Application Note: Calculating 24-Hour Coefficient of Variation for Instrument Flows or Daily Standard Deviation of Shelter Temperature

EPA requirements may require continuous review of 24-hour coefficient of variation (COV) of instrument flows and 24-hour standard deviations of shelter temperatures. Updates to AirVision's Data Average Rollup functions allow for 24-hour COV calculations of flow data, on an automatic daily or manually run basis. For this example, we will do the COV calculation, but the same method can be applied for the 24-hour Standard Deviation rollup calculation.
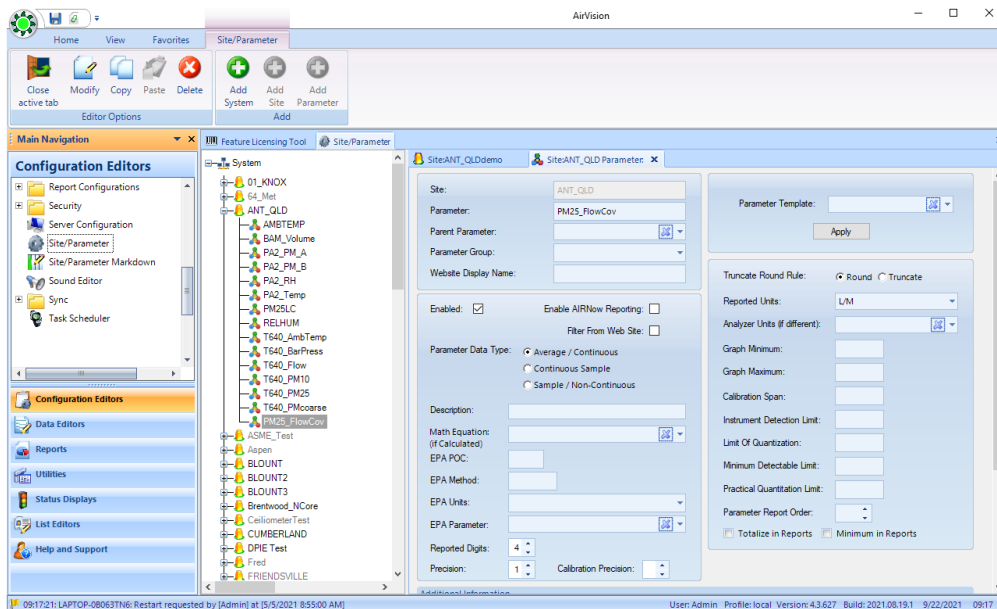
Preparation

Make sure you are minimally running AirVision version 4.3.627 or version 4.4+.

Then, review Utilities->Feature Licensing Tool, and confirm that you see "Data Average Rollup Utility" in your list. If you do not, screen shot your existing key, and email to support@agilaire.com for an updated key. There is no cost to add this feature.
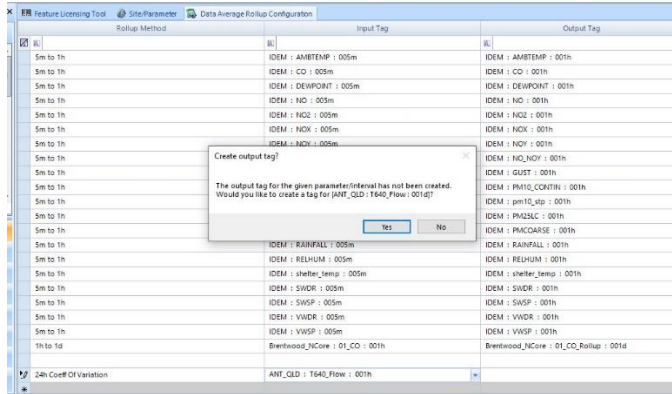
Add New Parameter

Create a new parameter in Configuration->Site Parameter to hold the 24-hour COV data (e.g., "Flow_COV").
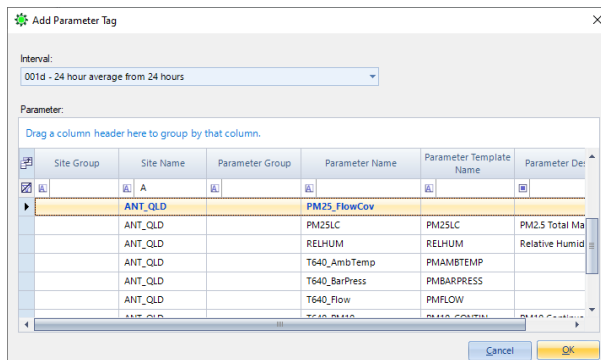
Add Rollup Program

Open Configuration->Data Average Rollup Configuration. Select "Add", and on the bottom row (grey), in the first cell, select "24h Coeff of Variation".   In the next cell, select your PM flow parameter (hourly).
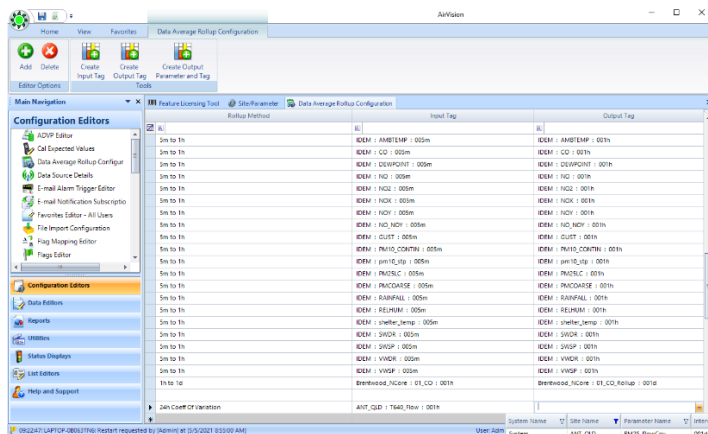

(for shelter temp, we would use shelter temp parameter and the 24-hour Standard Deviation program).

When you see the popup, select "No".   Select the third cell, then on the ribbon, select "Create Output Tag".   In the popup, select your new COV parameter, then click "OK"
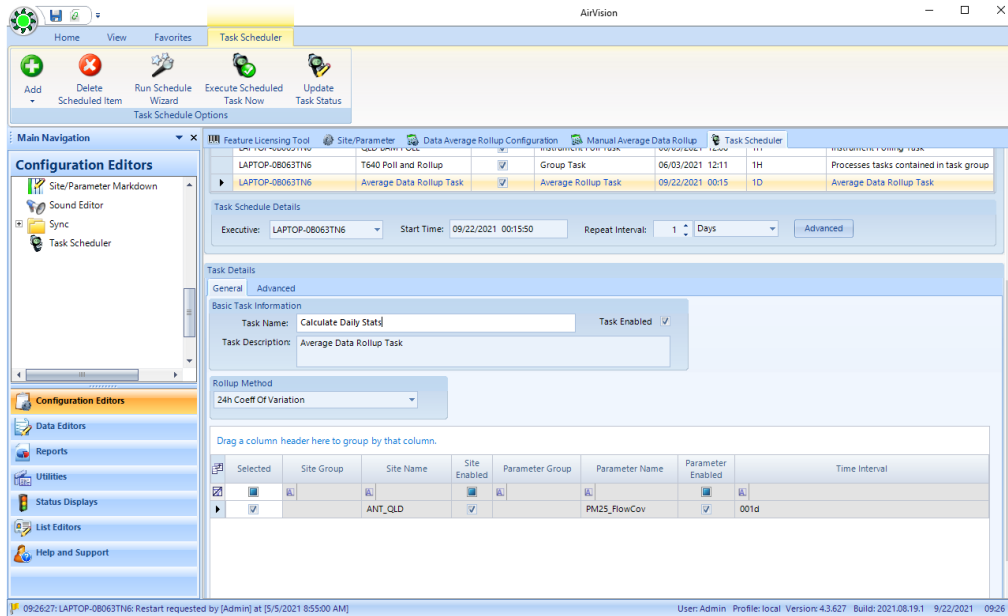

Then go to the dropdown in the third cell and select your newly created parameter, and select "Save".
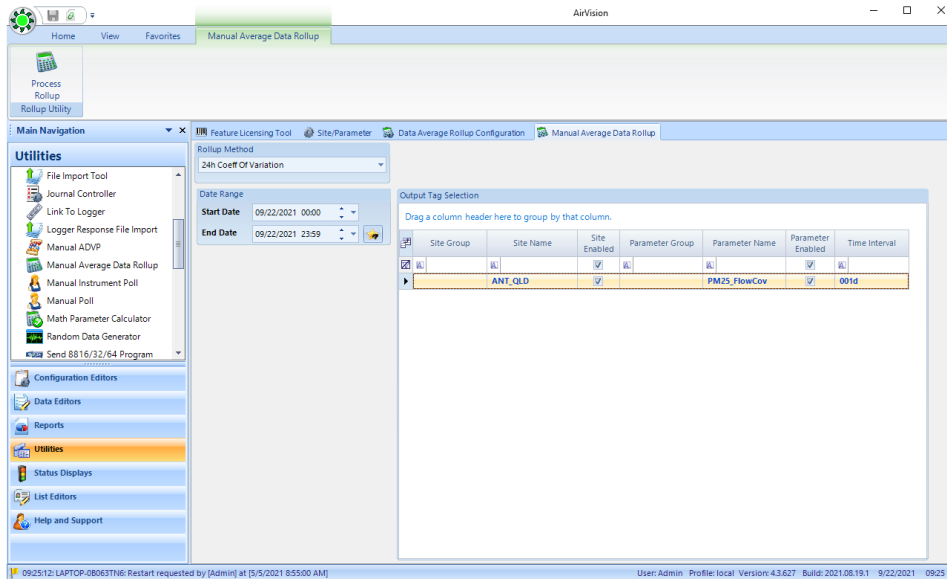
Running the Calculation

You may use the Task Scheduler to create a daily task to calculate the 24-hour COV from polled data:

Or you may run it manually from the Utilities->Manual Average Data Rollup utility:

Note: for multiple sites, a Group Task to run once per day with sub-tasks of the various 24-hour rollups are a recommended approach for the scheduled task approach.