Ask the AQS Team – 2012 AQS Conference (Updated 16 Oct 2012)

General

In AQS, there is an "Index site" designation. Can you explain what type of site this is? Is it only for use in AirNow or is it a background site?

This is from the days of the PSI (pollutant standard index) and does not have any meaning currently.

Are there steps in place to help sync passwords between AQS and the Exchange Network?

No. We will when we can.

I have had my AQS password expire on numerous occasions. Why do we no longer get email reminders that our password is about to expire? How often do the passwords need to be changed - still every 90 days?

You should still get emails. If you don't, call the EPA Help Desk at 866-411-4372 and report that as a problem at the same time you get your password reset. Yes, 90 days.

Kindly confirm if attending the AQS Conference is the 'only' way to find out the changes to NAAQS reqs.; automation changes; etc. What is our option if we cannot send employee to the conference?

We've been trying to find a better solution for communication. Currently emails are the way we communicate AQS changes. Policy changes are generally disseminated by the monitoring list serv. We are actively working to restructure the AQS website, and are open to suggestions on how you would prefer to get information. (RSS feeds?)

When are you planning to replace Oracle forms and reports as the AQS application interface?

We will select new technologies and migrate on a schedule that we choose. The EPA generally will keep any software we need running at the computer center. It would likely not be earlier than two years from now.

Loading Data

While loading data, if we have already sent the file to AQS, can we go ahead send another one while it is still processing the first one? Or do we have to wait until we see the Post Completes for the first file?

Yes – if the necessary data for the second file is in AQS (that is, it does not rely on data from the first file being posted). There are no system limitations on the number of active jobs.

Would it be possible to lock the data in AQS either after an agency has certified the data or after the EPA Region has concurred on the data (preferably the later)? Currently, we have had issues with agencies changing data in AQS after the concurrence flag has been posted. This then removes the flag, but we are not notified.

We will put this in the considerations list for revamping the certification process.

During a caucus session, it was discussed that there is a need to be able to submit multiple files at the same.

We heard this quite a bit. We'll work with the ENSC to see if we can make this happen.

Are there plans in AQS's future for there to be a field in a monitor or site transaction to address primary monitors (currently handled manually at the site maintenance tab in AQS java app)?

Yes, the transaction/XML changes we make with P&A redesign will include this.

The Reference channel's MDL is <-100. Why so low (for PM10-2.5 FDMS)?

This is a DRAFT answer at this time; it is still being reviewed internally.

The FDMS (Filter Dynamics Measurement Systems) is a self referencing airborne particulate monitor based on TEOM technology. The TEOM monitor uses the relationship between mass and frequency to determine the mass of airborne particles collected on a filter. The FDMS measures the core and volatile fractions of the collected mass by using a self referencing technique to measure the effects of these materials as they collect on the filter. Core particulate matter has an additive effect whereas semi-volatile materials can both add mass as they arrive on the filter and can later lose mass as they volatilize. Gases and vapors (including water vapor) can also have both positive and negative effects on the mass of the filter and collected PM over time. The FDMS is able to monitor and report these changes (or filter dynamics) as they occur and provide a more accurate and 'true' measurement of airborne particulate mass concentration.

It is possible that this channel is for temperature and negative values are certainly reasonable in that case.

What are the largest negative values AQS will accept for each pollutant (e.g. what is the range of values allowed in AQS for each pollutant)? If an agency is attempting to report a negative value that is outside the range allowed in AQS, should they report 0 or should they enter some sort of null code? If they should use a null code, which one(s) would be best?

The largest negative value that AQS will accept is called the "Absolute Minimum Sample Value" and is almost always the negative of the Method Detection Limit (MDL). AQS will reject values more negative than this. This value is parameter and method specific. To find out what it is for a parameter and a given method, please see the sampling methods table on the TTN code list page. Look for the "ABSOLUTE MINIMUM VALUE" column. You can send requests for changes to aqsteam@epa.gov; we have a policy to discuss change requests with the OAQPS monitoring group.

Do not report "0" - we recognize that the practice has been to replace the negative value with a zero, and to flag the value with the qualifier code '9'. The OAQPS monitoring group has determined that this introduces statistical bias into the computations. We advise you to replace more negative values with the null data code 'DA' for aberrant data.

Will you comment on the status of qualifier code 9? (It was going to be eliminated due to producing a bias in the data but then reinstated.) What is the preferred method of qualifying negative value for PM10 (i.e. BAM data)?

QC 9 is still allowed as we have grandfathered it for agencies needing time to adapt, but you should not be using it. It will be disallowed ASAP. See the question above – absolute minimum value lists on methods spreadsheet on TTN. If below this value, use null data code 'DA.'

How can we distinguish models of wind data instruments i.e., the RM-Young Propeller anemometers (05305 and 05103) in AQS? The two models have different accuracy and starting thresholds.

In general, please send any method code questions or requests to add new ones to AQS to aqsteam@epa.gov. We usually consult our monitoring colleagues, and discuss these requests at a bimonthly meeting.

For this particular question, AQS does have a method code for the RM Young Model 05305 for wind speed and wind direction (both scalar and resultant). There is no method specific to the RM Young Model 05103. We are consulting our monitoring colleagues to close this out.

Are there plans to have some means of notifying users when file fails at ENSC? At the very least, putting a "failed" notice & zipping it back would be great.

The optional ENSC email address field will get you (or whatever email you enter) this information. The ENSC emails status information to this email. AQS emails status information to your AQS email of record.

Can multiple monitor types be uploaded in batch (MC form)?

Yes. If you have a problem view the Edit Error Details report and if it does not make sense, contact us.

Quality Assurance Data

This might be more of a monitoring QA question than AQS; if so please refer me to the person I should ask. It seems that there are no hard and fast regulations regarding the criteria for calibrations of gaseous parameters for NCore sites. We use 0-300 ppb at our Ncore site, but one of our local agencies calibrates the full range 0 - 500 ppb. We use the same transfer standard to calibrate and check the sites, will this skew the results?

There is now a requirement for what range to calibrate at. However, Issue 11, Page 6 of the QA EYE on AMTIC (http://www.epa.gov/ttn/amtic/qanews.html) does provide guidance on using lower calibration

scales than the full scale of the instrument. In fact the next version of the QA Handbook coming out in January 2013 advocates using a lower scale depending on level of routine concentrations. This was also mentioned at the May National Air Monitoring Meeting.

For the second part of the question, one should not use the same standard for calibration that is used for normal QC (1 point QC or span check).

Regarding accuracy for O3 for NCore sites... The two lowest levels (10 & 25 ppb) often do not pass the +/-15% criteria. However, the higher audit levels do pass. Because % difference blows up when the concentrations get to low levels, Our QA officer designated 7 ppb as a threshold for the two lower audit levels. We would like clarification on the validness of the audit if the two lower audit levels not pass even though we have the required minimum number of audit levels that do pass.

The OAQPS TTN AMTIC website contains a Feb 17 technical guidance document on this (http://www.epa.gov/ttn/amtic/files/ambient/pm25/datamang/20110217lowlevelstatmemo.pdf).

It states:

"Based on this assessment, EPA suggests the use of the following acceptance criteria for levels 1 and 2 audit ranges: · For O3, SO2, and NO2 - + 1.5 ppb difference or + 15 percent difference, whichever is greater. · For CO - + 0.03 ppm difference or + 15 percent difference, whichever is greater.

For audit levels 3-10, the 15 percent difference acceptance criteria, currently in guidance, appears achievable. We do not have as much information on NOeven at audit level 3, so we will need to look at this level more carefully as data become available."

The guidance does not suggest a 7 ppb threshold.

Regarding Precision for PM2.5 monitors... In the case of a failed quality control check (flow check) and the instrument was either recalibrated or fixed (a leak, pump replacement etc...) and a subsequent flow check that same day , should I enter both the failed QC check and the passing QC check or just that passing QC check?

When the results of an assessment show a measurement uncertainty larger than the acceptable Data Quality goal, that assessment should not be entered into AQS. Also, the observation data since the last successful assessment should be deleted by removing the reported values, and adding a null data code to the raw data record(s). The reported values for the observation data should be removed to the point in time of the last acceptable assessment, and flagged with appropriate Null Data Codes.

For 1-Point QC Checks, this could mean removing 2 weeks of data. For Flow Rate Verifications, this could mean removing a month of raw data observations, or even 3 months of raw data observations. One impact of removing the observation data is the effect on data completeness.

Following a failed assessment and removal of observation data, the auditor/operator will recalibrate the instrument(s), and then re-perform the assessment. Assuming this assessment now shows acceptable data quality, the assessment should be entered into AQS. The required number and

frequency of data assessments specified by 40 CFR Part 58 Appendix A can be met even if one or more assessments fail, because a follow-up assessment is performed and entered into AQS.

For the PM10-2.5, P&A / flow check data, how should data be reported?

Reporting of Semi-Annual Flow Rate Audit Data from PM 10-2.5

Due to various reporting requirements in AQS there has been some confusion on how to report PM10-2.5 flow rate data to AQS. Flow rate data can come from single instruments (dichot) as well as multiple FRMs or FEMs (including BAMs). The following provides guidance on each of these. PM10-2.5 Flow Rate Data Reported from Multiple Samplers/Monitors FRMs/FEMs- A PM2.5 (Local Condition) and a PM10 (Local Condition) instrument of the same method designation must be used for the PM10-2.5 estimate. In theory a monitoring agency could internally calculate the difference between PM10 and PM2.5 and report a PM10-2.5 measurement to AQS without reporting the individual PM10 and PM2.5 estimates. In this scenario the flow rate audits of the PM10 and PM2.5 instruments can be reported as an accuracy transaction under the PM10-2.5 parameter code (86101). Although it will be difficult to distinguish which instrument (PM10 or PM2.5) is reported in each audit level, we suggest reporting the PM10 flow audit in level 1 and PM2.5 flow audit in the level 2. If the samplers used to report PM10-2.5 are also required to report PM2.5 and PM10 the same audit can be used but it must be reported a second time in the appropriate accuracy transaction. In summary, if a site is required to monitor and report for PM10-2.5, PM2.5, and PM10 • Report the flow rate audit data for both the PM10 and PM2.5 samplers under parameter code 86101 (PM10-2.5 LC). Report as an RA transaction with PM10 in level 1 and PM2.5 in level 2 • Report the flow rate audit data for the PM2.5 under parameter code 88101 (PM2.5 LC). Report as an RA transaction • Report the flow rate audit data for the PM10 under parameter code 85101 (PM10-LC). Report as an RA transaction Appendix A also requires that flow rate verifications be performed every month. These are not required reporting to AQS, however if an agency wishes to report this data, the following guidance applies: • Report the flow rate audit data for both the PM10 and PM2.5 samplers under parameter code 86101 (PM10-2.5 LC). Report as a pair of RP transactions, using precision audit ID 1 and precision audit ID 2. • The first transaction with precision audit id = 1 will report the flow audit data from the PM10 monitor. The Precision Sample ID field should be populated with the value “PM10 flow”. • The second transaction with precision audit id = 2 will report the flow audit data from the PM2.5 monitor. The Precision Sample ID field should be populated with the value “PM2.5 flow”.

PM10-2.5 Data Reported from Single Samplers/Monitors FEM- Dichot At present there is only a dichot sampler for PM10-2.5 that can report flow on the PM coarse channel. A dichot can have 4 flow rates: total flow, PM2.5, PM coarse channel (PMc) and the bypass flow. At a minimum the PMc is to be reported. However the RA contains enough levels to report as many of the flows as desired and it is suggested that PM2.5 and total flow be reported. It is suggested that the PMc flow be placed in audit Level 1 (since it is mandatory) and then PM2.5 and total flow be placed in audit levels 2 and level 3 respectively. In summary: • Report the PMc Flow Rate Audit data for the PM10-2.5 under parameter code 86101 in level 1 (PM10-2.5 LC). Report as a RA transaction. Optionally report PM2.5 in level 2 and

total flow in level 3. For monthly flow rate verifications using the precision transaction (which is not required reporting) report the flows as follows: • Use one precision transaction for each flow being reported. Always use parameter code 86101. o Report the PMc flow rate verification data using precision id = 1. The Precision Sample ID field should also be populated with the value “PMc flow”. o Report the PM2.5 flow rate verification data using precision id = 2. The Precision Sample ID field should also be populated with the value “PM2.5 flow”. o Report the total flow rate verification data using precision id = 3. The Precision Sample ID field should also be populated with the value “Total flow”. AMP255 Data Reporting Currently, an AMP255 report for PM10-2.5 is not available. This should not be a deterrent to reporting flow rate audit data to AQS. When available, the AMP255 report will be structured to report an average percent difference for each audit level but as currently designed, values for the multiple audits within an audit level (required two per year) will be averaged for each year. Therefore, it is important to consistently report audit data for the PM10 and PM2.5 samplers in the same level each time in order to provide meaningful estimates of flow for each sampler.

Page 4 of QA Eye Issue # 9 contains a chart summarizing flow reporting conventions for PM. http://www.epa.gov/ttn/amtic/files/ambient/qa/qanews9.pdf

On the DQI report – please remove the pagination, or add an option for CSV only output.

We are aware that report outputs are needed in workfile format so that the data can be manipulated / presented using other software applications. As we proceed with the QA re-engineering efforts, we are including workfile output capability for all of the QA reports including the AMP255 Data Quality Indicator Report successor.

Several of the metadata codes are defined in the CFR and/or the AQS Data Coding manual but not all of them - are there any plans to either define those? (Specifically the monitoring objectives.)

If you need a code that is not available, please email aqsteam@epa.gov If what should be entered in AQS is not clear via the coding manual, please contact us at aqsteam@epa.gov The monitoring group is working with us to better define a crosswalk and priorities for defining and populating metadata.