



The “Art” of Data Validation

A holistic endeavor!

The following are questions to consider about potential variations in how air quality data is managed among monitoring organizations:

- What differences exist between monitoring organizations (MOs)?
 - Size & Complexity
 - Same or different staff collect and review data?
 - How many monitoring programs are being conducted?
 - How are sites selected and by whom?
 - Do you use other entities’ sites or do they use yours?
 - Are instruments secured from unintentional or intentional tampering?
 - Geography & Climate
 - What sample collection challenges impact your organization?
 - How do challenges change in different parts of the country?
- Are all available data and documents reviewed? When?
 - Routinely?
 - Randomly?
 - Only when a problem arises such as outlier or exceedance?
- Where are records stored?
 - Are site condition observations communicated?
 - Are problems with instruments or sampling system reported?
- Are measurement quality objectives (MQOs) applied consistently?
 - Among MOs?
 - Internally at MOs?
 - To audit and routine QC procedures?



- Did we meet our data completeness requirements?
- Did we produce valid and certifiable data?
- How do MOs use air quality data?
 - Do we consistently validate, flag, or invalidate data?
 - If MQOs are not met, how far back do you invalidate data?
 - Do some MOs mathematically adjust data?
 - Are QA techniques applied equally to data?
 - Are concentration data being used?
 - Are we comparing outcomes to our DQOs?
 - Are we discerning trends?
 - Do we know what to look for in our state or localities?
 - Are technicians informed of data outcome – valid, suspect, or invalid?
 - Do you assess air quality data for regulated sources?
 - Do sources understand how QC affects their data?
- What are the consequences if certified data is found to be in error and has to be corrected and recertified at a later date?