO and SPAN by the Cal Level defined in Data Source Details for the cal phase. If these records are not marked, AirVision attempts to identify zero and span data via the phase name. Note that the Calibration Data Editor allows for updating old records or correcting data.

To use the Cal Adjust Tool, select a **Data Range and Parameter(s)**. The tool can run on multiple sites/parameters, but review of the results can be confusing, so it may be preferable to use the tool with one parameter at a time at first. The filter fields could also be used to filter results for multiple site/parameters.

Once selected, choose **Analyze** from the toolbar. The screen will show the number of points found that can be correlated with calibration data. The bottom part of the report shows the current values and the proposed changes.

Site Name	Parameter Name	Interval	Date	Original Value	Offset	Slope	Adjusted Value	Difference
SITEONE	OZONE	001h	02/02/2017 00:00:00	0.866276128	-0.858482255	1	0.00778307299999994	-0.858482255
SITEONE	OZONE	001h	02/02/2017 01:00:00	0.862524271	-0.858482255	1	0.00403201599999992	-0.858482255
SITEONE	OZONE	001h	02/02/2017 02:00:00	0.86210518	-0.858482255	1	0.00369292499999996	-0.858482255
SITEONE	OZONE	001h	02/02/2017 03:00:00	0.869893372	-0.858482255	1	0.011401117	-0.858482255
SITEONE	OZONE	001h	02/02/2017 04:00:00	0.864611208	-0.858482255	1	0.00611895299999998	-0.858482255
SITEONE	OZONE	001h	02/02/2017 05:00:00	0.860952973	-0.858482255	1	0.00246071799999992	-0.858482255
SITEONE	OZONE	001h	02/02/2017 06:00:00	0.868321955	-0.858482255	1	0.00982969999999994	-0.858482255
SITEONE	OZONE	001h	02/02/2017 07:00:00	0.853393554	-0.858482255	1	-0.00509870099999998	-0.858482255
SITEONE	OZONE	001h	02/02/2017 08:00:00	0.86862441	-0.858482255	1	0.00953185499999998	-0.858482255
SITEONE	OZONE	001h	02/02/2017 09:00:00	0.87199692	-0.858482255	1	0.013504555	-0.858482255
SITEONE	OZONE	001h	02/02/2017 10:00:00	0.864855825	-0.858482255	1	0.00636356999999999	-0.858482255
SITEONE	OZONE	001h	02/02/2017 11:00:00	0.861348264	-0.858482255	1	0.00285100900000002	-0.858482255
SITEONE	OZONE	001h	02/02/2017 12:00:00	0.861500203	-0.858482255	1	0.00300794799999993	-0.858482255
SITEONE	OZONE	001h	02/02/2017 13:00:00	0.860902477	-0.858482255	1	0.00249022199999993	-0.858482255
SITEONE	OZONE	001h	02/02/2017 14:00:00	0.866361975	-0.858482255	1	0.00786971299999997	-0.858482255
SITEONE	OZONE	001h	02/02/2017 15:00:00	0.860231816	-0.858482255	1	0.00173956099999995	-0.858482255
SITEONE	OZONE	001h	02/02/2017 16:00:00	0.861299715	-0.862505793	1	-0.00129607799999998	-0.862505793
SITEONE	OZONE	001h	02/02/2017 17:00:00	0.85914725	-0.862505793	1	-0.00335854299999994	-0.862505793
SITEONE	OZONE	001h	02/02/2017 18:00:00	0.86563301	-0.862505793	1	0.00312721700000007	-0.862505793
SITEONE	OZONE	001h	02/02/2017 19:00:00	0.858487665	-0.862505793	1	-0.00401812800000001	-0.862505793
SITEONE	OZONE	001h	02/02/2017 20:00:00	0.861819932	-0.862505793	1	-0.00068597099999994	-0.862505793
SITEONE	OZONE	001h	02/02/2017 21:00:00	0.866914629	-0.862505793	1	0.00440883600000008	-0.862505793
SITEONE	OZONE	001h	02/02/2017 22:00:00	0.868640601	-0.862505793	1	0.00613480799999999	-0.862505793
SITEONE	OZONE	001h	02/02/2017 23:00:00	0.862768709	-0.862505793	1	0.000262916000000057	-0.862505793

Calibration Adjust Processor

The changes depending on the modes set on the right part of the ribbon:

Adjust for Span-Deselect this if you only want to do a zero correction.

Sliding Scale- If span correction is adjusted, you may optionally choose to have the slope factor linearly interpolated between each cal (e.g., if the slope correction on cal#1 is 1.1, and the slope correction on cal #2 is 1.05, then the hourly data at the midpoint would have a slope correction of 1.075, the hour closest to cal#1 would be 1.1, the hour closest to cal#2 is 1.05, etc).

Apply Forward- If selected, cal corrections are applied using the calibration results going forward in time (default). If de-selected, corrections are applied going backwards from each calibration.

If you change the mode, you will need to select the **Analyze** button again to see the new proposed changes.

Once you are satisfied, you may click the **Apply** button to make the changes to the database. Any data changed will be marked with the 'z' (Cal Adjusted) data flag, and the data is locked from second calibration adjustments. If the user wishes to return to original, the user can use the Batch Edit function in the Average Data Editor to return the data to original form.

Chapter 5

Help & Support

Agilaire's Help and Support menu offers five options:

- ◆ Agilaire Support
- ◆ AirVision Manual
- ◆ AV-Trend Manual
- ◆ Software Release Info
- ◆ Video Tutorials

Agilaire Support

Agilaire Support is a link to the Agilaire website, www.agilaire.com.

You can reach our support staff at:

email: support@agilaire.com

phone: 865-927-9440

AirVision Manual

If you select AVTrend Manual, you will see a pdf of the latest User's Manual.

You can also download the manual from our website, www.agilaire.com.

AV-Trend Manual

If you select AVTrend Manual, you will see a pdf of the latest User's Manual.

You can also download the manual from our website, www.agilaire.com.

Software Release Info

This option directs you to a website with information pertaining to new releases of Agilaire software.

Video Tutorials

On the web, visit: agilaire.com/training/video-training-resources

Chapter 6

Utilities & List Editors

Utilities:

- ◆ Manual Poll
- ◆ Link to Logger
- ◆ Purge/Archive Utilities
- ◆ SQL Execution Tool
- ◆ Table Import/Export
- ◆ Send 8816 / 8832 / 8864 Program
- ◆ Manual Instrument Poll
- ◆ AQS Text and XML Import
- ◆ AQS XML Import Tool
- ◆ AQS Text Import Tool

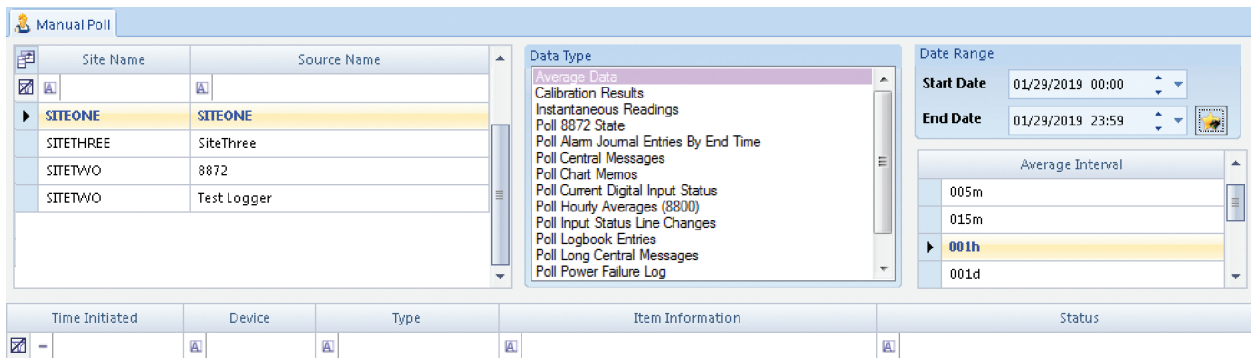
List Editors:

- ◆ Logbook Category Editor
- ◆ Math Editors
- ◆ Modem Types
- ◆ Parameter Tag Editor
- ◆ Unit Editor
- ◆ Journal Controller

This section documents the items in the Utilities menu not covered previously in Installation and Setup (e.g., Manual Polling, Link to Logger) or in the Optional Features (File Import Tool, Manual ADVP).

Manual Poll

The AirVision **Manual Poll** allows users to select sites, sources, average intervals, or data types (Calibration, Input Line Charge, Alarm, Central Message, Chat Memo, Power Failure). The Date Range can be selected, as well as whether to Show Log Viewer and/or Scroll with Messages. Multiple polling events can be queued. When all have been selected in the top section of the screen, click Poll to retrieve results or Cancel to abort the poll (Figure below).



Multiple loggers can be selected for a single manual poll request.

When the poll has started, the results will be displayed in the second section of the screen, including the Time Initiated (when the poll began), Logger ID, Data Type, Item Information (average interval, date, and time), and Status (No Data Found, Good, or Finished).

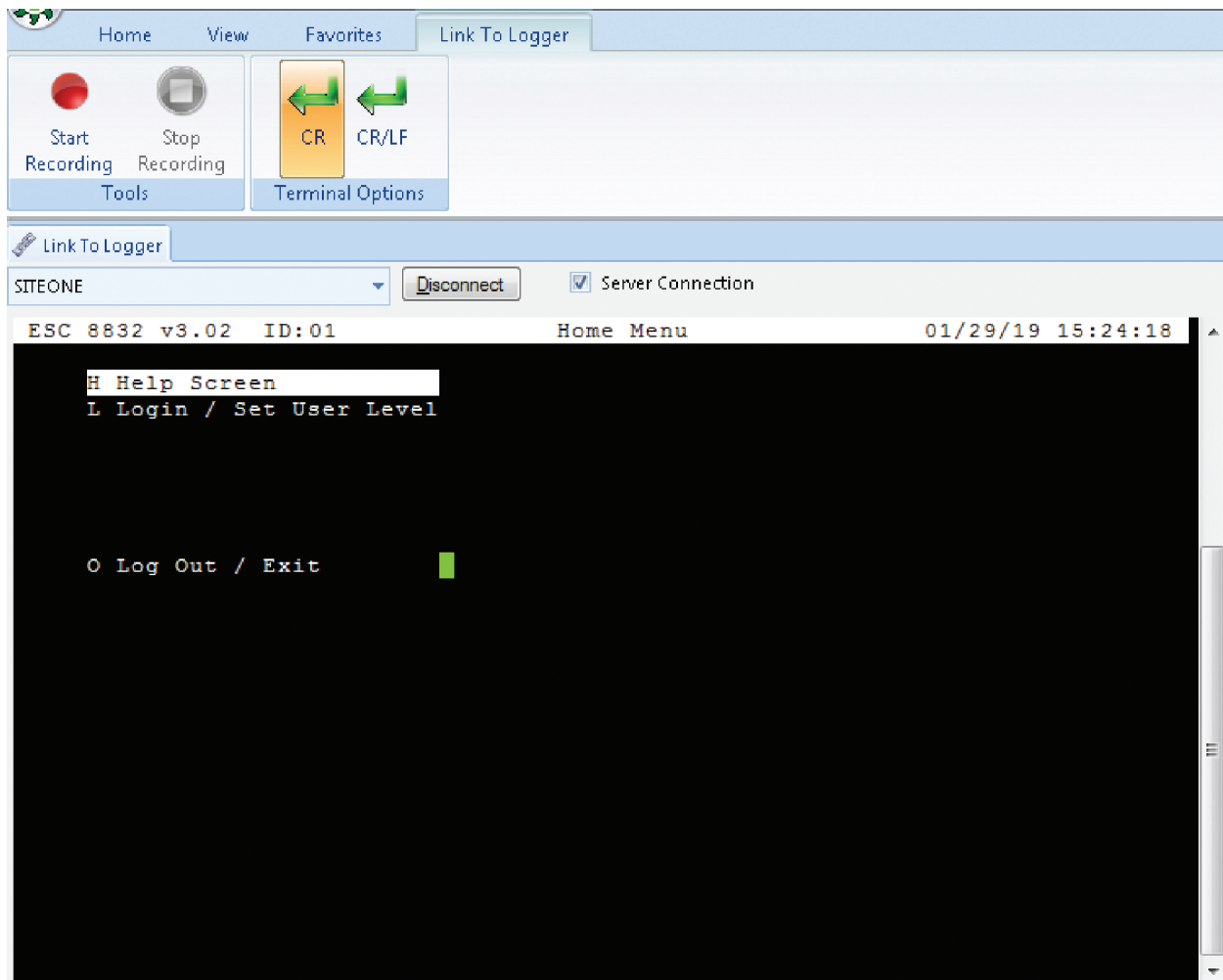
Communication commands with data loggers are listed in the bottom section of the screen, along with the Time, Event Type (Communication), and the message to the logger.

To see a detailed report of each communication, double-click a **Message** line in the lower section of the screen.

Link To Logger (8816 / 8832 / 8864)

Select a logger from the drop-down list and click **Connect**. Click **Disconnect** to exit.

Connection should be nearly instant for IP-based connections, modem connections will require additional time for dial-up, negotiation, etc. When connecting to a Model 8864, you will be prompted for a username and password before connecting.



Server Connection - if checked, connection will be made via the server PC, usually required for modem connections. If unchecked (for TCP connections), the connection will be made directly from the Client PC. (This may not be allowed by some firewalls.)

Record - allows the Link to Logger session to be recorded, ideal for recording configuration "dumps" by creating a Capture.txt file. These can be later imported in the Data Source Details editor.

Purge/Archive Utilities

This function allows for the Purge and Archive functions to be run manually (they can also be run automatically via the Task Scheduler).

Note that selecting **Archive Data** will copy data from database to an external (XML) file that can be stored and re-imported later, while **Purge Data** will delete the data permanently. Users will typically want to use the **Archive and Purge Data** option as this will generate back up files before the deletion occurs.

It is recommended that the user purge non-essential fine resolution (e.g., 1-minute) data for best performance, typically data older than 3 to 24 months, depending on internal procedures.

Separate functions exist for purging/archiving annotations, log book entries, average data, calibration data, digital line data, journal messages (internal system log), and notifications. It is recommended that the Journal Message log be routinely purged through the task scheduler (entries older than 1 month).

To use, the user need only select the desired function (archive, purge, or both), the location for the archive files to be stored, the average interval to be purged, and (if desired) the specific sites/parameters to be archived/purged.

Note that other data (calibration, power failures) are not purged, as they take up very little space.

Purge / Archive Date Criteria

Data Older Than Years

Specific Date Range Start Date: 01/29/2019 00:00 End Date: 01/29/2019 23:59

Action to Take

Archive Data Archive and Purge Data Purge Data

Archive File Location

Server Local

Average Data Selection

Average Interval: Retain Readings During Calibrations

Parameter Selection

All Parameters Selected Parameters

Drag a column header here to group by that column.

Site Name	Parameter Name	Parameter Template Name	Parameter Description
SITEONE	NO	NO	Nitrous Oxide
SITEONE	NO2	NO2	Nitric Oxide
SITEONE	NOX	NOX	Oxides of Nitrogen
SITEONE	NOY	NOY	Reactive Oxides of Nitrogen
SITEONE	OZONE	OZONE	Ozone PPM
SITEONE	PM10C_CONTIN	PM10C_CONTIN	PM10 Coarse Continuous
SITEONE	PM25	PM25	Particulate Matter 2.5 microns or less, hourly data
SITEONE	PM25LC_Rollup	PM25LC	Average roll up from sample data
SITEONE	RAINFALL	RAINFALL	Rainfall, total for hour
SITEONE	RH	RELHUM	Relative Humidity

SQL Execution Tool

This tool allows for the user to execute SQL statements against the database. Because this is a high-level function, it is recommended that this menu item be set using the Security Tools to only be accessible by the system administrator.

This tool provides several advantages over the administrative tools provided by Microsoft:

- Access is limited to the AirVision database only (makes IT administrators happy)

- Query results can be exported to Excel or XML

The most common use would be execution of update scripts or "canned" scripts provided by Agilaire's support staff.

Via the ribbon, the user can load a file of SQL statements, execute the statement, and save the results to a file.

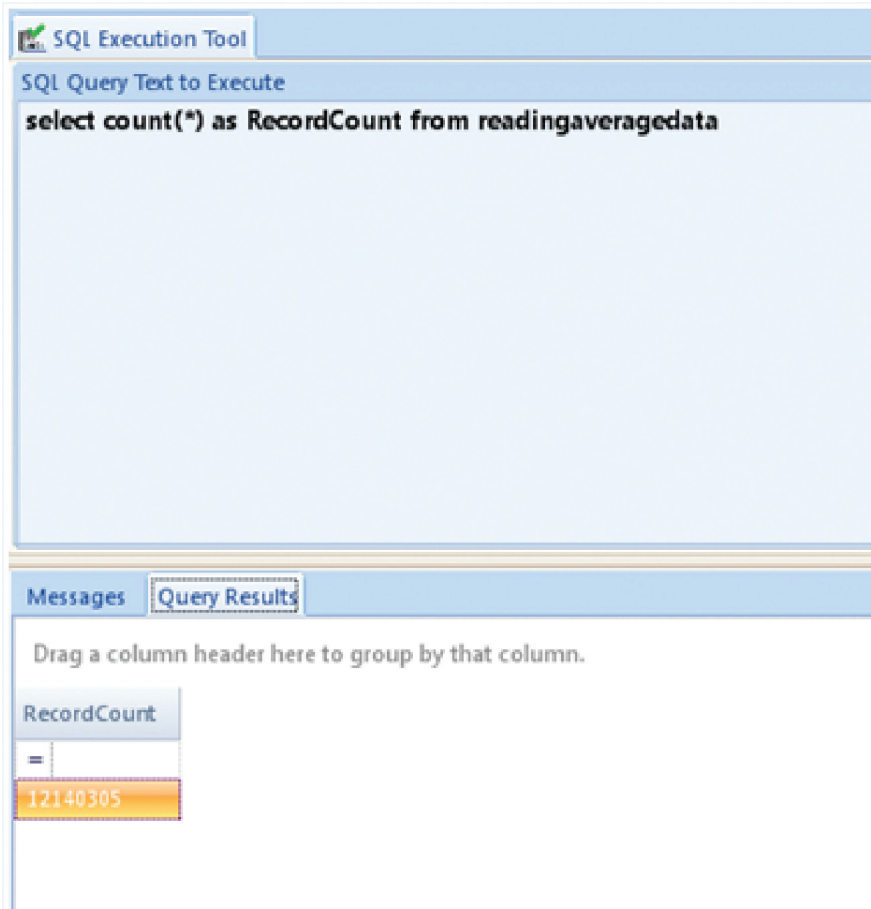
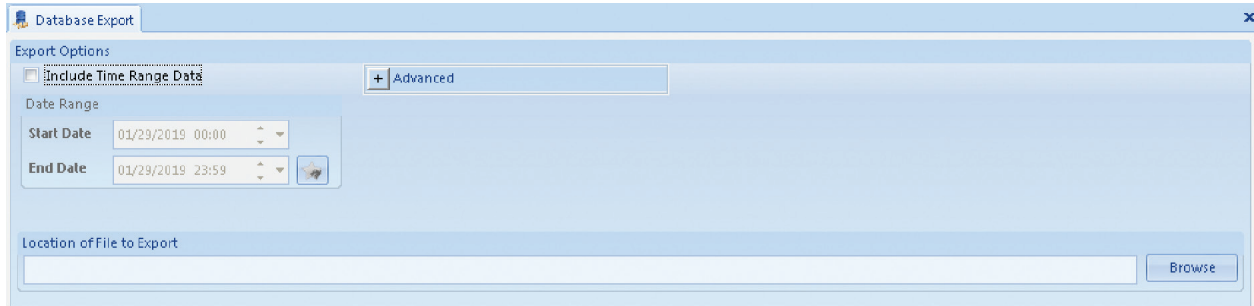


Table Import/Export

This tool allows any table in the AirVision database to be exported in XML format and re-imported. It is most useful for copying out the system configuration settings for archive purposes or for transmission to Agilaire support staff for troubleshooting.

To use, select the table(s) desired, designate the desired destination folder, and use the **Process Export** function. Note that one file is created for each table, so an export of multiple tables is best contained in a designated folder.

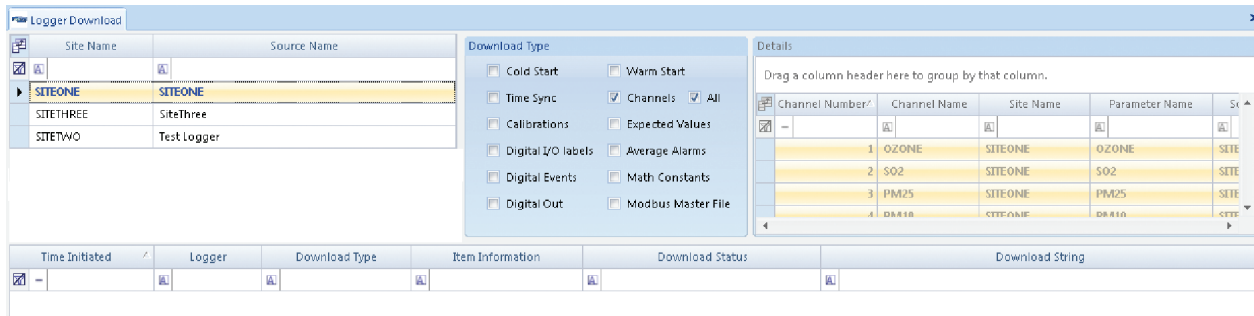


Send 8816 / 8832 / 8864 Program

This utility allows AirVision to remotely configure a Model 8816, 8832 or 8864 data logger by sending down information regarding channels, calibrations, alarm limits, etc.

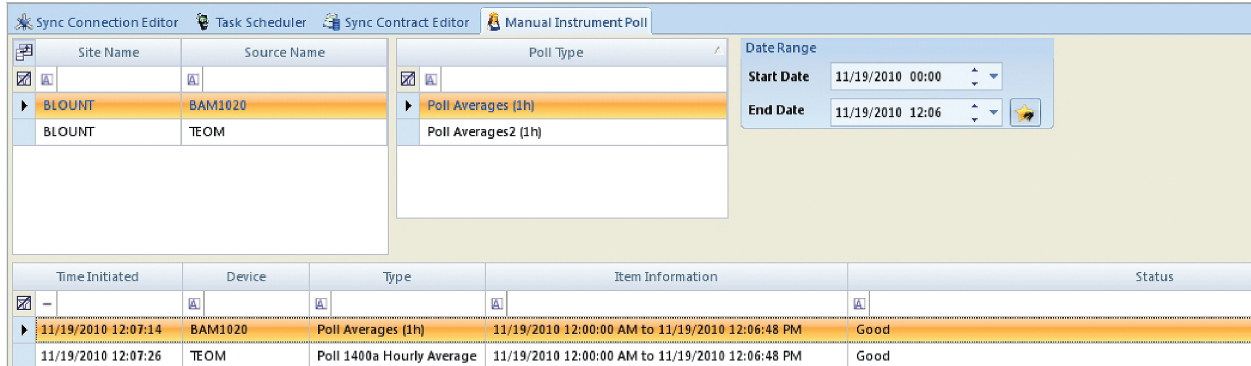
The user need only select what items are to be downloaded, and which site(s) are to be downloaded to. The utility will open the communications, send the information, and report the status ('Success' or an error code with description).

For the Model 8872, a bidirectional synchronization process replaces the one-way download. Consult the Model 8872 manual for more details.



Manual Instrument Poll

Directly polled instruments can be manually polled as well. Using the **Utilities->Manual Instrument Poll** to select the instrument and time range to be polled:



Depending on the instrument's protocols and capabilities, the date range may be grayed out or replaced with a prompt for "number of records back". A summary of the results is given as the instrument is polled.

AQS Text and XML Import

AirVision supports the import of AQS files (RD, RB, and 1-Point QC transactions) in both text and XML format. The utility needs only be pointed to the file on disk and executed.

The import tool compares Site Codes, Parameter Codes, and POCs with the Parameter Configuration to find the correct site and parameter to associate with the imported data records.

Note that the XML tool only runs currently on average data records, while the text tool can also support sample data records.

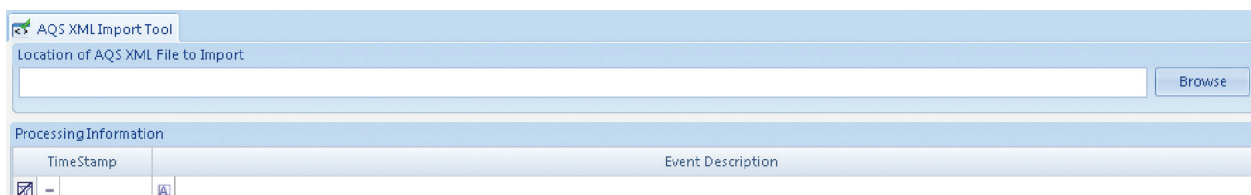
AQS XML Import Tool

AQS XML Data is imported by matching the codes in the file with the codes set in the sites and parameters so data is imported to the correct location in the database.

To run the **AQS XML Import Tool** from the Utilities menu:

Click the **Browse** button to bring up a Select Import File box to locate the AQS XML file that you want to import. Once the file has been selected, the file name and path will be displayed.

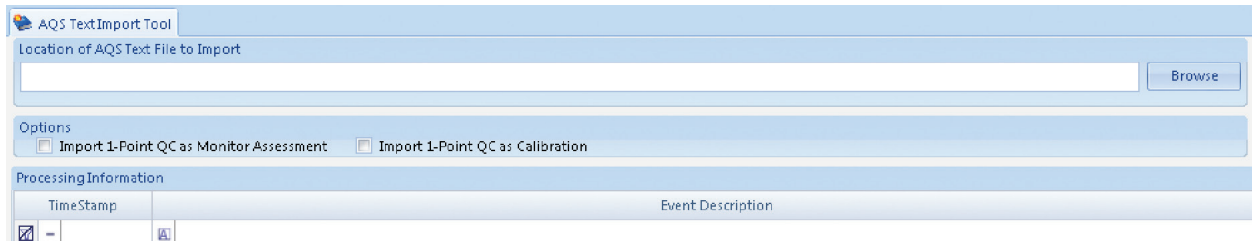
Select the Process Import button on the left side on the Ribbon above the Main Navigation menu.



AQS XML Import Tool from Utilities menu

AQS Text Import Tool

The AQS Text Import Tool works much like the AQS XML import tool, but can also import sample data records (the XML Import tool is currently limited to just averaged data). The import tool compares Site Codes, Parameter Codes, and POCs with the Parameter Configuration to find the correct site and parameter to associate with the imported data records



AQS Text Import Tool from Utilities menu

List Editors

- ◆ Annotation Category editor
- ◆ Log Book Category Editor
- ◆ Math (if enabled)
 - Math Constants Editor
 - Math Equation Editor
- ◆ Modem Types
- ◆ Parameter Group Editor
- ◆ Parameter Tag Editor
- ◆ Site Group Editor
- ◆ Unit Editor

List Editors display items in these categories. Access to the List Editors is controlled by Administrative personnel in the Securities Menu



Log Book Category Editor

Selection of a Log Book Category is required when you make an entry in the **LogBook Entry Editor (Data Editors>LogBook Entry Editor)**.

When you make an entry in the LogBook Entry Editor, you can either click in the category line and select from the drop-down list, or you can select New Category and write your own category. New categories will be saved in the list when you click the **Save** button. The default Log Book Categories are: Adjustment, Logger Message, Other, Repair, Routine Check, and Scheduled Maintenance.

New Categories can also be added in the **LogBook Category Editor** from the **List Menu**, which displays all **Category Names**. To add a **Log Book Category**, click on the **asterisk** on the bottom line and enter the category, then click the **Save** icon.

These categories are also used as Work Item Categories in the component and Activity Tracking (CATS) optional module.

Logbook Category Editor	
Category Name	
	
▶	Adjustment
	Alarm
	Asset
	Logger Message
	Other
	QA
	Repair
	RoutineCheck
	SchedMaintenance
	Test
	Weather

*	
---	--

Logbook Category Editor

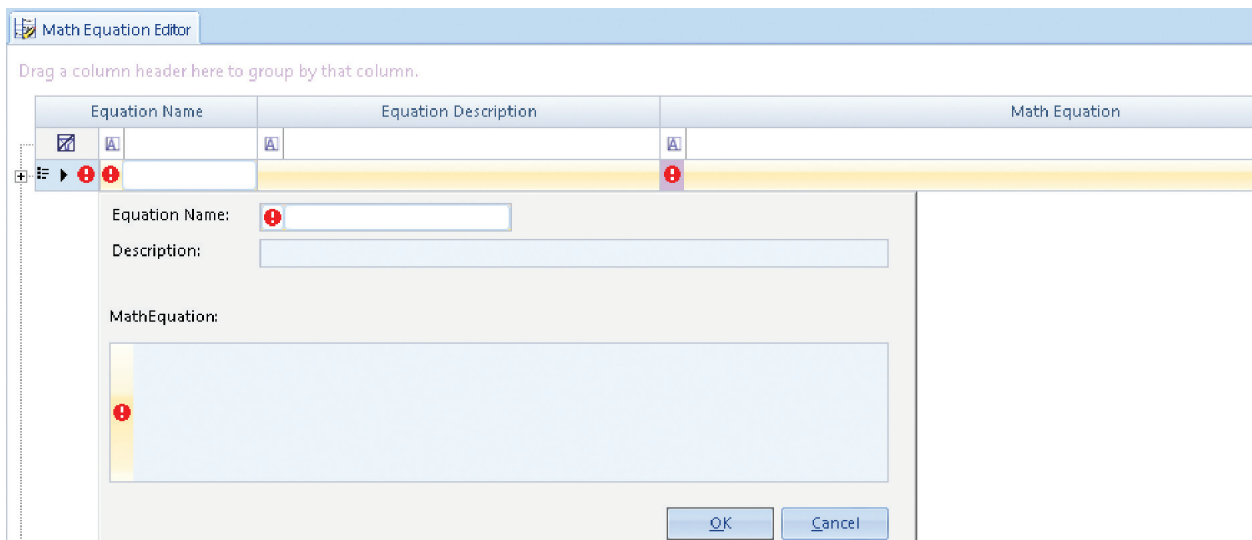
Math Editors

Central Math Processor

AirVision includes the capability to perform mathematical calculations at the server, either on a manual basis, or as a scheduled task. To perform these calculations, you will need to define the mathematical calculation to be made in the Math Equation Editor (**List Editors > Math > Math Equation Editor**). Each equation is given a name to reference (e.g., “SO2_Adjustment”) which is then referenced in the math utility or the Task Scheduler.

Equations may act on any defined average interval, and must reference Parameter Templates, rather than specific site/parameter combinations. This allows a general equation to be configured once, and used for multiple sites without having to repeat the same equation.

To create a new equation, open **List Editors > Math > Math Equation Editor** and click the **Add Equation button**. Enter the **Equation Name** (required), and optional **Description**, and then the **equation**. The equation takes the form of parameter template names, operators, and functions. Parenthesis are supported.



Math Equation Editor from List Editors

Binary operators (operators on two variables) include:

- * Multiply
- / Divide
- + Add
- Subtract
- % Modulo (remainder)

Other binary and Uniary functions (functions that operate on one variable or one result of another embedded equation) include:

Name	Description	Usage
Abs	Returns the absolute value of a specified number.	Abs(-1)
Acos	Returns the angle whose cosine is the specified number.	Acos(1)
Asin	Returns the angle whose sine is the specified number.	Asin(0)
Atan	Returns the angle whose tangent is the specified number.	Atan(0)
Cos	Returns the cosine of the specified angle.	Cos(0)
Exp	Returns e raised to the specified power.	Exp(0)
Log	Returns the logarithm of a specified number.	Log(1, 10)
Log10	Returns the base 10 logarithm of a specified number.	Log10(1)
Max	Returns the larger of two specified numbers.	Max(1, 2)
Min	Returns the smaller of two numbers.	Min(1, 2)
Pow	Returns a specified number raised to the specified power.	Pow(3, 2)
Round	Rounds a value to the nearest integer or specified number of decimal places. The mid number behaviour can be changed by using EvaluateOption.RoundAwayFromZero during construction of the Expression object.	Round(3.222, 2)
Sign	Returns a value indicating the sign of a number.	Sign(-10)
Sin	Returns the sine of the specified angle.	Sin(0)
Sqrt	Returns the square root of a specified number.	Sqrt(4)
Tan	Returns the tangent of the specified angle.	Tan(0)
Truncate	Calculates the integral part of a number.	Truncate(1.7)
EPAPA2021	Correct raw Purple Air data to EPA 2021 multi-point correction algorithm. Reports “A” math error if concentration > 1500 ug/m3	EPAPA2021(PA_raw,PA_rh) where PA_raw = the parameter template name of the raw PA2 value, and PA_rh = the parameter template name of the relative humidity value.

⇒ **Important!** These equations MUST be referred to by the case-specific version of the equation. You must use “Max(x,y)”, not “MAX(x,y).”

For equations, Information flags are not propagated, while Validity flags are propagated from constituent channels. Consult the Flags Editor for details on which flags are considered Informational and Validation flags. 9

Modem Types

Used to define initialization strings (AT commands) for each modem type, **Modem Types** in the **List Editors Menu** lists all the dial-up modem types that are available in the drop-down list when you add a **Modem** and select a **Modem Type** in **Configuration Menu>Server Configuration**. New **Modem Types** can be added in the **List Editors Menu** by clicking on the **asterisk** on the bottom line of the list.

Modem Types							
Modem Description	BPS	Command Mode String	Guard Time (ms)	Dial Command String	Hangup Command String	Online Mode String	Initialization String
US Robotics V.92	57600		2000		ATH0		AT&C1&D0&H1&D0&K0M1Q0E0V1S0=0
US Robotics 14.4	14400		2000		ATH0		AT&F0&W0V1Q0E0M1S2=4357=8050=1
US Robotics 28.8/33.6	33600		2000		ATH0		AT&C1&D0&H1&D0&K0M1Q0E0V1S0=0
US Robotics 1200 baud only	1200		2000		ATH0		AT&C1&D0&H1&D0&K0M1Q0E0V1S0=0&F
Hayes Std 9600	9600		2000		ATH0		ATV1Q0E0M1S2=4357=8050=1
US Robotics 2400 baud only	2400		2000		ATH0		AT&C1&D0&H1&D0&K0M1Q0E0V1S0=0&F
Zoom 14.4	14400		2000		ATH0		ATV1Q0E0M1S2=4357=8050=1
US Robotics 4800 baud only	4800		2000		ATH0		AT&C1&D0&H1&D0&K0M1Q0E0V1S0=0&F
ZoomFax V.34 Plus	33600		2000		ATH0		AT&C1&D0&K0Q0E0V1S0=0
US Robotics 9600 baud only	9600		2000		ATH0		AT&C1&D0&H1&D0&K0M1Q0E0V1S0=0&F
Practical Periph 14.4	14400		2000		ATH0		AT&F&WV1Q0E0M1S2=4357=8050=1
Multitech MT2834	33600		2000		ATH0		AT&F&C1&D0&E0&F4&E11&E14&Q1E0Q

Modem Types in the List Editors Menu

Parameter Tag Editor

The **Parameter Tag Editor** in the **List Editors Menu** lists all the parameter tags in AirVision. These are generally automatically created when data is polled, so the user usually will not have to create these. To add another Parameter Tag, click on the asterisk in the bottom line of the menu and add a tag.

Parameter Tag Editor	
Drag a column header here to group by that column.	
Parameter	Average Interval
Agilaire : CO	001h - Hourly average of 60 minutes
Agilaire : CO TRACE	001h - Hourly average of 60 minutes
Agilaire : NO	001h - Hourly average of 60 minutes
Agilaire : NO2	001h - Hourly average of 60 minutes
Agilaire : NOX	001h - Hourly average of 60 minutes
Agilaire : OZONE	001h - Hourly average of 60 minutes
Agilaire : PM25LC	001h - Hourly average of 60 minutes
Agilaire : RELHUM	001h - Hourly average of 60 minutes
Agilaire : SIGTHETA	001h - Hourly average of 60 minutes
Agilaire : SOLARRAD	001h - Hourly average of 60 minutes
Agilaire : SWSP	001h - Hourly average of 60 minutes
* ! !	

Parameter Tag Editor in the List Editors Menu

Unit Editor

The **Unit Editor** in the **List Editors Menu** lists **Units** used in AirVision, the **Unit Type**, **Slope**, **Intercept**, and **Description**. To add a Unit, click on the asterisk on the bottom line.

Unit Editor					
Unit Name	Unit Type	Slope	Intercept	Description	
<input checked="" type="checkbox"/>	<input type="text"/>	<input type="text"/>	-	-	<input type="text"/>
▶ LPM	Flow Rate	1	0	Liters per minute	
L/M	Flow Rate	1	0	Liters per minute	
MVOLTS	Voltage	0.001	0	Millivolts	
Langleys	Solar Radiation	0.001434	0	Langleys per hour	
M/SEC	Speed	3.6	0	meters per second	
MG/M3	Mass Concentration	1000	0	milligrams per cubic meter	
INHG	Pressure	25.4	0	inches mercury	
%FS	Unknown	1	0	Percent Full Scale	
None	Unknown	1	0	Alternate One Description	
COUNT	Unknown	1	0	Count	
DEG	Temperature	1	0	Degrees	
DEGC	Temperature	1.8	0	Degrees Celsius	
DEGF	Temperature	1	32	Degrees Farenheit	
Hz	Frequency	1	0	Hertz	
INCHES	Distance	1	0	Inches	

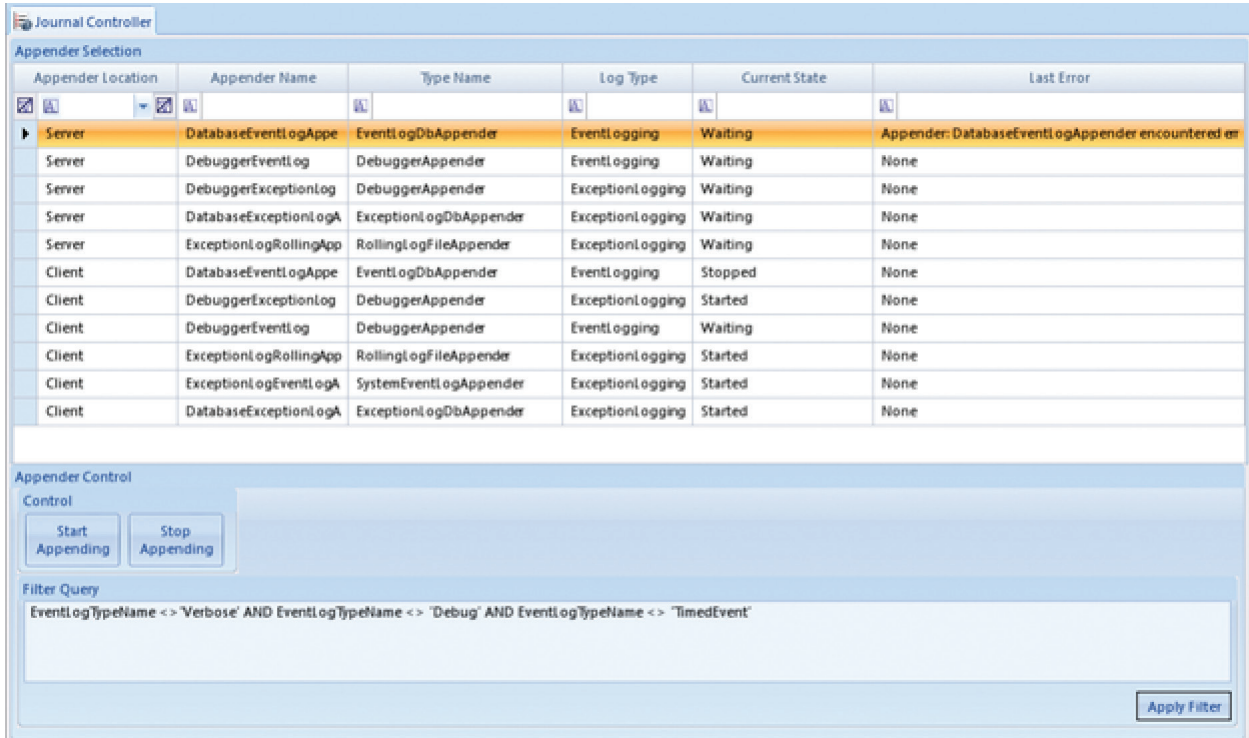
Unit Editor in List Editors Menu

Users may add new units using the bottom grey row (with the asterisk). Units may be given a certain type (e.g., distance, pressure, speed), or "unknown". In either case, a slope and intercept must be entered, but it is only used for types other than "Unknown" for unit conversions (e.g., m/s to mph). In each category, there is a 'base' unit that all scaling factors must derive from. They are:

- DegC for temperature
- Liters per minute for flow
- Inches for distance
- PPB for concentration
- ug/m3 for mass concentration
- Volts for voltage
- W/m2 for solar radiation
- Hz for frequency
- mmHg for pressure.

Journal Controller

The **Journal Controller** is generally for use by Agilaire support only. It is used to control the detail of the System Log.



Journal Controller in Utilities menu

A ribbon selection is available to **Enable/Disable Debug Messages**. When enabled, the System Log will show more detail about polling, calculations, tasks and other server activity.

Chapter 7

Optional Features

AirVision can provide additional features according to the terms of your contract with Agilaire. For more information, contact Agilaire at 927-9440 or info@agilaire.com.

This chapter describes the following features:

- ◆ AirVision's optional patented **Automatic Data Validation Processor (ADVP)**
- ◆ **File Import Configuration Editor**, which enables you to develop a File Import Template for the File Import Tool
- ◆ **Configuring File Import Templates**
- ◆ **Enhanced File Import Tool** in AirVision 2.3 handles new data types better, especially for PM lab samples and Air Toxics.
- ◆ **Monitor Assessment Editors and Reports**
- ◆ **Data Rollup Processor**, which allows shorter term averages to be rolled up into larger block or rolling averages.
- ◆ **Asset Tracking & Work Task Tracking Module (aka "CATS")**, provides an easy way to create history records for analyzers, samplers, and data loggers.
- ◆ **Reports**
- ◆ **Browser Reporting Portal**, allows web browsers to be used as an interface into AirVision to generate, view, and download reports without requiring the installation of the AirVision Client.

Automatic Data Validation Processor (ADVP)

AirVision's optional patented Automatic Data Validation Processor (ADVP) allows an unlimited number of logical rules to be applied to data, resulting in data that is flagged, graded, annotated, coded, and/or emailed to designated users.

Each ADVP rule consists of two main components: a **trigger** and a resultant **action**. If the conditions of the trigger are met for a given data point, the action is taken; if not, nothing happens, and the next rule is evaluated. A trigger consists of a number of conditions linked by logical combination (e.g., AND/OR).

The following is an example of a data rule:

If Ozone is greater than 50 ppb and the ambient temperature is less than 72 degrees F, then mark the data suspect.

The **trigger** is composed of the following two conditions:

If Ozone is greater than 50 ppb (Condition #1)
AND
the ambient temperature is less than 72 degrees F (Condition #2)

The **action** is:

mark the data suspect data

► **Note:** multiple AND/OR links are evaluated in sequential order. For example, a four-condition trigger such as:

Condition 1: 1 > 2 link AND
Condition 2: 2 > 3 link: OR
Condition 3: 3 > 4 link: AND
Condition 4:

Is evaluated as follows:

(((Condition1 AND Condition 2) OR Condition 3) AND Condition 4)

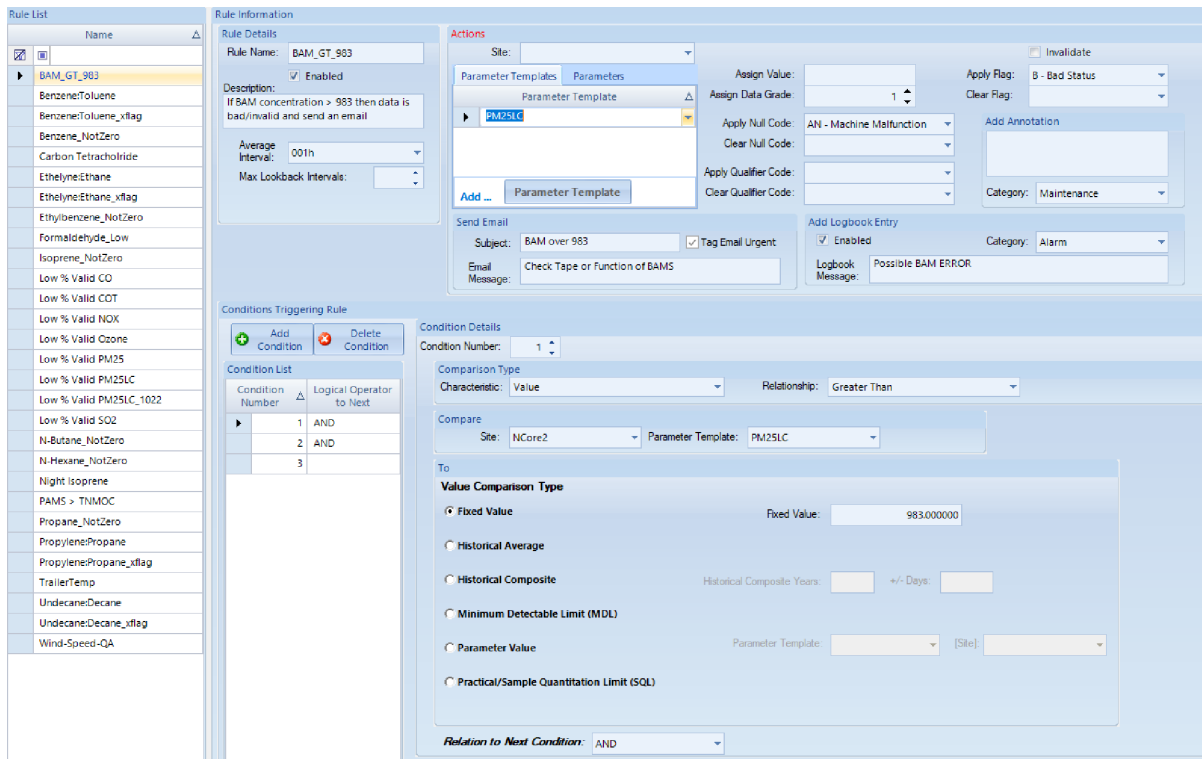
in other words, having Condition 3 and 4 as true would cause the action to be taken.

Each trigger condition uses a Parameter Template, and optionally can be associated with a particular site. If the site field is left blank, the rule is applied to all sites with parameters that match the templates.

Example: To do a simple wind vane stuck rule, you could point at the parameter template for WDR and set the trigger condition to be Variance, Less Than, 5%.

To create the rule, click the **New Rule** button on the ribbon, and we give the rule a name and enable it. Designate the average interval, and hit the **Save** button to add the first condition by clicking the **Add Condition** button at the bottom.

Fill in the first condition and select **Variance** for the **Characteristic**, set the **Relationship** to **Less Than**, and designate the **Parameter Template** to apply. Finally, set the limit for the comparison to 5%.



► **Note:** **Delete Condition** button can be used to remove a condition that is no longer desired.

The trigger condition can use certain characteristics and make certain comparisons:

Characteristic	Comparisons Allowed	Compared To
Average Value	Greater Than Less Than Equals Differs Greater Than Differs Less Than	Another Parameter (Template), same site or specified site. Historical Average (fixed historical averages- see end of chapter) Historical Composite (a dynamic average of previous years of the same date/hour, similar to the Historical Composite used in the Average Data Editor.
Flag	Contains Doesn't Contain	List of logger/system flags
Annotation	Contains Doesn't Contain	User-defined text
Variance (change from a previous average value)	Greater Than Less Than Equal To	User-defined percentage

Example: To do a simple wind vane stuck rule, you could point at the parameter template for WDR and set the trigger condition to be Variance, Less Than, 5%.

To create the rule, click the **New Rule** button on the ribbon, and we give the rule a name and enable it. Designate the average interval, and hit the **Save** button to add the first condition by clicking the **Add Condition** button at the bottom.

Fill in the first condition and select **Variance** for the **Characteristic**, set the **Relationship** to **Less Than**, and designate the **Parameter Template** to apply. Finally, set the limit for the comparison to 5%.

Condition Details

Condition Number: 1

Comparison Type

Characteristic: Variance (%) Relationship:

Compare

Site: SITEONE Parameter Template: CO

To

Comparison Type

Comparison Value:

Relation to Next Condition:

Stuck Wind Direction Program in ADVP Editor

The rule can be further improved by adding another condition that the wind direction be below a value, for example, 10 mph, to avoid cases of steady winds accidentally triggering the rule. Set the **Relation to Next Condition** at the bottom to **AND**, and use **Add Condition** to create, filling in the values and designated WSP for the comparison parameter template. Since you are using parameter templates, this one rule can be applied to all sites where WSP and WDR labeled parameter exist.

Actions can consist of any or all of the previous steps, and they can be applied to any parameter (template), not necessarily the one that triggered the rule:

- ◆ Assign a Fixed Value
- ◆ Apply a Flag
- ◆ Clear a Flag
- ◆ Apply a Null Code
- ◆ Clear a Null Code
- ◆ Add Qualifier Code
- ◆ Add Annotation Text
- ◆ Assign a data Grade (1 .. 10)
- ◆ Send an Email via Subscriptions Notifications

The action can be applied to any parameter at the same site, or a specific site can be designated (most likely approach). In the previous example, you could mark data invalid and set the null code AW for Wildlife Damage. You could optionally email QA, in case the sensor failed.

The screenshot shows the 'Actions' configuration window. On the left, there's a 'Parameter Templates' list with 'PM25LG' selected. Below it is an 'Add ... Parameter Template' button. The main area contains several configuration options:

- Assign Value:** An empty text input field.
- Assign Data Grade:** A spinner control set to '1'.
- Apply Null Code:** A dropdown menu with 'AN - Machine Malfunction' selected.
- Apply Flag:** A dropdown menu with 'B - Bad Status' selected.
- Send Email:** A section with 'Subject: BAM over 983' and a checked 'Tag Email Urgent' box. The 'Email Message' field contains 'Check Tape or Function of BAMS'.
- Add Logbook Entry:** A section with a checked 'Enabled' box and a 'Logbook Message' field containing 'Possible BAM ERROR'.

Setting Null Code and emailing QA as a result of ADVP rule

In version 4.8.129 +, actions may be applied to multiple parameter templates (e.g., a high value for shelter temperature can flag any number of instruments using a single rule) using the "Add Parameter" button. This makes it easy, for example, for a site temperature alarm limit (H or L) to invalidate multiple instruments at the same site.

Time-specific rules (day/night, rush hour)

Agilaire is planning to expand the ADVP to include time-specific rules. For the current version of AirVision, Agilaire recommends using the Math Pack function in the data logger to use HRDAY() to determine the hour of the day, daytime, nighttime, etc. It is also possible to use the JULDAY() function in an equation to add a seasonal adjustment factor to HRDAY(), or to directly calculate sunrise/sunset.

For example, you could go to <http://www.arachnoid.com/lutusp/sunrise/>, put in your location, and get a table of sunrise and sunset times. (You will need to know your latitude and longitude before you can generate the table). In Excel, you can use a graph trendline to develop a Math Pack equation to calculate sunrise and sunset times for any given day. For Knoxville, TN, the equation might look like:

$$\text{SUNSET} = 5\text{E-}09 * \text{JDAY}()^3 - 6\text{E-}06 * \text{JDAY}^2 + 0.0015 * \text{JDAY}() + 0.7102$$

$$\text{SUNRISE} = 3\text{E-}06 * \text{JDAY}^2 - 0.0012 * \text{JDAY} + 0.3466$$

$$\text{TIME} = \text{HRDAY}() + \text{MINHR}() / 60$$

You can then add conditions to determine day/night conditions, such as illustrated below:

Condition Details

Condition Number: 1

Comparison Type
 Characteristic: Value Relationship: Greater Than (%)

Compare
 Site: [] Parameter Template: Time

To

Value Comparison Type

Fixed Value Fixed Value: 0.100000

Historical Average

Historical Composite Historical Composite Years: [] +/- Days: []

Minimum Detectable Limit (MDL)

Parameter Value Parameter Template: Sunrise [Site]: []

Practical/Sample Quantitation Limit (SQL)

Relation to Next Condition: AND

Adding conditions to determine day/night

Another condition for TIME < SUNSET can be added as well.

Suggestions for Initial ADVP Rules

- ◆ Flagging high pollutant values when environmental conditions would not allow those values, e.g., high ozone during low temperature.
- ◆ Flagging abnormal solar radiation during nighttime or rainfall
- ◆ Detecting stuck met sensors (frozen sensor, birds perching)
- ◆ Cross-flagging instrument diagnostic values to invalidate/mark suspect primary analyzer readings.
- ◆ Comparing nearby sites for similar parameters (ambient temperature, pollutant readings) and marking large differences as suspect.
- ◆ Checking sigma theta conditions against average wind speed, solar radiation, vertical wind speed, etc.
- ◆ Noting high PM concentrations during firework events, such as Fourth of July (Julian day = 185 in non-leap years)

Configuring File Import Templates

AirVision's File Import Tool (**Configuration Editors > File Import Configuration**) allows for the importation of data from a variety of data sources, including:

- ◆ Manual import from files on disk
- ◆ Automated import from files transferred to the server (e.g., via FTP or automatically written via another program)
- ◆ Data coming in through the Direct Poll system from instruments (e.g, Partisols, BAM, T640, TEOM, Comet Cloud Service, small sensors, etc).

AirVision allows you to define a template describing the layout of particular files so files can be automatically imported into the database. With this system, particulate and laboratory data can be copied into a folder to be imported into AirVision.

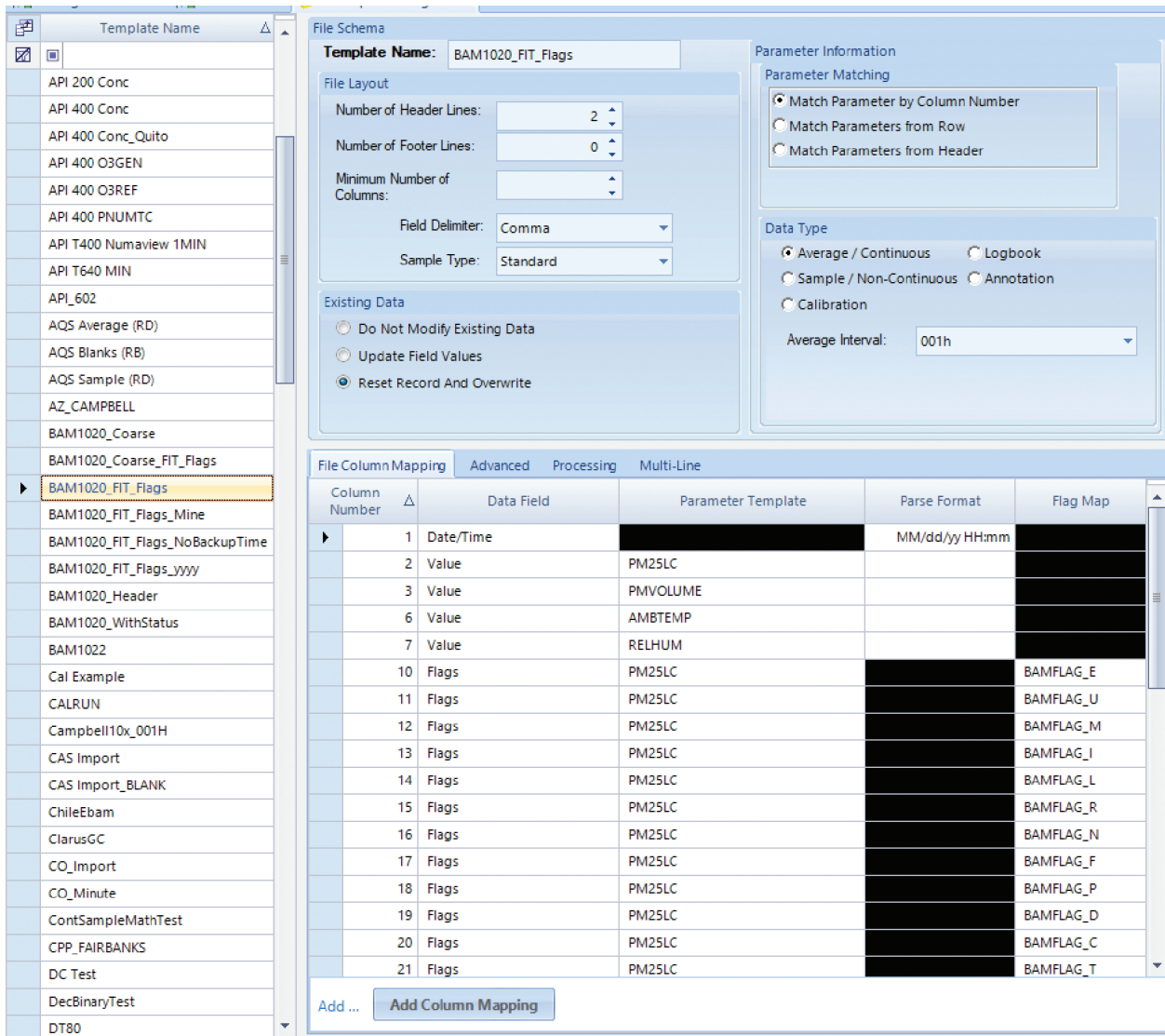
The most basic implementation File Import Tool assumes that data is arranged using different parameters as columns and different points in time as rows, and typically always data for one site in a file. This arrangement matches most instrument outputs, filter data sets, and other commonly accessed data. The 'row-wise' feature of the File Import Tool (discussed later in this chapter) is used where each data point exists as an independent row, with columns representing different aspects of that data point (value, null code, sample time), as with air toxics data.

To eliminate the need to create individual templates for each site (to define site/parameter associations), the File Import tool maps columns to Parameter Templates, not any individual site/parameter combination. Thus a single template can be applied to any site in the system. However, you must have a parameter template defined for each column that you want to import, either one of the AirVision defaults or one you add through the Template Editor.

Creating a Template

AirVision is pre-loaded with some common instrument templates (BAM-1020, Thermo TEOM and Partisol FRM interval data). To create a new template, open **Configuration Editors > File Import Configuration**.

Click the **New Template** button on the ribbon to create a new template.



- ◆ **Template Name**
- ◆ **Number of Header Rows** (rows to skip before importing data, such as header information without data). Even if the value is zero, this value has to be edited to be saved.
- ◆ **Number of Footer Rows** (rows at the end of the file to skip, such as footer information without data). Even if the value is zero, this value has to be edited to be saved.

- ◆ **Field Delimiter** options include:
 - Comma
 - Comma with Quotes (e.g., “blah1”,”blah2”, etc)
 - Tab
 - Space (each space being one delimiter)
 - Whitespace (any combination of tabs/spaces = one delimiter)
 - Semicolon
 - Pipe
 - Non-printable (non-printable ASCII data)
- ◆ **Sample Type** - Generally, you will use “Standard” unless directed to use a specific customized import type. Note that “ParameterSampleIDKey” should be used for lab data files to import additional data into an existing sample data record, where the lab file only has the SampleIdentifier / SampleID to connect the imported data to the existing data.
- ◆ **Parameter Data Type** - Average (Continuous), Sample/Non-Continuous, Logbook, or Calibration Data. For continuous data, you will be asked for the Average Interval. For Sample/Non-Continuous data, you have the option to define the following for AQS reporting:
 - Duration Code
 - Frequency Code
 - Blank Type (if all data imported from this template is considered blank data)

Optional fields are:

- ◆ **Maximum Number of Columns** - if the number of columns is variable in a file, this can be set to tell file import to stop after a certain number of columns, so errors will not be encountered.
- ◆ **Parameter Matching**
 - Match Parameter by Column Number – lets you define the Nth column to be associated with a certain field or parameter.
 - Match Parameters By Header – lets you search for a specific string in the header to identify which column has a certain field or parameter
 - Match Parameters From Row – (discussed later in chapter)

An example import template for a BAM-1020 might be as follows:

The screenshot shows the 'File Import Configuration' window in AirVision. The 'File Schema' tab is active for the template 'BAM1020_FIT_Flags'. The configuration includes:

- File Layout:** Number of Header Lines: 2, Number of Footer Lines: 0, Minimum Number of Columns: (empty), Field Delimiter: Comma, Sample Type: Standard.
- Parameter Information:** Match Parameter by Column Number (selected), Match Parameters from Row, Match Parameters from Header.
- Data Type:** Average / Continuous (selected), Logbook, Sample / Non-Continuous, Annotation, Calibration, Average Interval: 001h.
- Existing Data:** Do Not Modify Existing Data, Update Field Values, Reset Record And Overwrite (selected).
- File Column Mapping Table:**

Column Number	Data Field	Parameter Template	Parse Format	Flag Map
1	Date/Time		MM/dd/yy HHmm	
2	Value	PM25LC		
3	Value	PMVOLUME		
6	Value	AMBTMP		
7	Value	RELHUM		
10	Flags	PM25LC		BAMFLAG_E
11	Flags	PM25LC		BAMFLAG_U
12	Flags	PM25LC		BAMFLAG_M
13	Flags	PM25LC		BAMFLAG_I
14	Flags	PM25LC		BAMFLAG_L
15	Flags	PM25LC		BAMFLAG_R
16	Flags	PM25LC		BAMFLAG_N
17	Flags	PM25LC		BAMFLAG_F
18	Flags	PM25LC		BAMFLAG_P
19	Flags	PM25LC		BAMFLAG_D

At the bottom of the table is an 'Add ... Add Column Mapping' button.

Mapping Columns

If you want imported data to go in specific columns, save the File Schema entries (top half of the screen) and click the **Add Column Mapping** button at the bottom of the screen. Enter the following information:

- ◆ **Column Number** for each column in the file where you want data to be imported.
Not every column needs to be configured (e.g., if you only want columns 1, 2, and 5 out of a 10-column file, only those 3 records need to be configured). If you have selected “Match Parameter From Header”, this field is replaced by “Parameter Match Name”, in which case you should enter the exact string in the header to associate with the Data Field.
- ◆ **Data Field** Select one of the following from a drop-down list:
Date, Time, or Date And Time. For these selections, you will be asked to enter:
Parse Format can be selected for date and/time data only (not floating point); for example, MM/dd/yyyy HH:mm. Select from a drop-down list.
Value (to map to a parameter). For this you will be asked to enter:
- ◆ **Parameter Template** can be selected from a drop-down list of all parameter templates.
- ◆ **Data Field Options** include (some only valid for Sample Data):
 - AQS Null Code
 - AQS Method Code
 - AQS Qualifier Code
 - Flags (See “Flag Mapping” below)

For sample data, you may also map Data Fields to:

- Tare Weight
- Final Weight
- Sample Total Flow
- Sample Ambient Temp, Barometric Pressure
- Sample Analysis Date, Time, or Date/Time
- Sample Retrieved Date, Time, or Date/Time
- Sample End Date, Time, or Date/Time
- Uncertainty Value
- Peak Area, Retention Time
- Minimum Detectable Limit
- Uncertainty Value

For calibration depth field types, include starting and ending times, point identifiers and phase name/level for row-wise import

Click the **Add Column Mapping** button to add another record.

To delete a column mapping record, select the row and press the **Delete** key on the **keyboard**.

To delete an entire File Import Template, select it from the **Template Name** section of the screen and click the **Delete** button in AirVision.

Save the template again. Use the **Manual File Import** tool to test your file import template.

Row-Wise Import

The File Import Tool supports a ‘row-wise’ import method to better handle certain file types, primarily meta data for PM lab sample data and AirToxics data.

In the original model, the File Import Tool assumed each row in the file contained data for different parameters, and could only import the numerical values for that data, as in the following example:

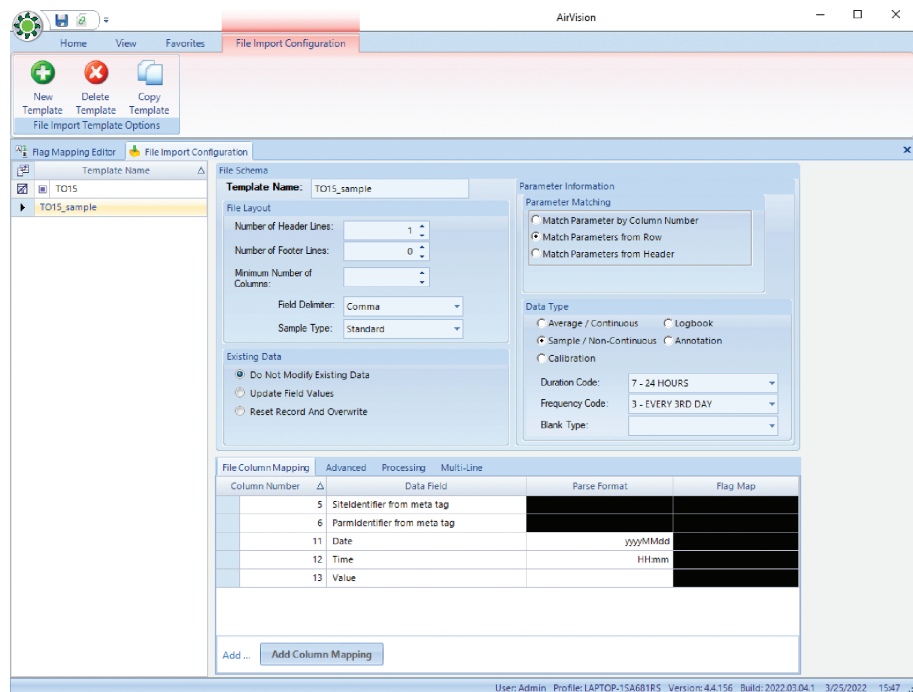
In row-wise import, a single row represents a single data point, with several additional properties associated with that single data point. This is a common case for air toxics data. In this mode, it is even common to have the same file represent multiple sites and parameters, so it is necessary to create a key string for each site/parameter to match the identifier that is used within the imported file.

For example, a file might provide concentrations using the following layout:

```
x, x, x, x, Site1, Acetelyne, x, x, x, 041, 20180412, 14:00, 44.5, x, 7
x, x, x, x, Site1, Benzene, x, x, x, 041, 20180412, 14:00, 12.3, x, 7
x, x, x, x, Site2, Acetelyne, x, x, x, 041, 20180412, 14:00, 9.2, x, 7
x, x, x, x, Site2, Benzene, x, x, x, 041, 20180412, 14:00, 14.5, x, 7
x, x, x, x, Site2, Propane, x, x, x, 041, 20180412, 14:00, 2, x, 7
```

In the file, the site and parameter names may not exactly match the site and parameter names in AirVision, so we create a mapping system by adding MetaTags to the sites and parameters called SiteIdentifier, ParmIdentifier and First, go into the **Site/Parameter** editor and use the ‘Metatags’ editor at the bottom of the Site form and the Parameter form to identify the string in the imported file. The key for the Site editor is SiteIdentifier, and the key for the Parameter editor is ParmIdentifier. The value should be the name as it appears in the data file (e.g., “Site1” and “Acetelyne”).

Once this is done, set up a template to look for that particular string in the file.



Flag Mapping Table

Some devices provide data flags in the form of a string, which can be mapped into AirVision’s standard flags. Supported formats include:

- ◆ Binary string (e.g., “1101010”, where each digit represents presense/absence of a flag)
- ◆ Hex (e.g., “1F0A”, were each hex char represents a 4-bit binary map, each bit = 1 flag)
- ◆ Decimal Binary (e.g., “1024”, where if the decimal number is converted to binary, each bit represents a possible flag)
- ◆ String (e.g, “FD<”, where each character represents a flag, but does not map equally to AirVision’s standard flag table.

By allowing the user to create a table to map the instrument’s particular flags to AirVision’s flags, each Flag Mapping Table can be referenced in the File Import Tool to map that column and its content into AirVision flags (**Configuration Editors > Flag Mapping Editor**).

For example, the Met One BAM provides a series of “1”and “0”fields to represent flags in the BAM.

Station, 1

Time,Conc(mg/m3),Qtot(m3),no(V),WS(MPS),WS(MPS),RH(%),Delta(C),WS(MPS),E,U,M,I,L,R,N,F,P,D,C,T,
02/06/09 12:00, 0.380, 0.000, 0.189, 2.5, 2.2, 31, 52.7, 35.9,0,0,1,0,0,0,0,1,0,0,0,1,

Since each column maps to a different flag, we actually have to create multiple Flag Map table entries and map each column to its own flag map.

Example:

Flag Map Name			Mapping Type	Description
BAM1022Status			DecBinary	BAM Flag
BAMFLAG_C			Binary	Count Error
BAMFLAG_D			Binary	Membrane Density
BAMFLAG_E			Binary	External Reset
BAMFLAG_F			Binary	Flow Out of Limits
BAMFLAG_I			Binary	Internal CPU Err
BAMFLAG_L			Binary	Power Fail
BAMFLAG_M			Binary	Maint/Calibration
BAMFLAG_N			Binary	Nozzle Stuck/Delta-T
BAMFLAG_P			Binary	Pressure Drop
BAMFLAG_R			Binary	Reference Membrane Err
BAMFLAG_T			Binary	Tape Break
BAMFLAG_U			Binary	Telemetry Fault
CPP			Hex	CPP flags

Incoming Bit Number	Map to Reading Flag	Inhibit Flag	Test Absence Of Flag	Annotation Text
0	B	<input type="checkbox"/>	<input type="checkbox"/>	Tape Break
1	?	<input type="checkbox"/>	<input type="checkbox"/>	Beta Detector
2	?	<input type="checkbox"/>	<input type="checkbox"/>	Sensor Range Outside Limits
3	B	<input type="checkbox"/>	<input type="checkbox"/>	Tape Advance
4	B	<input type="checkbox"/>	<input type="checkbox"/>	Flow Failure
5	B	<input type="checkbox"/>	<input type="checkbox"/>	Nozzle Failure
6	B	<input type="checkbox"/>	<input type="checkbox"/>	Digital Link Failure
7	P	<input type="checkbox"/>	<input type="checkbox"/>	Power Failure
8	?	<input type="checkbox"/>	<input type="checkbox"/>	Short Sample
9	M	<input type="checkbox"/>	<input type="checkbox"/>	Maintenance

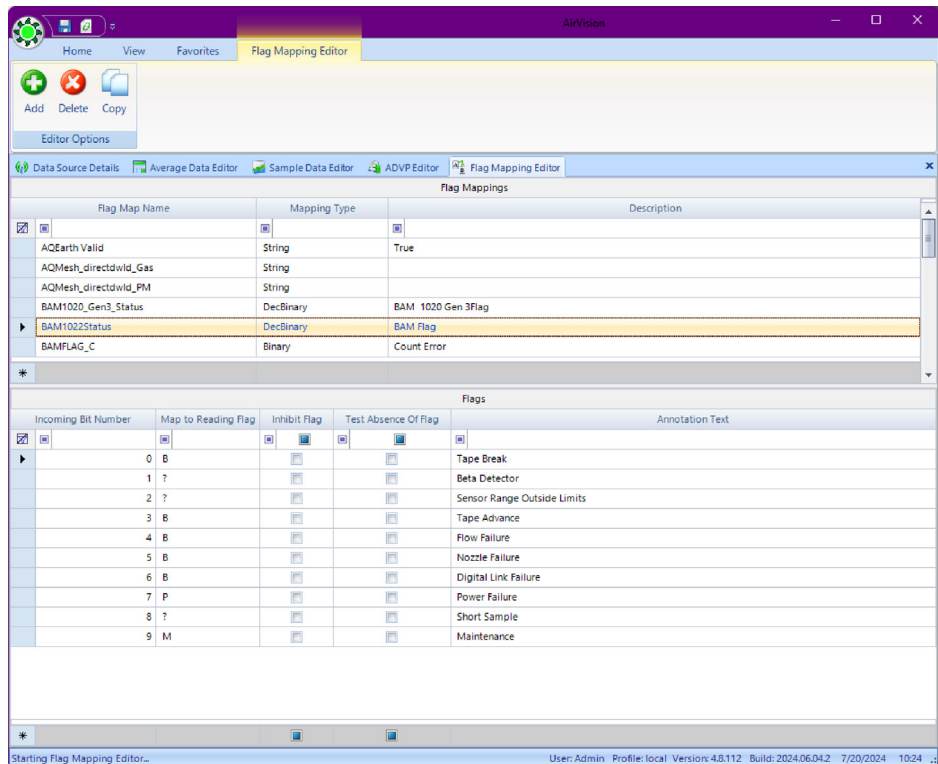
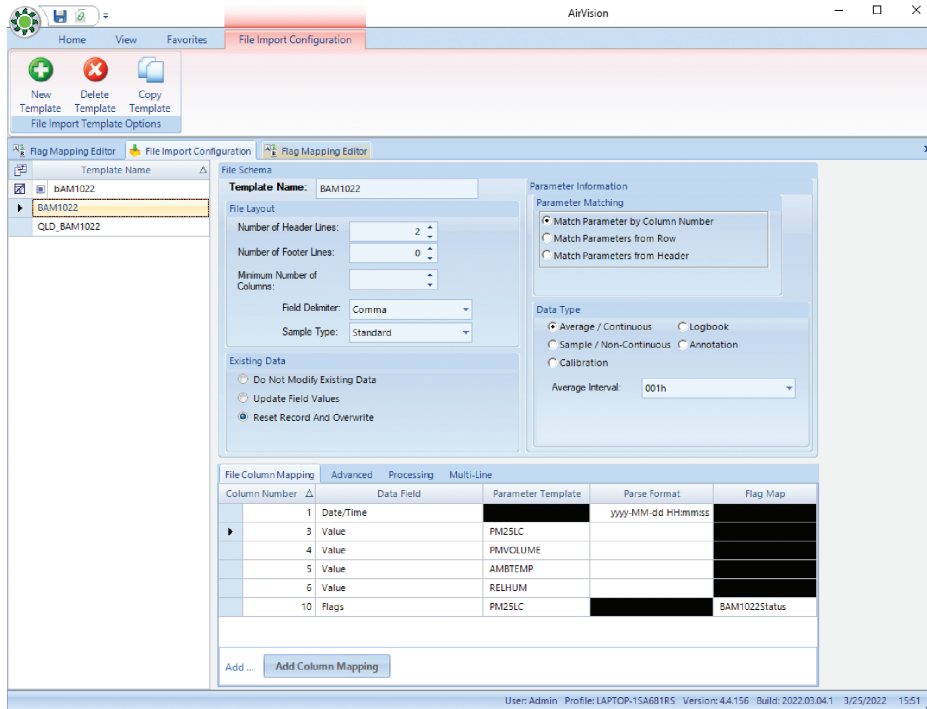
Flag Mapping Table

However, the BAM-1022 is considering an ‘all in one’ field, where the commas are removed and the binary pattern is given in one column, e.g.:

Station, 1

Time,Conc(mg/m3),Qtot(m3),no(V),WS(MPS),WS(MPS),RH(%),Delta(C),WS(MPS),FLAGS

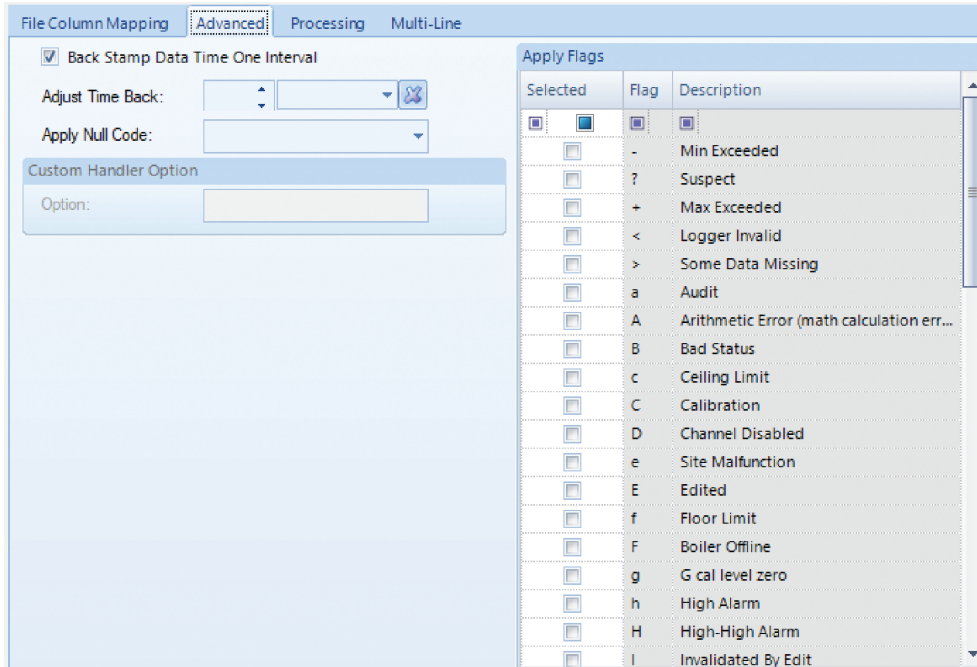
02/06/09 12:00, 0.380, 0.000, 0.189, 2.5, 2.2, 31, 52.7, 35.9,0384,



File Import Tool – Advanced Options

The File Import Templates have several advanced options, which were initially created in support of EPA's PAMS auto-GC monitoring program. They are detailed here, but users should carefully test any other implementations using these advanced features, using small data sets, to ensure the desired result.

Advanced Tab



Back Stamp One Time Interval

This replaces the previous **back stamp data** selection in the main screen. All data will be time-tagged with a time equal to the time in the file import tool, minus one average interval. This is commonly used to take hourly data tagged as 01:00 to 24:00 back to EPA standard time tags (00:00 to 23:00).

Adjust Time Back - is used to adjust time back other than an even interval period, or more than one interval (e.g., 40 minutes for auto-GC data, correcting data from GMT to local time, etc).

Apply Null Code

Applies the selected null code to all imported data. For example, if the imported file contains all audit data (and nothing else), an audit null code can be automatically applied to the data. For PAMS, this is used for CAL (daily upscale checks) to apply the AY or other appropriate null code.

Apply Flags

Applies the selected AirVision flag to all imported data. For PAMS, this is used to also apply the **C<** flag to the CAL data sets, or **B** to blank data sets.

Processing Tab

The screenshot shows the 'Processing' tab of the File Import Tool. It is divided into two main sections: 'Batch Processing' and 'Find and Replace'. In the 'Batch Processing' section, the 'Save In Batches' checkbox is unchecked, the 'Rows Per Batch' dropdown is set to 1, and the 'Continue On Error' checkbox is unchecked. In the 'Find and Replace' section, the 'Find Expression' and 'Replacement' text boxes are empty. A warning message 'Regular Expression syntax is required' is displayed above the 'Find Expression' field.

Save In Batches

In previous versions, the File Import Tool would not insert data if any particular row encounter a formatting or other error. In addition, a long file with thousands of rows would wait until processing before insertion into SQL. The File Import Tool now gives you the option to process a certain number of rows (even just one) and have the system save the results after that number of rows have been processed.

If a file routinely has errors in rows, the Save In Batches could be used with Rows = 1, and Continue on Error checked, in which case it will skip the bad rows and process all good rows.

Find And Replace

This function allows for strings in the file to be substituted before processing. This can be used to provide the File Import Tool with consistent input for flags, or to remove bad data that could otherwise halt substitution.

Example: A file provides **XXXX.X** in a numeric field when data is invalid. This would cause an error on the row, and other parameters on the row might not be imported. A search and replace to replace **XXXX.X** with **-9999** could allow import to continue, and ADVP or manual editing could be used later to mark the **-9999** values as invalid.

This screenshot shows the 'Processing' tab with the 'Find and Replace' section populated. The 'Find Expression' field now contains the text 'XXXX.X' and the 'Replacement' field contains '-9999'. The 'Batch Processing' section remains the same as in the previous screenshot.

Note that this system uses regular expression (“regex”) language, a programming syntax that is documented online, one example being <https://www.regex.com/regex-quickstart.html>

Monitor Assessment Editors and Reports

In the Monitor Assessment Editor the AQS Report for QA transactions covers a number of activities. The AQS Report can include the 1-Point QC from Calibrations by setting “PREC” in the Level field in the calibration configuration.

The new Monitor Assessment Editors, transactions, and reports cover the following activities:

- ◆ Executive (usually the current machine)
- ◆ Duplicate Assessment
- ◆ Field Proficiency Test
- ◆ Flow Rate Verification (+ Coarse version)
- ◆ National Performance Audit
- ◆ One Point Quality Control
- ◆ Performance Evaluation Program
- ◆ Replicate Assessment
- ◆ Semi Annual flow Rate Audit (+ Coarse version)

The data entry editors can be found under **Data Editors->Monitor Assessment**, and follows the model of the old PARS editors:

Flow Rate Verification Details

Selection
 Date Range
 Start Date: 02/05/2019 00:00
 End Date: 02/05/2019 23:59

Parameter Selection
 Drag a column header here to group by that column.

Site Name	Parameter Name	Parameter Template Name	Parameter Description
SITEONE	PM25	PM25	Particulate Matter 2.5 microns or less, hourly data
SITEONE	PM25LC	PM25LC	PM2.5 Total Mass Manual Method Local Conditions
SITEONE	PM25LC_POC1	PM25LC	PM2.5 Total Mass Manual Method Local Conditions

Test Selection
 Drag a column header here to group by that column.

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting
SITEONE	PM25LC	145	02/05/2019 16:24	1	105 - Micrograms/cubic meter (LC)	<input type="checkbox"/>

Monitor Assessment Type: Flow Rate Verification

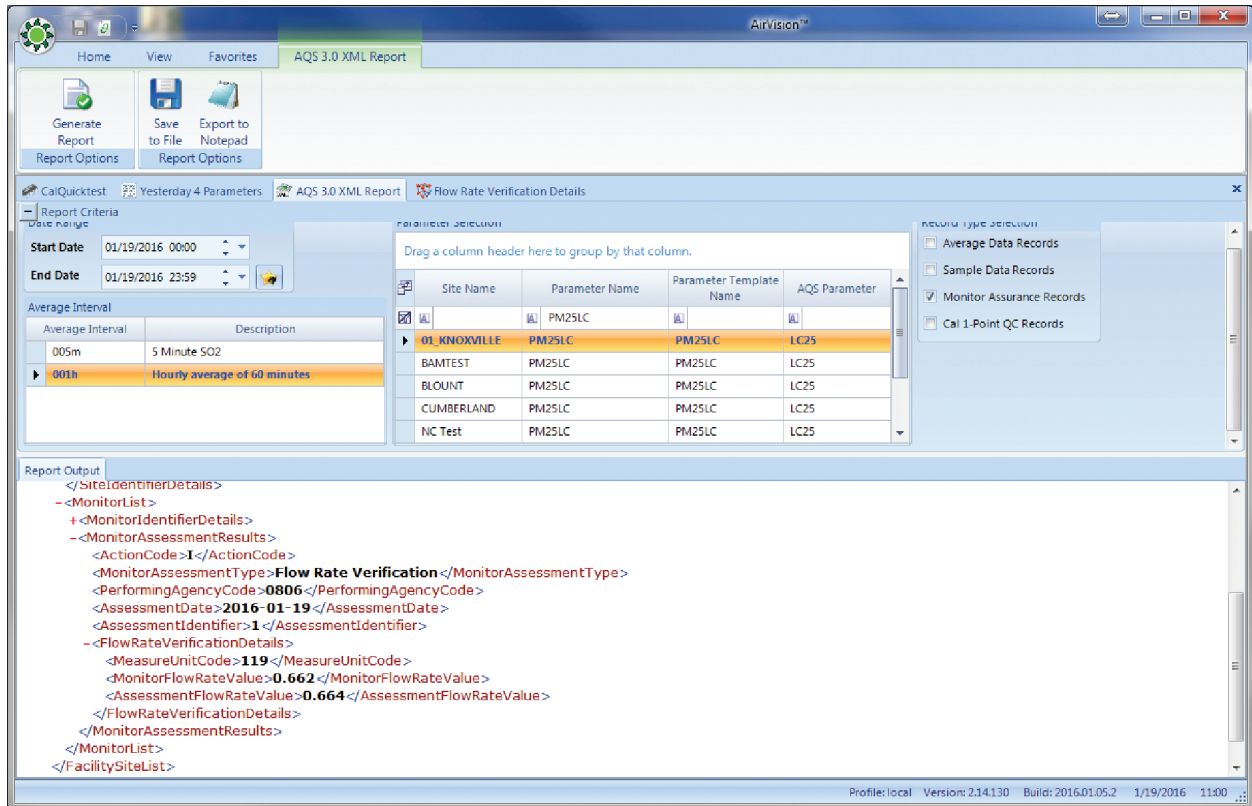
Assessment Details
 Assessment Date: 02/05/2019 16:24
 Performing Agency: 0581 - Knox County Department Of Air Pollution Control
 Assessment Identifier Number: _1
 Exclude From Reporting

Monitor Information
 Monitor Parameter: SITEONE : PM25LC
 AQS Unit Code: 105 - Micrograms/cubic meter (LC)
 Comment:

Recorded Values
 Monitor Value:
 Assessment Value:

Note that the user has the opportunity to override Unit Codes if they do not match the parameter code of the monitor parameter.

To generate the transactions in AQS (XML 3.0), select **Monitor Assessment** checkbox in the AQS report. While the 1-point QC records are supported for gases in the AQS Text report, the other QA transactions are not.



Monitor Assessment

The Monitor Assessment tests are run outside of the software. The information from those tests have to be hand entered into the Monitor Assessment editor by the user. The Monitor Assessment data records can also be selected to be outputted on the AQS 3.0 XML report.

To open each assessment editor, expand Monitor Assessment from the Data Editors menu, and single click the editor's name. The editor's tab will open on the right side of the screen.

To add new test information to each editor, select the **Add Assessment button** on the Ribbon at the top. It will put blank fields in each section on the right side of the screen, which are described below.

To open an existing test in each editor, single click the blue square on the left side of the site and parameter to highlight the row listed in the Parameter column in the Test Selection section. As you select a site and parameter, the fields in the other three sections will change to reveal the settings for that parameter.

To delete an existing test from each editor, single click the blue square on the left side of the site and parameter to highlight the row listed in the Parameter column in the Test Selection section that you want to remove. Select the **Delete Assessment button** on the Ribbon at the top. It will not prompt you to make sure you want to delete. Once the delete button is selected the template is immediately removed from the list.

After putting in new entries or making any changes in the editors, select the disk icon on the Quick Access Toolbar at the very top to save the new settings before exiting this screen.

Annual Performance Evaluation

Assessment Details section

Assessment Date – Click down arrow and select the date the test was run from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill if the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

Monitor Information section

Monitor Parameter – Click the down arrow and select a site and parameter from the drop down a list.

Monitor Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

AQS Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

Recorded Values section

Monitor Concentration – Enter in the value(s) that was the result of the test.

Assessment Concentration – Enter in the value(s) that was the result of the test.

Annual Performance Evaluation

Test Selection

Drag a column header here to group by that column.

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM25LC	145	05/08/2015 16:01	1	105 - Micrograms/cubic meter (LQ)	<input type="checkbox"/>	0581 - Knox County Depa
SITEONE	PMVOLUME		11/19/2015 16:57	1	065 - Cubic meter	<input type="checkbox"/>	0581 - Knox County Depa
EAST	PM25LC	145	11/19/2015 16:58	1	105 - Micrograms/cubic meter (LQ)	<input type="checkbox"/>	0581 - Knox County Depa

Monitor Assessment Type: Annual PE

Assessment Details

Assessment Date: 05/08/2015 16:01 Assessment Identifier Number: 1

Performing Agency: 0581 - Knox County Department Of Air Pollution Control Exclude From Reporting

Monitor Information

Monitor Parameter: SITEONE : PM25LC

Monitor Method Code: 145 AQS Unit Code: 105 - Micrograms/cubic meter (LQ)

Recorded Values

	1	2	3	4	5
Monitor Concentration	100.00000	200.00000	300.00000	400.00000	500.00000
Assessment Concentration	150.00000	250.00000	350.00000	450.00000	550.00000
	6	7	8	9	10
Monitor Concentration	600.00000	700.00000	800.00000	900.00000	1,000.00000
Assessment Concentration	650.00000	750.00000	850.00000	950.00000	1,050.00000

Duplicate Assessment Details

Assessment Details section

Assessment Date – Click down arrow and select the date the test was ran from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

Monitor Information section

Monitor Parameter – Click the down arrow and select a site and parameter from the drop down a list.

Monitor Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

AQS Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

Recorded Values section – Enter in the value(s) that was the result of the test.

The screenshot displays the 'Duplicate Assessment Details' web application interface. At the top, there is a 'Test Selection' section with a table containing one data row. Below this, there are three main form sections: 'Assessment Details', 'Monitor Information', and 'Recorded Values'.

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM25LC	145	05/08/2015 16:02	1	105 - Micrograms/cubic meter (LC)	<input type="checkbox"/>	0581 - Knox County Departm

Assessment Details

Monitor Assessment Type: Duplicate

Assessment Date: 05/08/2015 16:02 Assessment Identifier Number: 1

Performing Agency: 0581 - Knox County Department Of Air Pollution Control Exclude From Reporting

Monitor Information

Monitor Parameter: SITEONE : PM25LC

Monitor Method Code: 145 AQS Unit Code: 105 - Micrograms/cubic meter (LC)

Recorded Values

1	2	3	4	5
0.20000	0.30000	0.40000	0.50000	0.60000

Field Proficiency Test Details

Assessment Details section

Assessment Date – Click down arrow and select the date the test was run from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

Monitor Information section

Monitor Parameter – Click the down arrow and select a site and parameter from the drop down a list.

Monitor Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

AQS Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

Recorded Values section

Monitor Value – Enter in the value that was the result of the test.

Assessment Value – Enter in the value that was the result of the test.

The screenshot displays the 'Field Proficiency Test Details' form. At the top, there is a 'Test Selection' section with a table containing one data row. Below this, the 'Monitor Assessment Type' is set to 'Field PT'. The 'Assessment Details' section includes fields for 'Assessment Date' (05/08/2015 16:03), 'Assessment Identifier Number' (1), 'Performing Agency' (0581 - Knox County Department Of Air Pollution Control), and an 'Exclude From Reporting' checkbox. The 'Monitor Information' section shows 'Monitor Parameter' (SITEONE : PM25LC), 'Monitor Method Code' (145), and 'AQS Unit Code' (105 - Micrograms/cubic meter (LQ)). The 'Recorded Values' section at the bottom has 'Monitor Value' (506.00000) and 'Assessment Value' (600.00000).

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM25LC	145	05/08/2015 16:03	1	105 - Micrograms/cubic meter (LQ)	<input type="checkbox"/>	0581 - Knox County Depa

Monitor Assessment Type: Field PT

Assessment Details

Assessment Date: 05/08/2015 16:03 Assessment Identifier Number: 1

Performing Agency: 0581 - Knox County Department Of Air Pollution Control Exclude From Reporting

Monitor Information

Monitor Parameter: SITEONE : PM25LC

Monitor Method Code: 145 AQS Unit Code: 105 - Micrograms/cubic meter (LQ)

Recorded Values

Monitor Value: 506.00000 Assessment Value: 600.00000

Flow Rate Coarse Details

Assessment Details section

Assessment Date – Click down arrow and select the date the test was ran from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

PM10 Monitor Information section

PM10 Parameter – Click the down arrow and select a site and parameter from the drop down a list.

PM10 Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

FlowUnit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

PM2.5 Monitor Information section

PM2.5 Parameter – Click the down arrow and select a site and parameter from the drop down a list.

PM2.5 Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

Assessment Results section

Monitor Flow Rate – Enter in the value that was the result of the test.

Assessment Flow Rate – Enter in the value that was the result of the test.

Flow Rate Coarse Details

Test Selection

Drag a column header here to group by that column.

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM10C_CONTIN	123	11/24/2015 15:32	-	1 001 - Micrograms/cubic meter (25 Q)	<input type="checkbox"/>	0581 - Knox County Departme

Monitor Assessment Type: **Flow Rate Verification for PMc**

Assessment Details

Assessment Date: 11/24/2015 15:32
 Performing Agency: 0581 - Knox County Department Of Air Pollution Control
 Assessment Identifier Number: _1
 Exclude From Reporting

PM10 Monitor Information

PM10 Parameter: SITEONE : PM10C_CONTIN
 PM10 Method Code: 123 Flow Unit Code: 001 - Micrograms/cubic meter (25 Q)

PM2.5 Monitor Information

PM2.5 Parameter: SITEONE : PM25LC
 PM2.5 Method Code: 145

Assessment Results

	PM10	PM2.5
Monitor Flow Rate	10.00000	30.00000
Assessment Flow Rate	20.00000	40.00000

Flow Rate Verification Details

Assessment Details section

Assessment Date – Click down arrow and select the date the test was ran from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

Monitor Information section

Monitor Parameter – Click the down arrow and select a site and parameter from the drop down a list.

AQS Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

Recorded Values section

Monitor Value – Enter in the value that was the result of the test.

Assessment Value – Enter in the value that was the result of the test.

Flow Rate Verification Details

Test Selection

Drag a column header here to group by that column.

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM25LC	145	05/08/2015 15:59	1	105 - Micrograms/cubic meter (LQ)	<input type="checkbox"/>	0581 - Knox County Depa

Monitor Assessment Type: Flow RateVerification

Assessment Details

Assessment Date: 05/08/2015 15:59 Assessment Identifier Number: 1

Performing Agency: 0581 - Knox County Department Of Air Pollution Control Exclude From Reporting

Monitor Information

Monitor Parameter: SITEONE : PM25LC

AQS Unit Code: 105 - Micrograms/cubic meter (LQ)

Recorded Values

Monitor Value: 900.00000 Assessment Value: 756.00000

National Performance Audit

Assessment Details section

Assessment Date – Click down arrow and select the date the test was ran from the drop down a calendar..

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

NPAP Assessment Details section

NPAP Assessment Type – Click the down arrow and select BOA (Back of the Analyzer) or TTP (Through the Sampling Inlet or Probe) from the drop down list..

NPAP Method Code – Enter in the method code of the NPAP.

Monitor Information section

Monitor Parameter – Click the down arrow and select a site and parameter from the drop down a list.

Monitor Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

AQS Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

Recorded Values section

Monitor Concentration – Enter in the value(s) that was the result of the test.

Assessment Concentration – Enter in the value(s) that was the result of the test.

National Performance Audit

Test Selection

Drag a column header here to group by that column.

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM25LC	145	05/08/2015 15:57	1	105 - Micrograms/cubic meter (LC)	<input type="checkbox"/>	0581 - Knox County Department O

Monitor Assessment Type: NPAP

Assessment Details

Assessment Date: 05/08/2015 15:57
 Performing Agency: 0581 - Knox County Department Of Air Pollution Control
 Assessment Identifier Number: _1
 Exclude From Reporting

NPAP Assessment Details

NPAP Assessment Type: TIP
 NPAP Method Code: 123

Monitor Information

Monitor Parameter: SITEONE : PM25LC
 Monitor Method Code: 145
 AQS Unit Code: 105 - Micrograms/cubic meter (LC)

Recorded Values

	1	2	3	4	5
Monitor Concentration	200.00000	300.00000	400.00000	500.00000	600.00000
Assessment Concentration	225.00000	325.00000	425.00000	525.00000	625.00000
	6	7	8	9	10
Monitor Concentration	700.00000	800.00000	900.00000	1,000.00000	2,000.00000
Assessment Concentration	725.00000	825.00000	925.00000	1,025.00000	2,025.00000

One Point Quality Control

Assessment Details section

Assessment Date – Click down arrow and select the date the test was ran from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

Monitor Information section

Monitor Parameter – Click the down arrow and select a site and parameter from the drop down a list.

Monitor Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

AQS Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

Recorded Values section

Monitor Value – Enter in the value that was the result of the test.

Assessment Value – Enter in the value that was the result of the test.

The screenshot displays the 'OnePoint Quality Control' interface. At the top, there is a 'Test Selection' section with a table. Below this is a 'Monitor Assessment Type' dropdown set to '1-Point QC'. The 'Assessment Details' section includes fields for 'Assessment Date' (05/04/2015 10:20), 'Assessment Identifier Number' (1), 'Performing Agency' (0581 - Knox County Department Of Air Pollution Control), and an 'Exclude From Reporting' checkbox. The 'Monitor Information' section shows 'Monitor Parameter' (SITEONE : PM25LC), 'Monitor Method Code' (145), and 'AQS Unit Code' (105 - Micrograms/cubic meter (LQ)). The 'Recorded Values' section at the bottom has 'Monitor Value' (2.53000) and 'Assessment Value' (4.00000).

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
<input checked="" type="checkbox"/>	PM25LC	145	05/04/2015 10:20	1	105 - Micrograms/cubic meter (LQ)	<input type="checkbox"/>	0581 - Knox County Departm

Performance Evaluation Program Details

Assessment Details section

Assessment Date – Click down arrow and select the date the test was ran from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

Monitor Information section

Monitor Parameter – Click the down arrow and select a site and parameter from the drop down a list.

Monitor Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

AQS Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

Performance Evaluation section

Sampler Type – Click the down arrow and select Independent or Collocated from the drop down list.

Sampler Concentration – Enter in the value that was the result of the test.

Site	Parameter	Monitor Method Code	Assessment Date	AssessmentIdentifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM25LC	145	05/08/2015 16:06	1	105 - Micrograms/cubic meter (LC)	<input type="checkbox"/>	0581 - Knox County Depa

Monitor Assessment Type: PEP

Assessment Details

Assessment Date: 05/08/2015 16:06 Assessment Identifier Number: 1

Performing Agency: 0581 - Knox County Department Of Air Pollution Control Exclude From Reporting

Monitor Information

Monitor Parameter: SITEONE : PM25LC

Monitor Method Code: 145 AQS Unit Code: 105 - Micrograms/cubic meter (LC)

Performance Evaluation

Sampler Type: Independent Sampler Concentration: 675.00000

Replicate Assessment Details

Assessment Details section

Assessment Date – Click down arrow and select the date the test was ran from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

Monitor Information section

Monitor Parameter – Click the down arrow and select a site and parameter from the drop down a list.

Monitor Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

AQS Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

Recorded Values section – Enter in the value that was the result of the test.

Replicate Assessment Details

Test Selection

Drag a column header here to group by that column.

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM25LC	145	05/08/2015 16:07	1	105 - Micrograms/cubic meter (LQ)	<input type="checkbox"/>	0581 - Knox County Depart

Monitor Assessment Type: Replicate

Assessment Details

Assessment Date: 05/08/2015 16:07

Assessment Identifier Number: _1

Performing Agency: 0581 - Knox County Department Of Air Pollution Control

Exclude From Reporting:

Monitor Information

Monitor Parameter: SITEONE : PM25LC

Monitor Method Code: 145

AQS Unit Code: 105 - Micrograms/cubic meter (LQ)

Recorded Values

1	2	3	4	5
0.35400	0.36800	0.37000	0.37500	0.38000

Semi-Annual Flow Rate Audit Coarse Details

Assessment Details section

Assessment Date – Click down arrow and select the date the test was ran from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

PM10 Monitor Information section

PM10 Parameter – Click the down arrow and select a site and parameter from the drop down a list.

PM10 Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

Flow Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

PM2.5 Monitor Information section

PM2.5 Parameter – Click the down arrow and select a site and parameter from the drop down a list.

PM2.5 Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

Assessment Results section

Monitor Flow Rate – Enter in the value that was the result of the test.

Assessment Flow Rate – Enter in the value that was the result of the test.

Semi Annual Flow Rate Audit Coarse Details

Test Selection

Drag a column header here to group by that column.

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM10C_CONTIN	123	07/29/2015 15:04	-	105 - Micrograms/cubic meter (LQ)	<input type="checkbox"/>	0581 - Knox County Departme

Monitor Assessment Type: Semi-Annual Flow Rate Audit for PMc

Assessment Details

Assessment Date: 07/29/2015 15:04 Assessment Identifier Number: _1

Performing Agency: 0581 - Knox County Department Of Air Pollution Control Exclude From Reporting

PM10 Monitor Information

PM10 Parameter: SITEONE : PM10C_CONTIN

PM10 Method Code: 123 Flow Unit Code: 105 - Micrograms/cubic meter (LQ)

PM2.5 Monitor Information

PM2.5 Parameter: SITEONE : PM25LC

PM2.5 Method Code: 145

Assessment Results

	PM10	PM2.5
Monitor Flow Rate	150.00000	100.00000
Assessment Flow Rate	156.00000	101.00000

Semi-Annual Flow Rate Audit Details

Assessment Details section

Assessment Date – Click down arrow and select the date the test was ran from the drop down a calendar.

Assessment Identifier Number – Use the radio buttons to enter in the number of the test that was performed.

Performing Agency – Click the down arrow and select the proper agency from the drop down List, but it should auto-fill is the agency code has been entered in under the System in the Site/Parameter screen.

Exclude From Reporting – Check the box if the record is to be excluded on the AQS XML report.

Monitor Information section

Monitor Parameter – Click the down arrow and select a site and parameter from the drop down a list.

Monitor Method Code – Enter in the method code of the main monitor, but should auto-fill when the Monitor Parameter is selected.

AQS Unit Code – Click the down arrow and select a site and parameter from the drop down a list, but should auto-fill when the Monitor Parameter is selected.

Recorded Values section

Monitor Value – Enter in the value that was the result of the test.

Assessment Value – Enter in the value that was the result of the test.

Test Selection
 Drag a column header here to group by that column.

Site	Parameter	Monitor Method Code	Assessment Date	Assessment Identifier	AQS Unit Code	Exclude From Reporting	Performing Agency
SITEONE	PM25LC	145	11/20/2015 16:50	-	105 - Micrograms/cubic meter (LC)	<input type="checkbox"/>	0581 - Knox County Departm

Monitor Assessment Type: Semi-Annual Flow Rate Audit

Assessment Details
 Assessment Date: 11/20/2015 16:50
 Assessment Identifier Number: _1
 Performing Agency: 0581 - Knox County Department Of Air Pollution Control
 Exclude From Reporting

Monitor Information
 Monitor Parameter: SITEONE : PM25LC
 Monitor Method Code: 145
 AQS Unit Code: 105 - Micrograms/cubic meter (LC)

Recorded Values
 Monitor Value: 100.00000
 Assessment Value: 110.00000

Monitor Assessment Reports

Annual Performance Evaluation Report

To run the annual performance evaluation report, expand Monitor Assessment Reports from the Reports menu, and single click the Annual Performance Evaluation Report. The Annual Performance/Evaluation Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the Annual Performance Evaluation Monitor Assessment Editor in a report format. Each parameter for all sites is shown separately per page. Example of the report is shown below.

Current Date 11/19/2015 5:02 PM

Annual Performance Evaluation Report

PM25LC
Micrograms/cubic meter (LC)

<u>Site Name</u>	<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Method Code</u>	<u>Assessment</u>										
SITEONE	0581 - Knox County Department Of Air Pollution Control	2015-05-08 1601	145	Monitor Value	100	200	300	400	500	600	700	800	900	1000
				Assessment	150	250	350	450	550	650	750	850	950	1050
EAST	0581 - Knox County Department Of Air Pollution Control	2015-11-19 1658	145	Monitor Value										
				Assessment										

Duplicate Assessment Report

To run the duplicate assessment report, expand Monitor Assessment Reports from the Reports menu, and single click the Duplicate Assessment Report. The Duplicate Assessment Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the Duplicate Assessment Monitor Assessment Editor in a report format. Each parameter for all sites is shown separately per page. Example of the report is shown below.

Current Date: 11/20/2015 4:59 PM

Duplicate Assessment Report

PM25LC
Micrograms/cubic meter (LC)

<u>Site Name</u>	<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Method Code</u>	<u>Assessments</u>				
SITEONE	0581 - Knox County Department Of Air Pollution Control	2015-05-08 1602	145	0.2	0.3	0.4	0.5	0.6

Field Proficiency Test Details Report

To run the field proficiency test report, expand Monitor Assessment Reports from the Reports menu, and single click the Field Proficiency Test Details Report. The Field Proficiency Test Details Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the Field Proficiency Test Details Monitor Assessment Editor in a report format. Each parameter for all sites is shown separately per page. Example of the report is shown below.

Current Date: 11/23/2015 12:31 PM

Field Proficiency Details Report

PM25LC

Micrograms/cubic meter (LC)

<u>Site Name</u>	<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Method Code</u>	<u>Assessment Value</u>	<u>Monitor Value</u>
SITEONE	0581 - Knox County Department Of Air Pollution Control	2015-05-08 16:03	145	600	506

Flow Rate Coarse Details Report

To run the flow rate coarse report, expand Monitor Assessment Reports from the Reports menu, and single click the Flow Rate Coarse Details Report. The Flow Rate Coarse Details Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon above the Main Navigation menu. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the Flow Rate Coarse Details Monitor Assessment Editor in a report format. Each site is shown separately per page. Example of the report is shown below.

Current Date: 11/24/2015 3:33 PM

Flow Rate Coarse Details Report

SITEONE

PM 10

<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Parameter</u>	<u>Method Code</u>	<u>Assessment Value</u>	<u>Monitor Value</u>
0581 - Knox County Department Of Air Pollution Control	2015-11-24 15:32	PM10C_CONT IN	123	20	10

PM 25

<u>Site and Parameter</u>	<u>Method Code</u>	<u>Assessment Value</u>	<u>Monitor Value</u>
SITEONE PM25LC	145	40	30

Flow Rate Verification Details Report

To run the flow rate verification report, expand Monitor Assessment Reports from the Reports menu, and single click Flow Rate Verification Details Report. The Flow Rate Verification Details Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the Flow Rate Verification Details Monitor Assessment Editor in a report format. Each parameter for all sites is shown separately per page. Example of the report is shown below.

Current Date: 11/23/2015 3:57 PM

Flow Rate Verifications Detail Report

PM25LC

Micrograms/cubic meter (LC)

<u>Site Name</u>	<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Method Code</u>	<u>Assessment Value</u>	<u>Monitor Value</u>
SITEONE	0581 - Knox County Department Of Air Pollution Control	2015-05-08 15:59	145	756	900

National Performance Audit Report

To run the national performance audit report, expand Monitor Assessment Reports from the Reports menu, and single click the National Performance Audit Report. The National Performance Audit Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the National Performance Audit Monitor Assessment Editor in a report format. Each parameter for all sites is shown separately per page. Example of the report is shown below.

Current Date: 11/23/2015 4:17 PM

National Performance Audit Report

PM25LC

Micrograms/cubic meter (LC)

<u>Site Name</u>	<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Method Code</u>	<u>Ass. Id</u>	<u>NPAP Ass. Type</u>	<u>NPAP Method Code</u>	<u>Assessments</u>										
							Assessment	200	300	400	500	600	700	800	900	1000	2000
SITEONE	0581 - Knox County Department Of Air Pollution Control	2015-05-08 15:57	145	1	TTP	123	Assessment	200	300	400	500	600	700	800	900	1000	2000
							Monitor Value	225	325	425	525	625	725	825	925	1025	2025

One Point Quality Control Report

To run the one point quality control report, expand Monitor Assessment Reports from the Reports menu, and single click the One Point Quality Control Report. The One Point Quality Control Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the One Point Quality Control Monitor Assessment Editor in a report format. Each parameter for all sites is shown separately per page. Example of the report is shown below.

Current Date: 11/23/2015 4:01 PM

One Point Quality Control Report

PM25LC

Micrograms/cubic meter (LC)

<u>Site Name</u>	<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Method Code</u>	<u>Assessment Value</u>	<u>Monitor Value</u>
SITEONE	0581 - Knox County Department Of Air Pollution Control	2015-05-04 10:20	145	4	2.53

Performance Evaluation Program Details Report

To run the performance evaluation program report, expand Monitor Assessment Reports from the Reports menu, and single click the Performance Evaluation Program Details Report. The Performance Evaluation Program Details Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the Performance Evaluation Program Details Monitor Assessment Editor in a report format. Each parameter for all sites is shown separately per page. Example of the report is shown below.

Current Date: 11/23/2015 4:02 PM

Performance Evaluation Program Details Report

PM25LC

Micrograms/cubic meter (LC)

<u>Site Name</u>	<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Method Code</u>	<u>Ass. Id</u>	<u>Sampler Type</u>	<u>Sampler Concentration</u>
SITEONE	1025 - Tennessee Division Of Air Pollution Control	2015-05-08 16:06	145	1	Independent	675

Replicate Assessment Details Report

To run the replication assessment report, expand Monitor Assessment Reports from the Reports menu, and single click the Replicate Assessment Details Report. The Replicate Assessment Details Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the Replicate Assessment Details Monitor Assessment Editor in a report format. Each parameter for all sites is shown separately per page. Example of the report is shown below.

Current Date: 11/23/2015 4:01 PM

One Point Quality Control Report

PM25LC

Micrograms/cubic meter (LC)

<u>Site Name</u>	<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Method Code</u>	<u>Assessment Value</u>	<u>Monitor Value</u>
SITEONE	0581 - Knox County Department Of Air Pollution Control	2015-05-04 10:20	145	4	2.53

Semi-Annual Flow Rate Audit Coarse Details Report

To run the semi annual flow rate audit coarse report, expand Monitor Assessment Reports from the Reports menu, and single click the Semi Annual Flow Rate Audit Coarse Details Report and the Semi Annual Flow Rate Audit Coarse Details Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section. The report simply displays the information that has been manually entered into the Semi Annual Flow Rate Audit Coarse Details Monitor Assessment Editor in a report format. Each site is shown separately per page. Example of the report is shown below.

Current Date: 11/24/2015 3:43 PM

Semi Annual Flow Rate Audit Coarse Details Report

SITEONE

<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Parameter</u>	<u>PM 10</u>			<u>Site and Parameter</u>	<u>PM 25</u>		
			<u>Method Code</u>	<u>Assessment Value</u>	<u>Monitor Value</u>		<u>Method Code</u>	<u>Assessment Value</u>	<u>Monitor Value</u>
0581 - Knox County Department Of Air Pollution Control	2015-07-29 15:04	PM10C_CONT IN		156	150	SITEONE PM25LC	145	101	100

Semi-Annual Flow Rate Audit Details Report

To run the semi annual flow rate audit report, expand Monitor Assessment Reports from the Reports menu, and single click the Semi Annual Flow Rate Audit Details Report. The Semi Annual Flow Rate Audit Details Report tab will open on the right side of the screen. After making the query selection to run the report, select the Generate Report button on the Ribbon at the top. This will bring up the report below the query in the Report Output section.

The report simply displays the information that has been manually entered into the Semi Annual Flow Rate Audit Details Assessment Editor in a report format. Each parameter for all sites is shown separately per page. Example of the report is shown below

Current Date: 11/23/2015 4:09 PM

Semi-Annual Flow Rate Audit Details Report

PM25LC

Micrograms/cubic meter (LC)

<u>Site Name</u>	<u>Performing Agency</u>	<u>Assessment Date</u>	<u>Method Code</u>	<u>Assessment Value</u>	<u>Monitor Value</u>
SITEONE	0581 - Knox County Department Of Air Pollution Control	2015-11-20 16:50	145	110	100

Data Rollup Processor

The Data Rollup Processor is an optional module, but available at no additional cost. (It is not normally enabled to simplify the menu.) The Data Rollup Processor allows shorter-term averages to be rolled up into larger block or rolling averages. Examples of this would include:

- Re-creating hourly data from 1-minute data
- Rolling up 5-minute or other odd intervals from a directly polled instrument to hourly data
- Rolling up hourly averages to daily averages
- Creating a new parameter with an 8-hour rolling average (e.g., ozone) calculated within AirVision.

The calculation can be done both manually (**Utilities->Manual Average Data Rollup**) or it can be scheduled in **Configuration Editors>Task Scheduler**.

Before doing the calculation, set up the rollup programs and tie them to specific **Parameter Tags**. A **Tag** is a term for a combination of a parameter and an average interval (e.g., hourly ozone, 1-minute CO). The intervals are specific to the frequency at which data is inserted into the database, so the system can't distinguish between OZONE:1h that comes from a block average of minute data and OZONE:1h that is an 8-hour rolling average, updated on the hour. For rolling averages, create a new parameter in the Site/Parameter editor to store the rolling average data. Usually, the Data Average Rollup Configuration Editor will automatically create needed tags for you.

Once all the tags you need exist, use the **Configuration->Data Average Rollup Configuration** to create your new rollup programs:

Rollup Method	Input Tag	Output Tag
1h to 1d	SITEONE : BARPRESS : 001h	SITEONE : BARPRESS : 001d
5m to 1h	SITEONE : OZONE : 005m	SITEONE : OZONE : 001h
*		

Task Details

General | Advanced

Basic Task Information

Task Name: Average Data Rollup Task Task Enabled

Task Description: Average Data Rollup Task

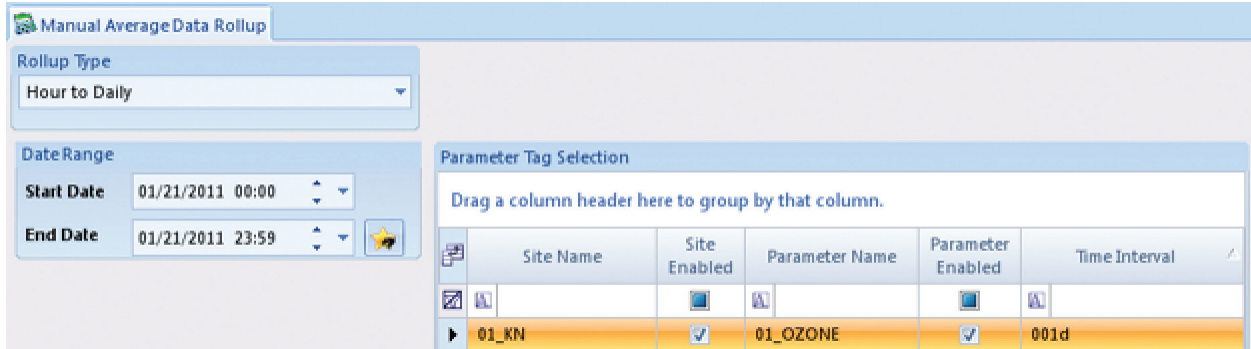
Rollup Method: 5m to 1h

Drag a column header here to group by that column.

Selected	Site Name	Site Enabled	Parameter Name	Parameter Enabled	Time Interval
<input checked="" type="checkbox"/>	SITEONE	<input checked="" type="checkbox"/>	OZONE	<input checked="" type="checkbox"/>	001h

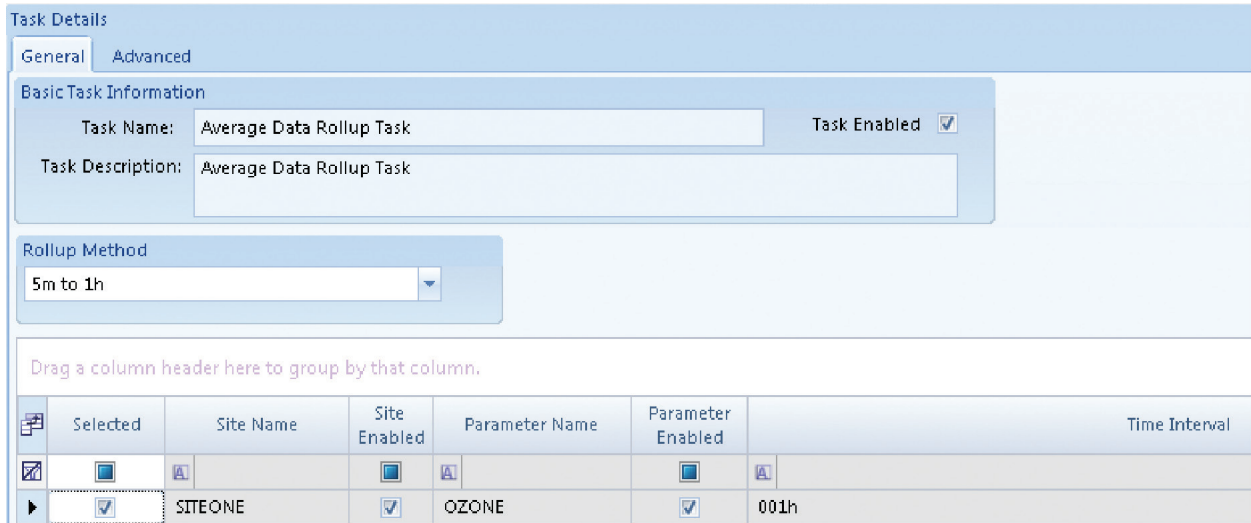
Create new tags in List Editors>Parameter Tag Editor

If you need to create new tags (e.g., create a daily average tag, or create the 1-hour tag for your new OZONE_8HR parameter), open **List Editors>Parameter Tag Editor**. To run a program manually, go to **Utilities>Manual Average Data Rollup**, select the **Rollup Type**, **Date Range**, and **Parameter Tag Selection**. Click the **Process Rollup** button.



To run a program manually, Utilities>Manual Average Data Rollup

To run a **Rollup Task** automatically, create a new **Average RollupTask** in **Configuration Editors>Task Scheduler>Average Rollup Task**, and select an **Average Data Rollup Task**. Then select the specific **Task Type**, **Start Time**, **Repeat Interval**, and **Task Description**.



Automatic Rollup Task in Configuration Editors>Task Scheduler>Add Average Rollup Task

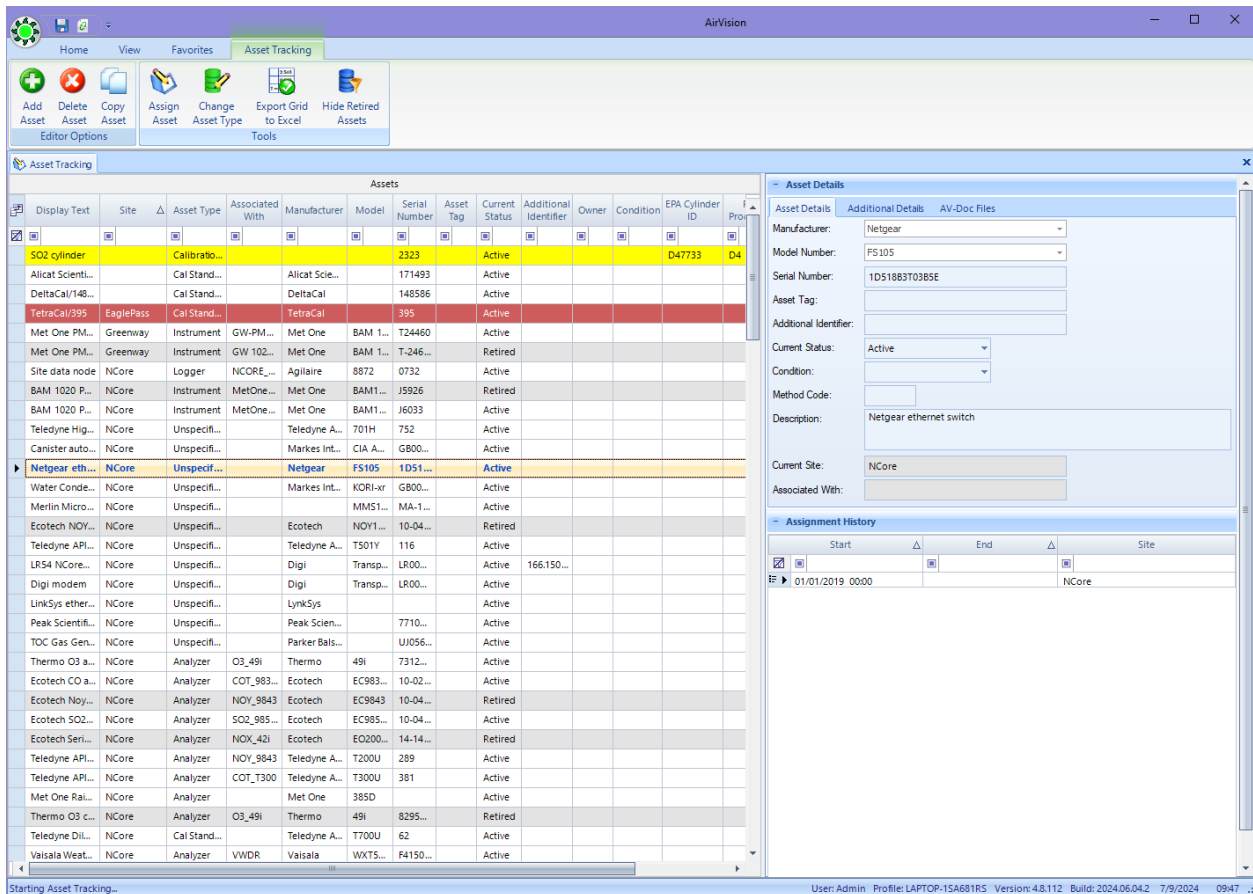
Asset Tracking & Work Task Tracking Module

Asset Tracking

The Asset Tracking is designed to help organizations track analyzers, data loggers, major components, calibration equipment, etc.

Any asset can be added into the system and its location and history can be tracked as to where it has been and what parameters have been used to monitor so that the history will show if an analyzer has been used at a particular site and then moved to another location, etc. The tracking can also be used to look at a pollutant monitored at a particular site and see the history of the different instruments used to monitor that pollutant at that particular site.

To get started select the Asset Tracking menu under Data Editors.



Note that for Cal Standard or Bottle assets The Asset Tracking editor will now:

- ◆ highlight cell in red if current date > expiration
- ◆ highlight cell in yellow if current date + 60 days > expiration

For all assets, the editor will show:

- ◆ highlight cell in grey if retired
- ◆ highlight cell in light orange if asset in repair

To add an asset click the **Add Asset** button on the Ribbon at the top, to open the Add New Asset window.

Asset Details

Type

Analyzer Unspecified

Cal Standard Zero Air Generator

Calibration Bottle/Tank

Instrument

Logger

Notes

Start Date: 07/09/2024 09:49 End Date:

Associate With Object Associate With Site Only Free Form Text

Drag a column header here to group by that column.

	Site Name	Parameter Name	Parameter Template Name	Parameter Description
<input checked="" type="checkbox"/>				
▶	EaglePass	AMBTEMP-1022	AMBTEMP-1022	Ambient Temperature DegC
	EaglePass	PMRELHUM	PMRELHUM	PM Sampler Relative Humidity
	Greenway	AT_BAM25	AT_BAM25	Ambient Temperature DegC from BAM1022-25
	Greenway	BARPRESS	BARPRESS	Barometric Pressure
	Greenway	BP_BAM25	AMB BP_BAM 1022	Ambient Barometric Pressure from BAM1022-25

Cancel OK

Under the Associate With Object tab there are four options that can be tracked differently and the software looks at them differently.

- ◆ A logger can be associated with a logger entity by selecting which logger in the system it will be associated with.
- ◆ Cal Standard would apply to a device like an ozone standard, flow calibration device, or other device for which you wish to track certification dates and histories, but is not part of the Protocol Gas Verification Program (PGVP).
- ◆ A Calibration Bottle/Tank is for cylinders you wish to track as part of PGVP.
- ◆ Unspecified is meant for everything else in the system. It is associated with a site so as something moves from site to site it can be tracked, but is not associated with any particular logger, monitored instrument, or parameter, etc.

Note that if an error is made (e.g., a “cal standard” needs to be changed to a “bottle/cylinder”), the ribbon provides a “Change Asset Type” capability.

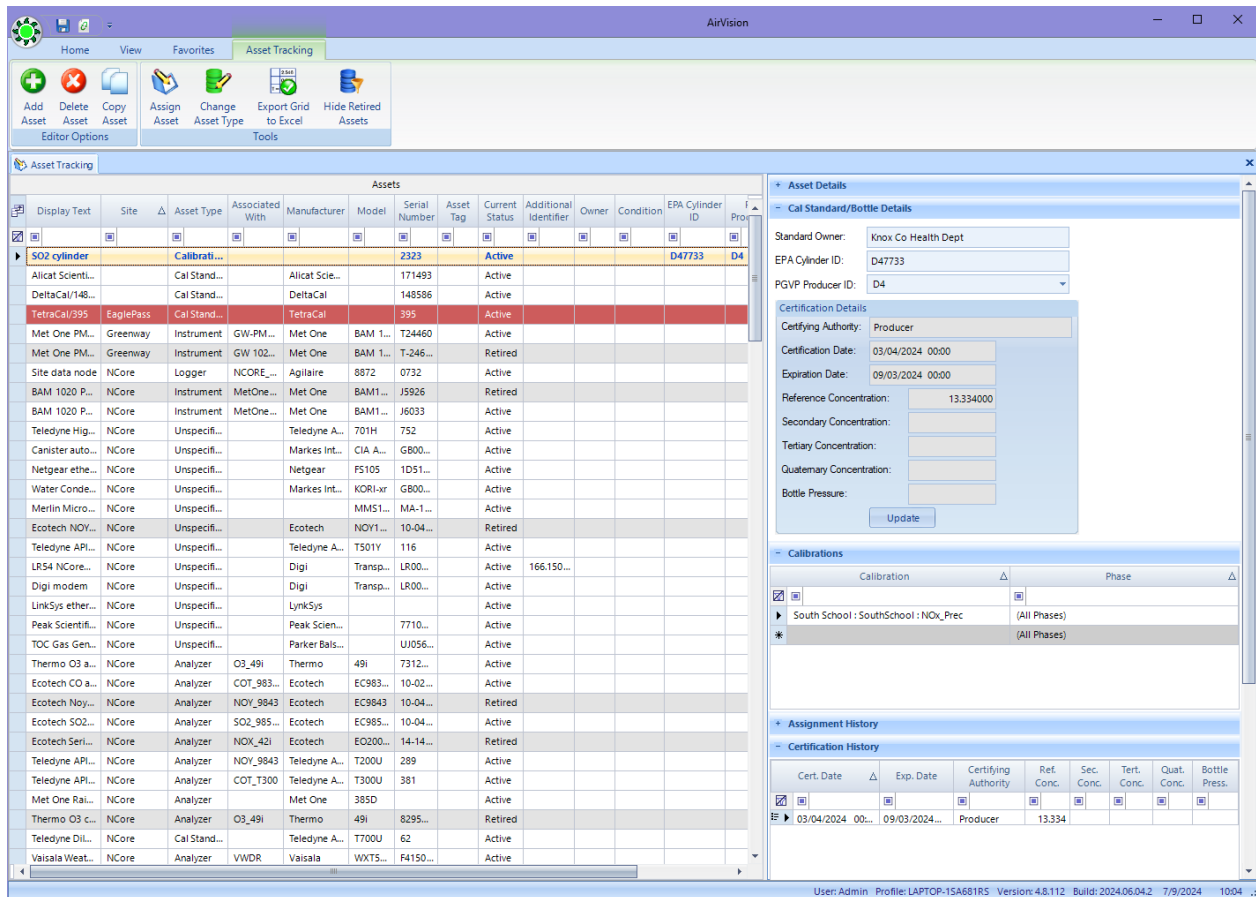
- ◆ An instrument can be associated with a directly polled instrument- not the same as a gas analyzer connected to a logger, but instead a directly polled BAM, Partisol, or API602, etc.
- ◆ A gas analyzer (connected to a logger) can be associated with a monitored parameter in the Site Parameter list.
- ◆ Cal Standard would apply to a device like an ozone standard, flow calibration device, or other device for which you wish to track certification dates and histories, but is not part of the Protocol Gas Verification Program (PGVP).
- ◆ A Calibration Bottle/Tank is for cylinders you wish to track as part of PGVP.
- ◆ Unspecified is meant for everything else in the system. It is associated with a site so as something moves from site to site it can be tracked, but is not associated with any particular logger, monitored instrument, or parameter, etc.

Note that if an error is made (e.g., a “cal standard” needs to be changed to a “bottle/cylinder”), the ribbon provides a “Change Asset Type” capability.

Once the asset has been entered, the following fields can be entered (some visible on the the Additional Details tab):

- ◆ Manufacturer and Model Number: Any manufacturer and model number that has been previously entered will be automatically remembered so it will continue to show in the drop down list.
- ◆ The Serial Number is usually what is stamped on the instrument.
- ◆ The Asset Tag may be something specific to the organization or agency.
- ◆ Additional Identifier is an optional additional identifier used by the agency (like a secondary asset tag).
- ◆ Current Status has options of In Repair Active, Needs Repair, Retired, Unspecified, Spare, Needs annual certification, Certification, or Send for Certification.
- ◆ Condition provides a pick list of New, Good, Average, Poor, Broken, or Trashed.
- ◆ Method Code is used for “Analyzer” types to apply the Method Code to the parameter automatically when an asset is moved to that site.
- ◆ A description can be entered into the Description field but is not required.
- ◆ Additional Details Tab (for USEPA asset reporting):
 - Owner
 - Acquisition Cost
 - Firmware/Version
 - Purchase Date
 - Retired Date
 - Planned Retirement

Additional blocks are available on the right side, depending on the asset type. They can also be collapsed using the “-“ button on the upper left of each block.



Assignment History Block: shows the history of assignments/moves of the asset.

- ◆ For assignment to the current site, the Start date and time can be changed if needed, by clicking in the date field under the Start column, and save.
- ◆ If the End date is blank the tracker assumes the equipment is still in operation. When using the “Assign Asset” button on the ribbon, the current assignment record will be closed (with the end date being current date/time, but editable). A new assignment record will be opened with the current date/time as start (but editable) and no end date/time to indicate that it is the current assignment.

Cal Standard/Bottle Details Block (For Cal Standards and Bottles/Cylinders):

- ◆ Provides latest / current details of the current certification. Click the “Update” button to add a new certification history record.

Calibrations Block (for Bottles/ Assignment History Block: shows the history of assignments/ moves of the asset.)

- ◆ Show or Edit what calibration program the cylinder is associated with, for the USEPA PGVP verification program. Cylinders can also be associated with particular phases, if necessary.

Certification History (for Cal Standards and Bottles/ Cylinders):

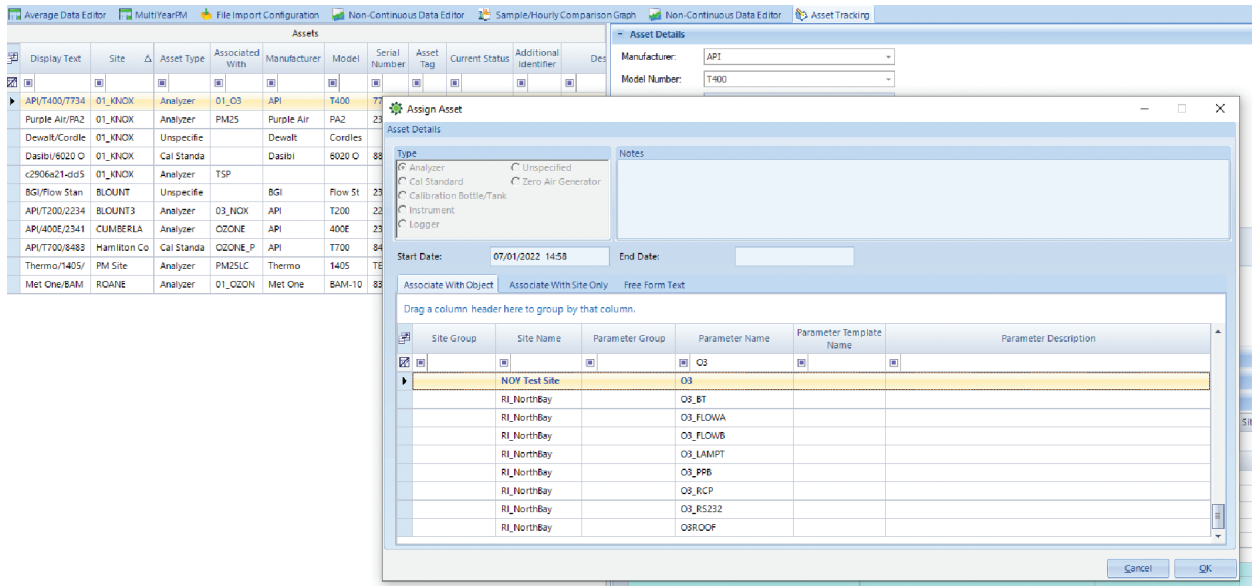
- ◆ Shows the history of certifications for the standard. Clicking on the Cert Date or Expiration Date will pop up an editing window.

If needed a new analyzer can be entered in for the same pollutant at the same site with different Asset Details information and save it. It will then show in the Assets list when the first analyzer was removed from the site and the new analyzer was started up at the same site.

Moving (Reassigning) Assets

Once created, an asset can be moved to a new site, etc, and the history of that asset’s utilization is recorded as a history, and can be reported in the Asset History Report or Parameter Asset History Report.

To move an asset in Data Editors->Asset Tracking, select the asset, click the “Assign Asset” button on the ribbon, and in the pop-up, provide its new location, and add any desired notes.



Reports

There are several available asset reports:

- ◆ **Asset Current Status:** Provides the list of assets, broken down by site (one site per page), with their manufacturer, serial number, and starting date/time.

Asset Current Status Report

Site: 01_KNOX

<u>Asset Type</u>	<u>Parameter or Site</u>	<u>Mfr/Model</u>	<u>Serial #</u>	<u>Starting</u>	<u>Ending</u>
Analyzer	01_03	API 400E	2341	02-Jan-2018	
Unspecified		BGI Flow Standard	23423	22-Jan-2018	

- ◆ **Asset History Report,** which tells you where the equipment has been over a period of time.

Asset History Report

Mfr/Model: API 400E
S/N: 2341
Purchased: 11/12/2013
Status: Active

<u>History:</u>	<u>Site</u>	<u>Starting</u>	<u>Ending</u>
	01_KNOX	10/08/2013	11/12/2013
	Hamilton County	11/12/2013	12/12/2013
	01_KNOX	01/02/2018	

- ◆ **Parameter Asset History,** which shows for a monitored parameter what different instruments were used for that time.

Site: 01_KNOX
Parameter: 01_03

<u>History:</u>	<u>Manufacturer</u>	<u>Model</u>	<u>Serial #</u>	<u>Starting</u>	<u>Ending</u>
	API	T400	77342	10/01/2013	10/08/2013
	API	T400	77342	10/08/2013	11/12/2013
	API	400E	2341	10/08/2013	11/12/2013
	Met One	BAM-1020 PM10	837593	11/19/2015	08/12/2016
	API	400E	2341	01/02/2018	

- ◆ **Asset Certification History:** shows history of certification of calibrators, bottles, or other calibration standards.

Current Date: 7/8/2024 4:52 PM

Asset Certification Report

EaglePass

Manufacturer	Model	Serial Number	Tag	Additional Identifier	Cert. Date	Expiration Date	Reference Conc.
TetraCal		395			24-Apr-2021	24-Apr-2022	
TetraCal		395			24-Apr-2023	24-Apr-2024	

- ◆ **Expiring Assets Report:** shows assets whose last certification has an expiration date within the last 30 days or in the future.

Current Date: 7/8/2024 4:55 PM

Expiring Asset Report

Site	Manufacturer	Model	Serial Number	Tag	Certification	Expiration	Status	Retired
EaglePass	TetraCal		395			14-Jun-2024	Active	

- ◆ **EPA Asset Report:** Provides CSV output for EPA electronic reporting of assets.

```

/Applicability Year", "Asset Owner", "State", "Asset Type", "Asset Status", "Asset Manufacturer", "Asset Model", "Asset Serial ID", "Asset Acquisition Date", "Asset Purchase Price", "Current Condition", "Asset
Agency ID", "Agency Comment"
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Instrument", "not deployed", "Met One", "BAM1020 ", "J6926", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Instrument", "In Use", "Met One", "BAM1020 R282", "J6039", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Unspecified", "In Use", "Markes International", "CIA Advantage - HL", "GB00H10289", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "In Use", "Ecotech", "EC9830T", "10-0288", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "not deployed", "Ecotech", "EC9849", "10-0491", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "not deployed", "Ecotech", "E020040", "14-1457", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "In Use", "Ecotech", "EC9850T", "10-0498", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Instrument", "not deployed", "Met One", "BAM 1023", "T-24611", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Instrument", "In Use", "Met One", "BAM 1022", "T24460", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "In Use", "Met One", "985D", "", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Unspecified", "In Use", "Netgear", "FS105", "1D518B3703B52", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Logger", "In Use", "Agilaire ", "8072", "0732", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "In Use", "Teledyne API", "T300U", "381", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "In Use", "Teledyne API", "T200U", "289", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "In Use", "Teledyne API", "T500U", "264", "10/1/2019 4:46:58 PM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Cal Standard", "In Use", "Teledyne API", "T700U", "62", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Cal Standard", "In Use", "TetraCal", "", "395", "1/1/2018 12:23:46 PM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "In Use", "Thermo", "491", "731225441", "1/1/2019 12:00:00 AM", "0", "", "", ""
"2024", "0581 - Knox County Department Of Air Pollution Control", "TN", "Analyzer", "not deployed", "Thermo", "491", "829532598", "1/1/2019 12:00:00 AM", "0", "", "", ""
    
```

Work Task Tracking

The Work Item Editor is designed for work items to be entered (e.g., analyzer repairs, routine maintenance, etc), and the Work Item is designed for the work item to be reviewed and marked complete. Each of these menus are attached to two different security levels so that higher level security users can enter in items in the Work Item Editor and lower level security users can review and close them out in the Work Items.

Work Item Editor (for Supervisors)

Select the Work Item Editor menu under Data Editors. To add an item click the Add Work Item button on the Ribbon at the top. Fill in the information under the Task Definition tab on the right side of the screen.

The screenshot shows the 'Work Item Editor' window. On the left is a table with columns: Task Name, Site, Enabled, Due Date, and Repeat Interval. The table contains three rows: a header row, a row for 'Run precision check at...' with Site 'SITEONE', Due Date '02/02/2016 15:19', and Repeat Interval '1W', and a row for 'test' with Site 'SITEONE' and Due Date '07/31/2015 14:46'. On the right is a configuration panel with tabs for 'Task Definition', 'Repeat', and 'Activity'. The 'Task Definition' tab is active, showing fields for Task Name ('Run precision check at site three'), Task Description ('Check is to be ran once a week'), Due Date ('02/02/2016 15:19'), Assigned To ('Technician1'), Site ('SITEONE'), Asset ('Agilaire/8832/12345/test'), Priority ('Medium'), and Category ('RoutineCheck'). There are also checkboxes for 'Enabled' and 'Notifications Enabled', both of which are checked.

If the work item repeats on a regular basis, how often or certain days of the weeks can be set under the Repeat tab on the right side of the screen.

Because a work item is assigned to a person; and that person needs to have an email setup in the User Editor menu under Security; notifications can be sent manually by selecting the Send Notifications button on the Ribbon at the top, which are sent by email to the person assigned to the work item.

Repeating Work Items

By default, a task is a 'one time' event, but by selecting the "Repeat" tab, the user can set a task to repeat. The user can define:

- Repeat interval (e.g., XX days/months/weeks/years)
- An end date for the repeating event
- Whether certain days of the weeks are disallowed (e.g., not weekend days).
If a repeat event falls on a disallowed day, it will schedule to the next available day.
- Whether the repeat interval is added to the actual completion time or the originally scheduled due date.

Notifications can also be sent automatically by setting up a Work Item Notification Task in the Task Scheduler. Assigning what time to run and how often, what assignments to notify the user, and the time frame the work items range (number of days to look back/ahead for sending notifications).

Task Details

General Advanced

Basic Task Information

Task Name: Task Enabled

Task Description:

Work Item Notification Details

Notify New Assignments

Notify Upcoming Assignments

Notify Overdue Assignments

Alternate Lookback Period:

Alternate Lookahead Period:

Work Items (Viewer for Site Staff)

The “Work Items” menu item has a separate security level, and can be enabled for a User Group associated with field staff or whatever staff would be using the work items. Once selected, the viewer will open showing all outstanding tasks, filtered by the user’s logged in account name.

Work Items

Task Name	Site Name	Assigned To	Due Date
<input checked="" type="checkbox"/> Run precision check	SITEONE	Technician1	02/05/2016 14:18

Work Item Definition

Task Name:

Task Description:

Assigned To:

Site:

Asset:

Priority:

Category:

Status

Due Date:

Overdue

If needed, the user can clear/alter their “Assigned To” filter to see tasks assigned to others, but they cannot reassign the task from here. Selecting each task will show details.

Once a task is complete, the user can mark it complete using the selection on the top ribbon. The current date/time is logged, and a Logbook Entry can be made (see next section). If the task is a repeating task, the next due time will be set based on the next interval date. Note that if the task is overdue, it means the task interval may be less than the normal interval.

Example:

- ◆ Task is weekly, scheduled for Thursday, January 1st.
- ◆ Task is completed on Friday, January 2nd.
- ◆ Task reschedules to next ‘weekly’ due date from January 1st to Thursday, January 8th.

NOTE (January 2018): An option is being implemented to add a checkbox for the Work Item repeat setup to allow the reschedule to take place from the actual time of last completion.

Using the Asset Tracking Tool to Create an Enhanced Logbook

Introduction

In 2015, USEPA provided additional guidelines for site logbooks, promoting electronic logbooks over paper logbooks and including the need for electronic logbooks to be:

- ◆ Indelible (cannot be edited or removed)
- ◆ Secure (backed up and retrievable in the case of file loss)
- ◆ Traceable (clearly and accurately identify who made the entries)

All of these functions had already been incorporated in the Site Logbook function in AirVision / AVTrend, but we took the opportunity to re-promote the use of the Site Logbook and to add additional capabilities through our Asset Tracking / Work Item module. This document covers the traditional use of the Standard Site Logbook, as well as the expanded capabilities with the Asset Tracking / Work Item module.

Typical Architecture

Typically, users of the Site Logbook have a site PC running AVTrend or a Model 8872 Site Node Logger at the site which is used as the initial logbook entry point. It's also possible to simply use a Client connection to the AirVision server to make entries as well, but we will cover the former, more common use case.

In this case, the Logbook entries are made on the site PC / 8872:

The screenshot shows the 'Logbook Entry Editor' window. It is divided into several sections:

- Selection:** Contains 'Date Range' with 'Start Date' (01/04/2013 00:00) and 'End Date' (01/04/2013 23:59).
- Site Selection:** A table with columns 'Site Name' and 'Site Description'. It lists 'SITEONE', 'SITETHREE', and 'SITETWO'. 'SITEONE' is selected.
- Logbook Data:** A table with columns 'Site', 'Category', 'User Name', 'Entry Time', 'Event Time', and 'Entry'. It shows two entries for 'SITEONE': one for 'Test' and one for 'RoutineCheck', both by 'AirVision' on '01/04/2013 11:25'.
- Logbook Entry Details:** Fields for 'Log Entry Time' (01/04/2013 11:25), 'Event Time' (01/04/2013 11:25), 'User' (AirVision), 'Site' (SITEONE), and 'Category' (Test).
- Entry Text:** A field for entering the log entry text.

The Logbook entry tracks both the time the entry was made, as well as allowing the user to enter an ‘event time’ different from the time the entry was made. A Category selection helps characterize the entry for later reporting, and the User name is logged.

To meet EPA goals, it is necessary to ensure the Site PC has individual user accounts instead of a common login. The list of usernames can be synchronized with the server using the Sync system, or the administrator can simply ensure the usernames match between the site PCs and the server.

Once the entry is made, it cannot be deleted or edited. A system UtilitySetting can allow ‘addendums’ to logbook entries (or not) using the “Addendum” button on the ribbon. The default AirVision system behavior is ‘no addendums’ (e.g., only new entries) - contact support@agilaire.com to enable the addendum function.

(Note that if you don't have a Site PC or 8872, you can use the 8816/8832/8864 Central Message capabilities to create basic logbook entries, but you will not capture the username, categories, or event time).

Transferring Entries

Logbook entries can be moved from the Site PC / 8872 to the central server either through the Sync function, or through regular polling.

Transfer via Polling an 8872

To poll the records (more common case), you must set the Logger Properties on the server to “Send Central Messages to Logbook” via checkbox in the upper right:

The screenshot shows the configuration window for a logger named 'SITEONE'. The window is divided into two main sections: 'Source Information' and 'Logger Details'. In the 'Logger Details' section, the 'Send Central Messages to Logbook' checkbox is checked, and a red arrow points to it. Other settings include 'Logger Identifier' set to 'RD', 'Logger Type' set to 'Model 8832', and 'Debounce Digital Inputs' set to 'Off'. The 'Source Information' section shows 'Site: SITEONE', 'Source Name: SITEONE', 'Enabled: [checked]', 'Description: [empty]', 'Retry Attempts: 3', and 'Retry Delay: [empty]'. The window title is 'Logger:SITEONE' and the tabs include 'Source', 'Communication', 'IO Labels', 'Math Constants', and 'Analog Outputs'.

Then, simply add to your existing polling task a sub-task to poll for “JL-Poll Log Book Entries”:

Basic Task Information

Task Name: Task Enabled

Task Description:

Logger Poll Options

Logger: Logger Command:

AirVision will poll the 8872 for those logbook entries using the “JL” poll type, and get the user name, dates, category, and use that to create Logbook entries on the server.

Sync Contract Editor

Selected Sync Contract

Drag a column header here to group by that column.

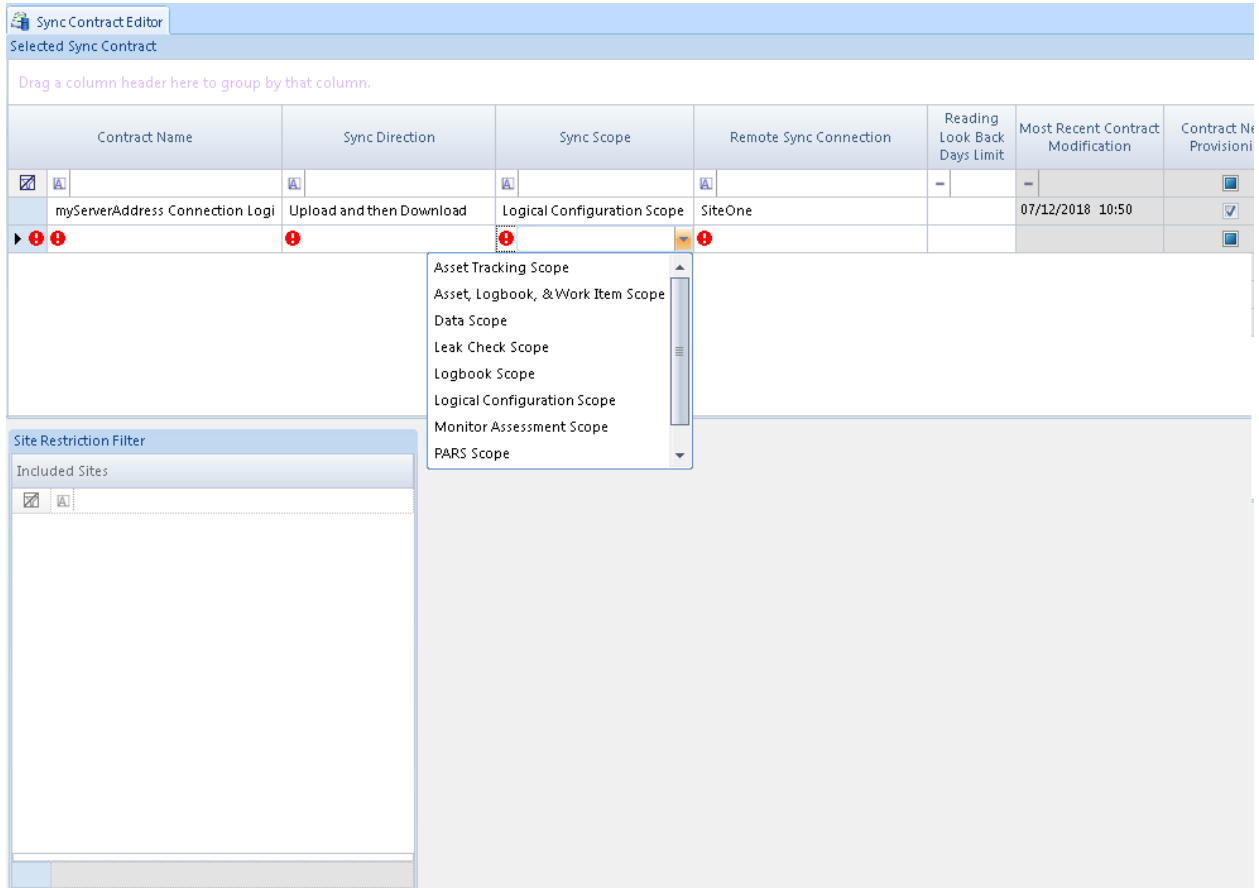
Contract Name	Sync Direction	Sync Scope	Remote Sync Connection	Reading Look Back Days Limit	Most Recent Contract Modification	Contract Ne Provisioni
<input checked="" type="checkbox"/> <input type="text" value="myServerAddress Connection Logi"/>	<input type="text" value="Upload and then Download"/>	<input type="text" value="Logical Configuration Scope"/>	<input type="text" value="SiteOne"/>	-	-	07/12/2018 10:50
<div style="border: 1px solid #add8e6; background-color: #e6f2ff; padding: 2px; width: fit-content;"> <p>Site Restriction Filter</p> <p>Included Sites</p> <div style="border: 1px solid #add8e6; height: 100px; width: 100%;"></div> </div>						

- Asset Tracking Scope
- Asset, Logbook, & Work Item Scope
- Data Scope
- Leak Check Scope
- Logbook Scope
- Logical Configuration Scope
- Monitor Assessment Scope
- PARS Scope

The sync can then be scheduled in the Task Scheduler as a Sync task to run every night, every X hours, etc.

Transfer via Sync

To transfer via Sync, create a contract using the “Logbook Scope” and the “Download Only” direction, using either the Sync Contract Editor or the Sync Wizard:

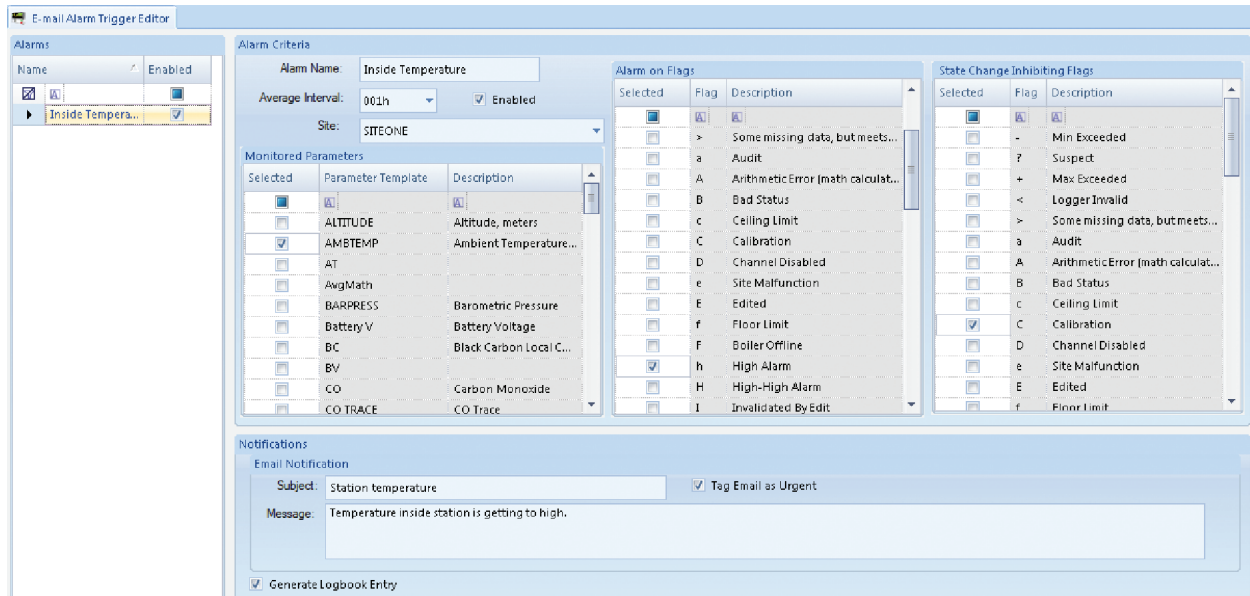


The sync can then be scheduled in the Task Scheduler as a Sync task to run every night, every X hours, etc.

Generally, the polling method is preferred-sync need only be used if Logbook Entries are also being created on the AirVision server and need to be visible on the 8872.

Other Ways to Automatically Create Logbook Entries

If you are using E-mail alarms, you now have the option via a checkbox selection to automatically create logbook entries when an alarm condition is detected:



Logbook entries are also automatically created (or can be, selectable in some cases) by:

- ◆ Completion as a Monitor Assessment Entry
- ◆ Moving an Asset in Asset Tracking
- ◆ Completion of a Work Item

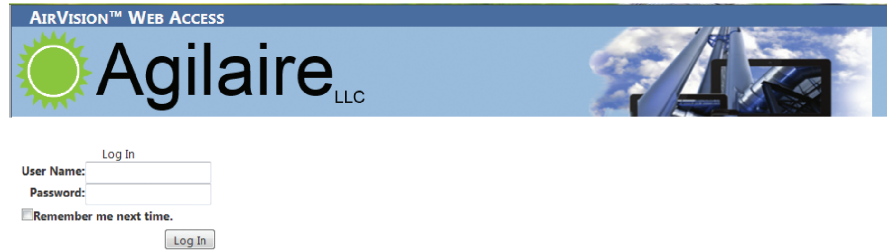
Backing Up

If you are backing up your production AirVision database, then you are backing up your Logbook. It's as simple as that. All Logbook entries are part of the standard AirVision database and are never purged.

Browser Reporting Portal (AgileWeb)

The **Browser Reporting Portal** module allows web browsers to be used as an interface into AirVision to generate, view, and download reports without requiring the installation of the AirVision Client. This module is useful for users that only need reporting access to AirVision. It requires IIS Server (Web Services) to be installed on the machine which will be hosting the web application. That server, if not the AirVision server, will also need to be able to reach and log in to the AVData SQL database.

Users log into the portal using any of the user accounts previously set up in AirVision by the administrator.



Once logged in, the user can navigate the menu of reports, as well as a help menu. Visible reports can be limited by the AirVision security/group permissions for that user.



Once a report is selected, the familiar report criteria panel appears, also with the search fields for filtering parameter names, site names, etc.

AIRVISION™ WEB ACCESS Welcome sword! | [Log Out](#)

Agilaire_{LLC}
Environmental Data Management Solutions

Home > Reports > Monthly Report

Reports ▾ Help and Support ▾

Generate Report

Monthly Report

Selection Criteria

Start Date: 6/10/2013 00:00 End Date: 6/13/2013 23:59

Average Interval: 001h

Parameter Selection

Drag a column header here to group by that column

#	Site Name	Parameter Name	Parameter Description	Parameter Template Name
<input checked="" type="checkbox"/>	11_RUTLAND_2	AMB_TEMP	AMB_TEMP, channel 12	AMSTEMP
<input checked="" type="checkbox"/>	11_RUTLAND_2	AMBDEW	AMBDEW, channel 48	
<input checked="" type="checkbox"/>	11_RUTLAND_2	BAROMETR	BAROMETR, channel 16	
<input type="checkbox"/>	11_RUTLAND_2	BARPR	BARPR, channel 47	
<input type="checkbox"/>	11_RUTLAND_2	BC	BC, channel 18	
<input type="checkbox"/>	11_RUTLAND_2	CO	CO, channel 1	CO
<input type="checkbox"/>	11_RUTLAND_2	CO8HRA	CO8HRA, channel 30	
<input type="checkbox"/>	11_RUTLAND_2	DRYDEW	DRYDEW, channel 49	
<input type="checkbox"/>	11_RUTLAND_2	FILLOAD	FILLOAD, channel 51	
<input type="checkbox"/>	11_RUTLAND_2	H2S	Hydogen sulfide	H2S
<input type="checkbox"/>	11_RUTLAND_2	MPH	MPH, channel 46	
<input type="checkbox"/>	11_RUTLAND_2	NMHC		NMHC
<input type="checkbox"/>	11_RUTLAND_2	NO	NO, channel 5	NO

Click **Generate Report** and the report is rendered on-screen. Click the toolbar above to save the report in the desired format (HTML, PDF, CSV, XLS, etc).

Report Output

Date Printed: 3/5/2019 12:50

Page 1 of 2

Site: SITEONE

Daily Summary
3/4/2019

Interval: 001h

PM25_CONTIN	
Hour	UG/M3
00:00	2.0
01:00	.3
02:00	-1.5
03:00	-1.8
04:00	1.2
05:00	2.2
06:00	1.5
07:00	2.2
08:00	3.5
09:00	3.0
10:00	1.0
11:00	1.0
12:00	-.1
13:00	1.3
14:00	3.0
15:00	1.5
16:00	2.0
17:00	3.0
18:00	2.0
19:00	-.1
20:00	2.0
21:00	2.0
22:00	1.0
23:00	3.7
Avg	1.4
Max	3.7
Hr. of Max	23
Min	-1.8
Count	24
Total	

PDF
XLS
XLSX
RTF
MHT
HTML
Text
CSV
Image

Appendix

AQI Web Service

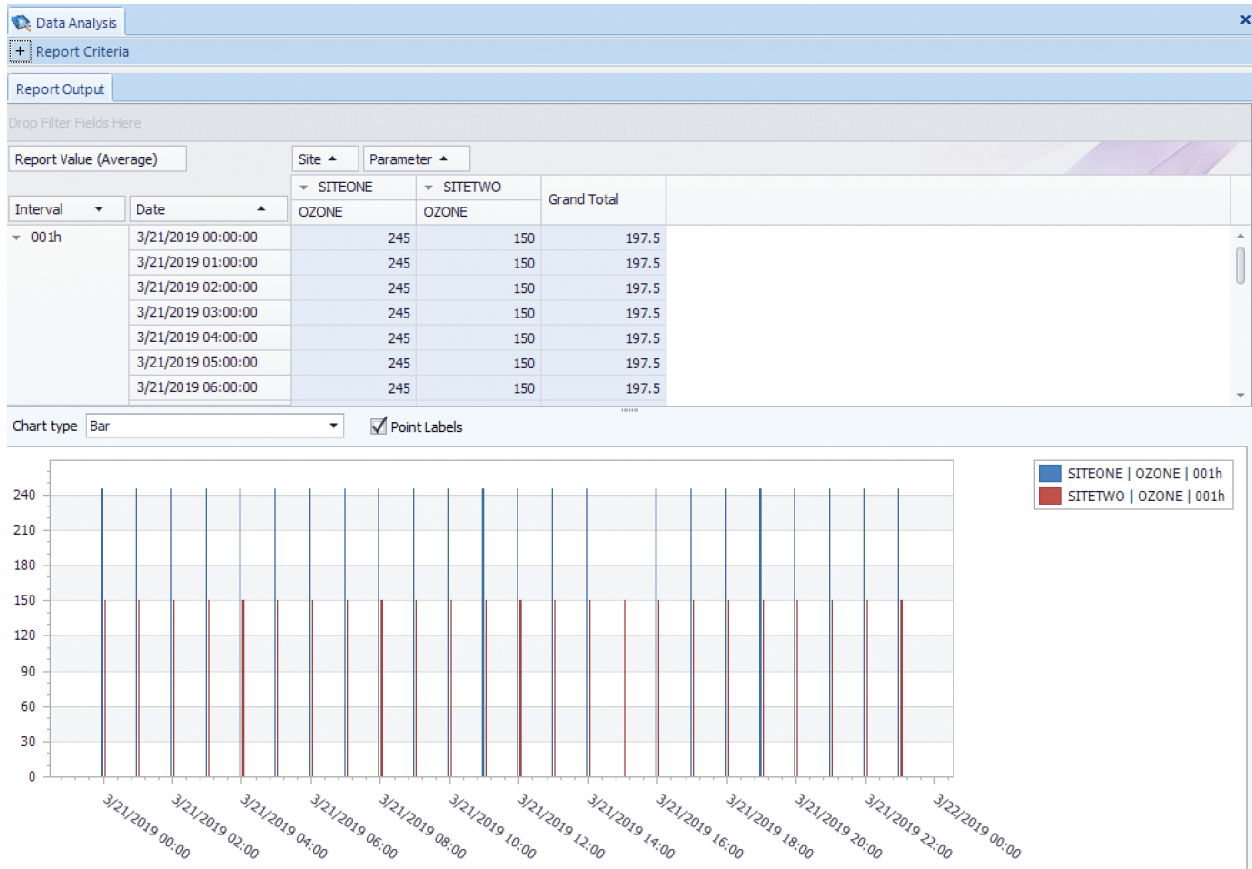
Routine access to AirVision data for a website needs to be through a more secure method than remote SQL access. We have simplified and secured the access to that data by adding a Web Service to the regular AirVision service on the server. This web AQI Service does not require the installation of Internet Information Services (IIS). Rather, it is exposed via WCF as an http web service. Normally a developer would write a custom client application to consume it. (It should be consumable from basically any modern language that supports web services.)

For more details and most up to date information, see the related application notes at:

www.agilaire.com/application notes.

Data Analysis Tool

The **Data Analysis Tool** allows the user to create ad hoc reports and graphs correlating data sets with parameters, such as hour of the day, day of the week or month, and identify composite statistics and trends. Examples below show day of the week averages and hour of the day averages for larger data sets.



Data Analysis Tool Sample Output

Using the Data Analysis Tool

The **Data Analysis Tool (Reports > Data Analysis)** is an open system used to create reports and graphical summaries designed for a specific task based on categorization of the data. It is useful for creating unusual reports, for example “average ozone value on Tuesdays”.

First select **Start** and **End** dates **Site/Parameter(s)**, and an **Average Interval**. The Data Analysis Tool is more useful for looking at a single parameter at a time (for one or more sites), for example, ozone for the month of August. After selecting the data range, click the **Generate Report** button on the ribbon at the top of the screen.

The screenshot shows the 'Data Analysis' ribbon with three main groups: 'Report Options' (Generate Report), 'Grid Options' (Print/Export Grid, Show Field List, Show Totals, Save Grid Layout, Apply Grid Layout), and 'Chart Options' (Show Chart, Print/Export Graph). Below the ribbon are tabs for 'Data Analysis', 'Report Criteria', and 'Report Output'. The main area is titled 'Drop Filter Fields Here' and contains a table with the following data:

Report Value (Average)	Site	Parameter
	▼ SITEONE	
	NO	
Interval	Date	
▼ 001h	3/13/2019 00:00:00	6.4
	3/13/2019 01:00:00	6.557
	3/13/2019 02:00:00	6.62
	3/13/2019 03:00:00	6.217
	3/13/2019 04:00:00	6.246
	3/13/2019 05:00:00	6.35
	3/13/2019 06:00:00	6.383
	3/13/2019 07:00:00	6.438
	3/13/2019 08:00:00	6.424
	3/13/2019 09:00:00	6.314
	3/13/2019 10:00:00	6.213
	3/13/2019 11:00:00	6.3
	3/13/2019 12:00:00	6.308
	3/13/2019 13:00:00	6.25
	3/13/2019 14:00:00	6.236
	3/13/2019 15:00:00	6.24
	3/13/2019 16:00:00	6.091
	3/13/2019 17:00:00	6.145
	3/13/2019 18:00:00	6.166

Data Analysis Tool from Reports menu

After you generate the report, you can minimize the **Report Criteria** pane to make more space for the **Report Output** section by clicking the minus sign. Notice the gray field **Drop Filter Fields Here**. Default filters are **Site**, **Parameter**, and **Report Value (Average)**. To add more **Filter Fields**, right-click in **Drop Filter Fields** area and select **Show Field List**. (or click **Show Column Choose** on the ribbon at the top of the screen .From the pop-up list you can either select and click the **Add to Filter Area** button, or click-drag to the **Drag Filter Fields Here area**.

The screenshot shows the 'Data Analysis' application window. The 'Report Criteria' pane is minimized. The 'Report Output' pane displays a table with the following data:

Interval	Date	NO
001h	3/13/2019 00:00:00	6.4
	3/13/2019 01:00:00	6.557
	3/13/2019 02:00:00	6.62
	3/13/2019 03:00:00	6.217
	3/13/2019 04:00:00	6.246
	3/13/2019 05:00:00	6.35
	3/13/2019 06:00:00	6.383
	3/13/2019 07:00:00	6.438
	3/13/2019 08:00:00	6.424
	3/13/2019 09:00:00	6.314
	3/13/2019 10:00:00	6.213
	3/13/2019 11:00:00	6.3
	3/13/2019 12:00:00	6.308
	3/13/2019 13:00:00	6.25
	3/13/2019 14:00:00	6.236
	3/13/2019 15:00:00	6.24
	3/13/2019 16:00:00	6.091
	3/13/2019 17:00:00	6.145
	3/13/2019 18:00:00	6.166

The 'PivotGrid Field List' pop-up is open, showing a list of available fields:

- Agency Code
- AQS County Tribal Code
- AQS County Tribal Name
- AQS Duration Code
- AQS Duration Description
- AQS Is Tribal Code
- AQS Method Code
- AQS Parameter Abbreviation
- AQS Parameter Category
- AQS Parameter Code
- AQS Parameter Description
- AQS Parameter Occurrence Code
- AQS Site Code
- AQS State Abbreviation
- AQS State Code
- AQS State Name
- AQS Unit Abbreviation
- AQS Unit Code
- AQS Unit Description
- AQS Unit Type

An 'Add To Filter Area' button is visible at the bottom of the list.

Data Analysis Tool with pop-up Filter Field List (Reports menu)

After you drag a new **Filter Field** to the **Drop Filter Fields Here** area (which is a “holding” area where fields are not active but available for immediate reactivation) the new field will not be activated until you drag it to the column area. After that the new field information will be displayed. The screen shot below shows the new Filter Field **Week Day Name**. Scroll to the bottom of the report to see Totals.

If you select **Week Day** instead of **Week Day Name**, you will get a numerically ordered display. To remove a header, right-click the header and select **Hide**. To move a header back to the inactive area, click and drag it.

The screenshot shows the 'Data Analysis' tool interface. At the top, there are tabs for 'Data Analysis', 'Report Criteria', and 'Report Output'. Below these is a 'Drop Filter Fields Here' area containing three filter fields: 'Site', 'Parameter', and 'Week Day Name'. The main report area displays a table with the following structure:

Report Value (Average)	Site	Parameter	Week Day Name					
	SITEONE							
	NO							
Interval	Date	Sunday	Thursday	Tuesday	Wednesday	NO Average	NO Max	NO Min
001h	3/13/2019 05:00:00				6.35	6.35	6.35	6.35
	3/13/2019 06:00:00				6.383	6.383	6.383	6.383
	3/13/2019 07:00:00				6.438	6.438	6.438	6.438
	3/13/2019 08:00:00				6.424	6.424	6.424	6.424
	3/13/2019 09:00:00				6.314	6.314	6.314	6.314
	3/13/2019 10:00:00				6.213	6.213	6.213	6.213
	3/13/2019 11:00:00				6.3	6.3	6.3	6.3
	3/13/2019 12:00:00				6.308	6.308	6.308	6.308
	3/13/2019 13:00:00				6.25	6.25	6.25	6.25
	3/13/2019 14:00:00				6.236	6.236	6.236	6.236
	3/13/2019 15:00:00				6.24	6.24	6.24	6.24
	3/13/2019 16:00:00				6.091	6.091	6.091	6.091
	3/13/2019 17:00:00				6.145	6.145	6.145	6.145
	3/13/2019 18:00:00				6.166	6.166	6.166	6.166
	3/13/2019 19:00:00				6.221	6.221	6.221	6.221
3/13/2019 20:00:00				6.23	6.23	6.23	6.23	
3/13/2019 21:00:00				6.344	6.344	6.344	6.344	
3/13/2019 22:00:00				6.328	6.328	6.328	6.328	
3/13/2019 23:00:00				6.356	6.356	6.356	6.356	
001h Total		6.375042	6.4165	6.3435	6.307375	6.39178	6.699	6.091

Data Analysis Tool with new Filter Field (in this example, Week Day Name) dragged to column area (Reports menu)

For example, if you select the **Filter Field**, you could drag the **Date field** up to the **Drag Filter Fields Here** area and deactivate the **Date column**.

Report Value (Average)		Site ▲	Parameter ▲	Hour ▲					
		SITEONE							
		NO							
Interval ▲	Date ▲	5	6	7	8	9	10	11	
001h	3/13/2019 05:00:00		6.35						
	3/13/2019 06:00:00			6.383					
	3/13/2019 07:00:00				6.438				
	3/13/2019 08:00:00					6.424			
	3/13/2019 09:00:00						6.314		
	3/13/2019 10:00:00							6.213	
	3/13/2019 11:00:00								6.3
	3/13/2019 12:00:00								
	3/13/2019 13:00:00								
	3/13/2019 14:00:00								
	3/13/2019 15:00:00								
	3/13/2019 16:00:00								
	3/13/2019 17:00:00								
	3/13/2019 18:00:00								
	3/13/2019 19:00:00								
	3/13/2019 20:00:00								
	3/13/2019 21:00:00								
	3/13/2019 22:00:00								
	3/13/2019 23:00:00								
001h Total		6.397571	6.387143	6.432857	6.399143	6.392	6.368857	6.402714	

Data Analysis Tool with Hour added as a new Filter Field (Reports menu)

Report Value...		Site ▲	Parameter ▲	Hour ▲					
		SITEONE							
		NO							
Interval ▲	Date	19	20	21	22	23	NO Average	NO Max	NO Min
001h		6.358857	6.329143	6.365429	6.392857	6.386714	6.39178	6.699	6.091

Data Analysis Tool with the Date column deactivated (Reports menu)

In these examples, only one **Interval** was selected (001h), so you could simplify the grid further by deactivating the **Interval** column, i.e., drag it to the **Drop Filter Fields Here** area.

The screenshot shows the 'Data Analysis' window with the 'Report Criteria' and 'Report Output' tabs. The 'Drop Filter Fields Here' area is visible. The main report grid has the following structure:

Report Value (Average)		Site ▲	Parameter ▲	Hour ▲						
		SITEONE								
		NO								
Interval ▲	Date ▲	5	6	7	8	9	10	11		
001h	3/13/2019 05:00:00	6.35								
	3/13/2019 06:00:00		6.383							
	3/13/2019 07:00:00			6.438						
	3/13/2019 08:00:00				6.424					
	3/13/2019 09:00:00					6.314				
	3/13/2019 10:00:00						6.213			
	3/13/2019 11:00:00							6.3		
	3/13/2019 12:00:00									
	3/13/2019 13:00:00									
	3/13/2019 14:00:00									
	3/13/2019 15:00:00									
	3/13/2019 16:00:00									
	3/13/2019 17:00:00									
	3/13/2019 18:00:00									
	3/13/2019 19:00:00									
	3/13/2019 20:00:00									
	3/13/2019 21:00:00									
	3/13/2019 22:00:00									
	3/13/2019 23:00:00									
001h Total		6.397571	6.387143	6.432857	6.399143	6.392	6.368857	6.402714		

Data Analysis Tool with the Date and Interval columns deactivated (Reports menu)

If you deactivate the **Interval column** (by dragging it to the **Drop Filter Fields Here area**), you can control how rows are displayed. For example, you could drag the **Hour** field into the **Drag Row Fields Here** area and the **Week Day Name** back into the column area.

The screenshot shows the Data Analysis Tool interface. At the top, there are tabs for 'Data Analysis', 'Report Criteria', and 'Report Output'. Below these, there is a 'Drop Filter Fields Here' area containing 'Report Value (Average)', 'Site', 'Parameter', and 'Week Day Name'. The main table displays data for 'SITEONE' and 'NO'. The columns are: Interval, Date, Sunday, Thursday, Tuesday, Wednesday, NO Average, NO Max, and NO Min. The data rows show hourly intervals from 05:00:00 to 23:00:00 on 3/13/2019. A '001h Total' row is at the bottom.

Interval	Date	Sunday	Thursday	Tuesday	Wednesday	NO Average	NO Max	NO Min
001h	3/13/2019 05:00:00				6.35	6.35	6.35	6.35
	3/13/2019 06:00:00				6.383	6.383	6.383	6.383
	3/13/2019 07:00:00				6.438	6.438	6.438	6.438
	3/13/2019 08:00:00				6.424	6.424	6.424	6.424
	3/13/2019 09:00:00				6.314	6.314	6.314	6.314
	3/13/2019 10:00:00				6.213	6.213	6.213	6.213
	3/13/2019 11:00:00				6.3	6.3	6.3	6.3
	3/13/2019 12:00:00				6.308	6.308	6.308	6.308
	3/13/2019 13:00:00				6.25	6.25	6.25	6.25
	3/13/2019 14:00:00				6.236	6.236	6.236	6.236
	3/13/2019 15:00:00				6.24	6.24	6.24	6.24
	3/13/2019 16:00:00				6.091	6.091	6.091	6.091
	3/13/2019 17:00:00				6.145	6.145	6.145	6.145
	3/13/2019 18:00:00				6.166	6.166	6.166	6.166
	3/13/2019 19:00:00				6.221	6.221	6.221	6.221
	3/13/2019 20:00:00				6.23	6.23	6.23	6.23
	3/13/2019 21:00:00				6.344	6.344	6.344	6.344
	3/13/2019 22:00:00				6.328	6.328	6.328	6.328
	3/13/2019 23:00:00				6.356	6.356	6.356	6.356
001h Total		6.375042	6.4165	6.3435	6.307375	6.39178	6.699	6.091

Data Analysis Tool with the Date and Interval columns deactivated, Hour dragged into Drag Row Fields area, and Week Day Name moved back into the column area (Reports menu)

Composite statistics for a month could be broken down by hour and day of the week or you could combine data for more than one site by using filters to break down data into different categories. If you move **Site** back to the **holding area**, the filter will be removed and data will be grouped together, which means you won't have to scroll to see a second site.

Similarly, multiple parameters could be grouped or merged, for example when ozone parameters go by different names.

Report Value (Average)		Parameter ▲	Week Day Name ▲				NO Average	NO Max	NO Min
Interval ▲	Date ▲	NO	Sunday	Thursday	Tuesday	Wednesday			
00:1h	3/13/2019 06:00:00					6.383	6.383	6.383	6.383 ▲
	3/13/2019 07:00:00					6.438	6.438	6.438	6.438
	3/13/2019 08:00:00					6.424	6.424	6.424	6.424
	3/13/2019 09:00:00					6.314	6.314	6.314	6.314
	3/13/2019 10:00:00					6.213	6.213	6.213	6.213
	3/13/2019 11:00:00					6.3	6.3	6.3	6.3
	3/13/2019 12:00:00					6.308	6.308	6.308	6.308
	3/13/2019 13:00:00					6.25	6.25	6.25	6.25
	3/13/2019 14:00:00					6.236	6.236	6.236	6.236
	3/13/2019 15:00:00					6.24	6.24	6.24	6.24
	3/13/2019 16:00:00					6.091	6.091	6.091	6.091
	3/13/2019 17:00:00					6.145	6.145	6.145	6.145
	3/13/2019 18:00:00					6.166	6.166	6.166	6.166
	3/13/2019 19:00:00					6.221	6.221	6.221	6.221
	3/13/2019 20:00:00					6.23	6.23	6.23	6.23
	3/13/2019 21:00:00					6.344	6.344	6.344	6.344
	3/13/2019 22:00:00					6.328	6.328	6.328	6.328
	3/13/2019 23:00:00					6.356	6.356	6.356	6.356
00:1h Total			6.375042	6.4165	6.3435	6.307375	6.39178	6.699	6.091

Data Analysis Tool with the Date and Interval columns deactivated, Hour dragged into Drag Row Fields area, Week Day Name moved back into the column area, and Site moved into “holding” area (Reports menu)

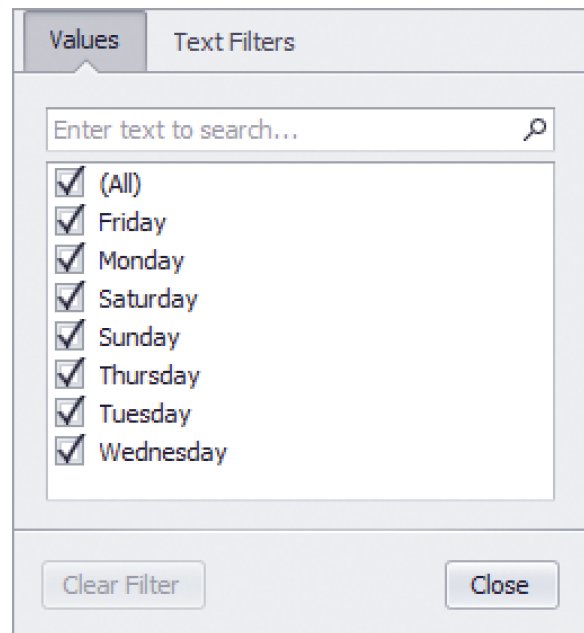
You can manipulate the way data is displayed in Data Analysis Report further as follows:

- ◆ With the cursor over a **Filter name**, click the small up or down arrow to change the sort order of that Filter.
- ◆ Hover the cursor over a **Filter name** and click the small filter icon that appears in the upper right corner. to open a pop-up list of each aspect of the Filter. In this example, you could remove weekend days from analysis; if **Hour** was selected as a filter, you could toggle settings to include only commuting hours.

If you left-click **Report Value**, you can select from the following options: **Count**, **Sum**, **Min**, **Max**, **Average** (the default), **StdDev**, **StdDevp**, **Var**, **Varp**, and **Custom**. Changing this selection can be helpful for answering questions like “What is the highest value for Monday, 9 a.m. for the entire year?”



Filter name showing arrow and filter icon



Display names for Week Day Name

Saving Grid Layouts as Favorites

The **Favorites editor** only saves the data query itself, not the changes in filters. To save an analysis layout, click **Save Grid Layout** or **Apply Grid Layout** on the ribbon at the top of the screen.

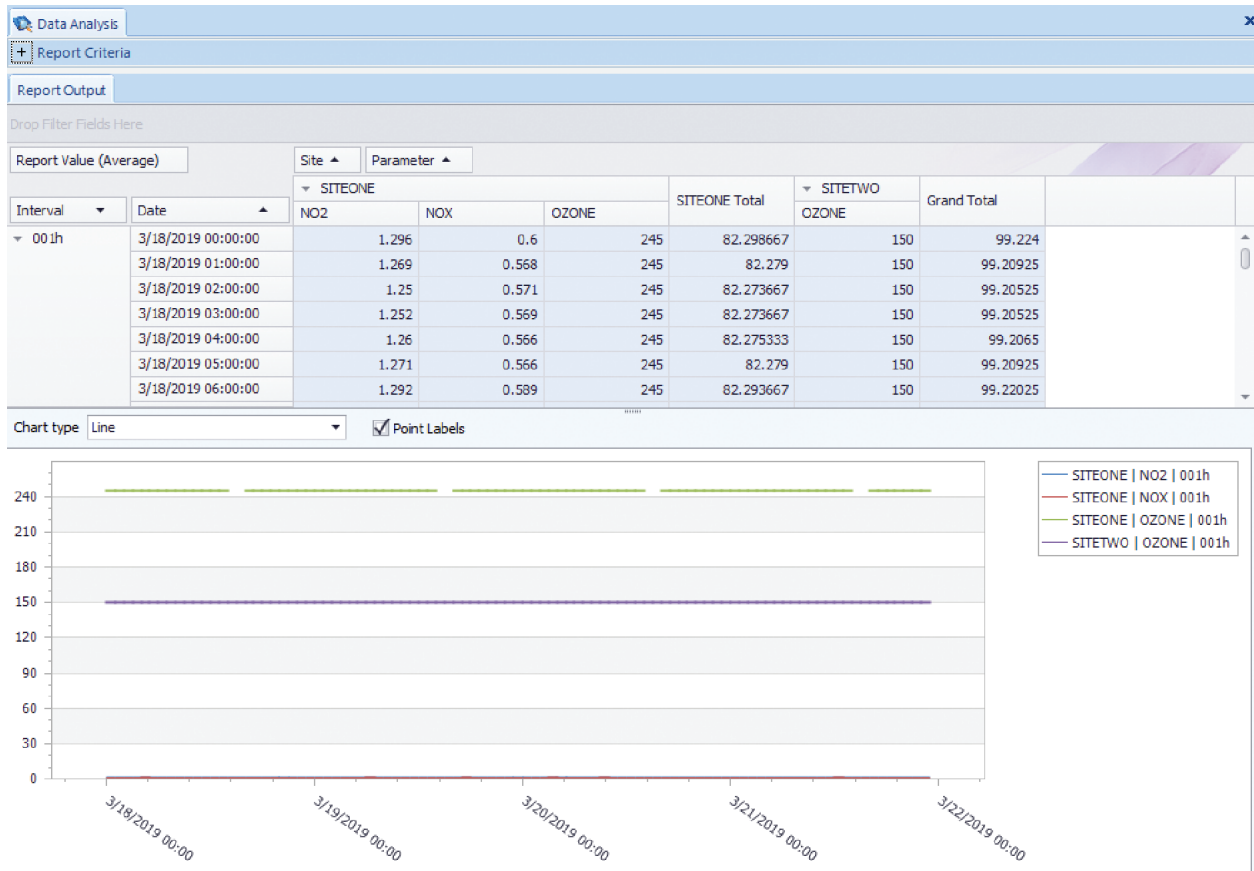


Save Grid Layout and Apply Grid Layout buttons in the ribbon at the top of the Data Analysis Report screen

Chart Display

To display the data analysis report as a chart, click the **Show Chart** button in the ribbon at the top of the page and select a row, column, or range of cells. The following figure shows a Point graph by Hour.

The **Bar graph** (shown earlier) is generally well-suited for any data selection.



Data Analysis report displaying data as a Point graph

Addendum

& Application Notes

AirVision has a constantly growing list of application notes for details on instrument polling of specific instruments REST API documentation, etc.

See www.agilaire.com/application-notes

The screenshot shows the Agilaire website's 'Application Notes' page. At the top, there is a navigation bar with the Agilaire logo, a search icon, and links for 'About', 'Solutions', 'Request Quote', 'Contact', and 'Support'. Below the navigation bar, the page title 'Application Notes' is displayed. A featured article titled 'PM 2.5 AQI Changes' is highlighted with a 'NEW' badge. The article text states: 'PM 2.5 AQI Changes Scripts (Effective Date of Change is 60 days after publication in the Federal Register, so ideally the change script will be implemented on that date. May 6, 2024 is when the New AQI goes in effect.)'. Below the article, a list of other application notes is provided, including 'Sample Data Handling Application Note', 'Options for Filer Sampler Config', 'Cal Error Calculation', 'Best Practices for Implementation of EPA QA Handbook (Gases)', 'Configuring the File Import Service (File Import Tool)', 'Generating Monthly and Annual Averages in Data Analysis', 'Using Domo for Data Visualizations', 'Using Reporting Views for Data extraction', 'Using Data API REST Services for Data Extraction', 'Converter Efficiency Reports', 'Using The Data Grade QA Levels', 'Hourly Max Using Data Analysis', 'Auto Null Coding Cal Precision Using Pseudo Bit', 'Generating Shelter Temp STDEV in Data Analysis', 'Direct Poll Troubleshooting Tree', and 'Moving AirVision and SQL Database to New PC'.



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