

AQS Software Release Notes for September 27, 2008 Installation

Combination of Missing Data for Primary PM_{2.5} Samplers with Data from Collocated Monitors

The October, 2006 revisions to the PM_{2.5} NAAQS required the daily values for a site to be created by combining any collocated daily sample values. This is the process that had been done outside of AQS when developing design values. The following rules now define how AQS performs this combination:

- If a PM_{2.5} site that is designated as the primary monitor reported a valid daily value, then that value becomes the default site-level daily value;
- If a PM_{2.5} site that is designated as the primary monitor did not report a valid daily value, then the site-level daily value is created from the average of any corresponding valid daily values reported for that site's collocated monitors.

To implement the combining process, the following system/software modifications were performed:

1. A new database table was defined to store the designated primary monitor with a date range assigned for the time period that the specific POC was the primary. If a site has at least one PM_{2.5} monitor, there must be a primary monitor designated for the site for the complete sampling period. This table will be available in Discoverer for ad hoc retrievals.
2. A new database table was defined to store the combined site sample values. These values will be created by the software whenever changes are made to the primary monitor designation or whenever raw data for one of the monitors at the site is updated by adding new values or deleting or changing existing values. This table will also be available in Discoverer for ad hoc retrievals.
3. The primary monitor designation is created or updated with Maintain Site. No batch transaction is defined for the process because these values are dependent on monitor transactions that would be processed later in the batch process. If a new site is created with a PM_{2.5} monitor, the site will not be at *production status* until the "Primary Monitor Periods" record is created in Maintain Site. If Maintain Site is used to update the primary monitor designation, the update process will also create the revised combined daily sample values. **Figure 1** is an example of the new tab for this processing within Maintain Site.

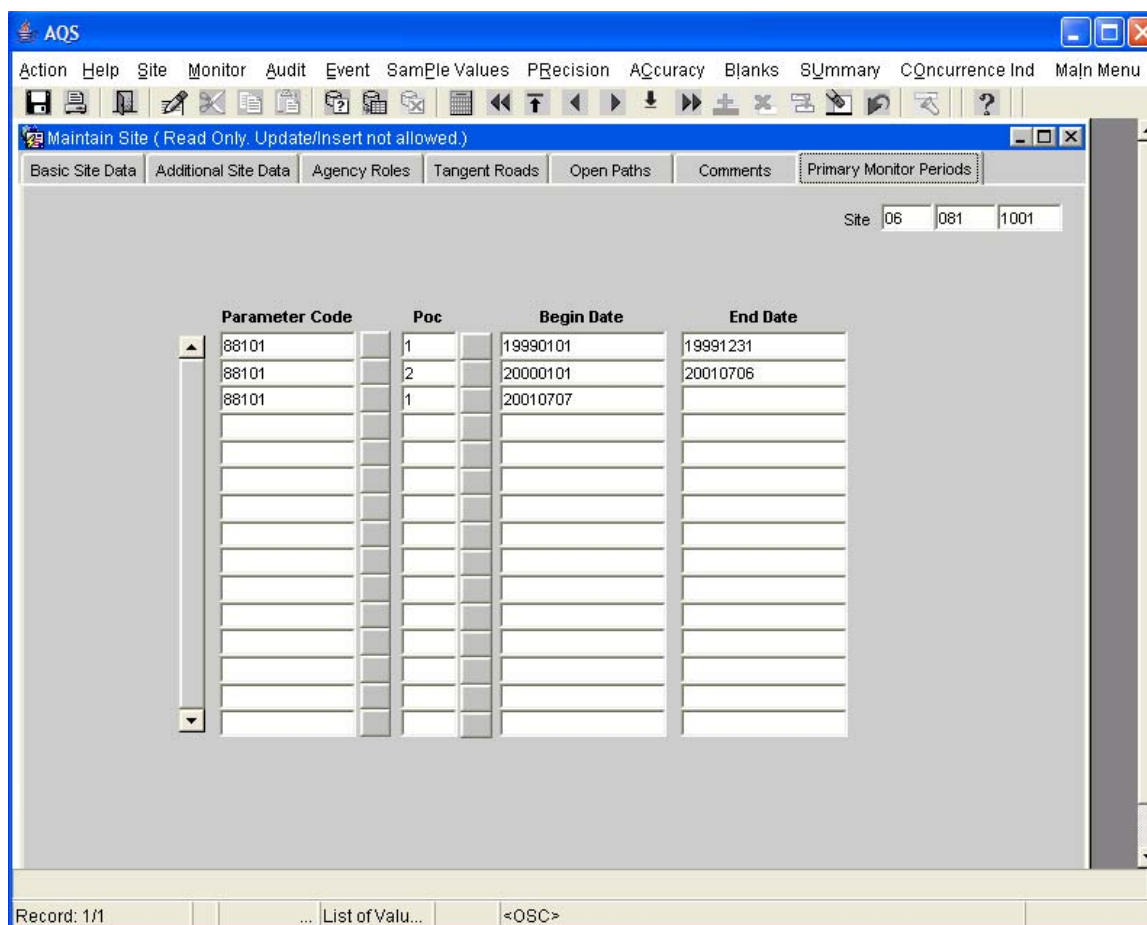


Figure 1: Primary Monitor Periods

4. A new report, AMP355, to list the combined site sample values will be made available in a later AQS update. The report will display some additional summary information that is still being developed.
5. Data initialization
 - a. Default primary monitor periods have been created for all PM_{2.5} monitoring sites based on the monitor with the “most frequent” required collection frequency for any scheduled period of operation.
 - b. Site-level daily values have been created for all PM_{2.5} monitoring days according to the default primary monitor periods and combination rules described above.
 - c. A separate email will provide Excel files to assist in validating the default primary monitor periods. Any required corrections will be made using Maintain Site. These corrections will update the combined site sample values.

Implementation of Core-Based Statistical Area (CBSA) and Combined Statistical Area (CSA)

The Office of Management and Budget (OMB) established new standards for Metropolitan and Micropolitan Statistical Areas. These definitions are being added to AQS because the older definitions (MSA and CMSA) will not be updated as populations change. The new standard created a CBSA as either Metropolitan or Micropolitan Statistical Area, and a CSA as a combination of CBSAs.

Although the CMSA is being replaced by CSA and the MSA by CBSA, the MSA and CMSA codes will remain in the database (ie, accessible through the “Objectives” tab) in case any analysis with the old codes is necessary. The ability to group by MSA (for the AMP410 report) will still be available as an option on the “Report Options” tab for backwards compatibility. Otherwise, the CMSA and MSA codes will not be supported by standard reports.

These new geographical areas are easily implemented because their boundaries follow county boundaries. The new CSA and CBSA codes will be derived from the county in which the site is located. Reference tables (in Excel format) containing the new CSA and CBSA codes are available on the AQS website.

Implementing the new codes impacted the following two processes:

I. Monitor Objective

Monitor Objective currently requires entry of urbanized area, MSA, or CMSA with each monitoring objective. The area used should be the one best represented by the monitoring objective. The MSA and CMSA codes will be replaced by CBSA and CSA codes.

These changes to the monitor objective include the following changes in load, correction, and maintenance processes:

1. The AQS bar-delimited transaction format for Monitoring Objective Information, which is identified by a Transaction Type value of “ME”, has been modified to include CBSA Represented and CSA Represented fields.
2. The AirQualitySubmission XML schema has been modified to include CBSA Represented and CSA Represented.
3. Maintain Monitor allows the display, entry, and modification of CBSA Represented and CSA Represented values on the Monitor Objective tab. **Figure 2** is an example of the new Maintain Monitor Objective Screen.

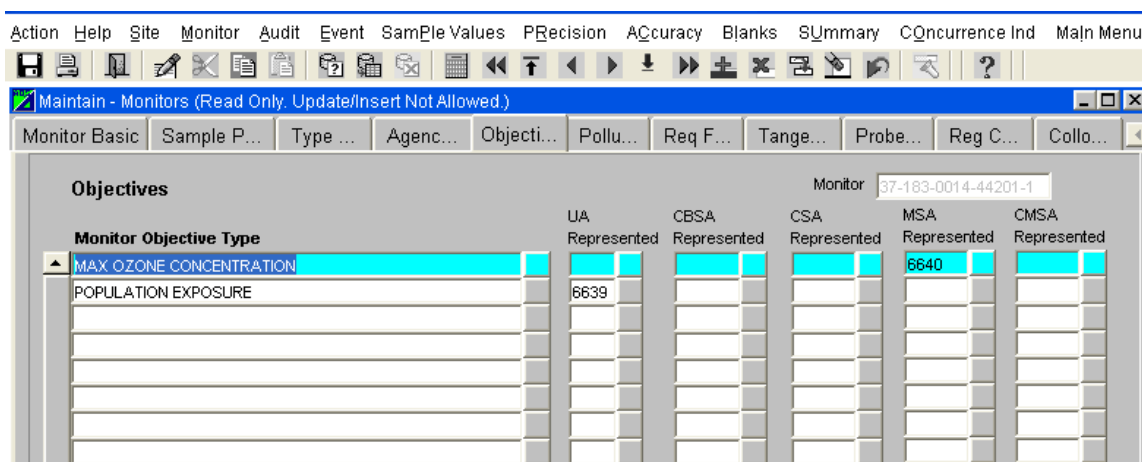


Figure 2: Maintain Monitor Objective

4. Correct Monitor Objective allows the display, entry, and modification of CBSA Represented and CSA Represented information for Monitor Objective transactions.
5. MSA Represented and CMSA Represented are maintained in the components above for backwards compatibility only: they may not be used for new transactions.

II. Standard Report Processing

The standard reports processing was modified to replace CMSA and MSA with CSA and CBSA. (Note: CBSA and CSA selects based on site location, not on what users have specified on the Monitor "Objective" tab.) Each specific part of the process is discussed below:

1. The reports interface was modified to replace the selection on the Area Selection by removing MSA and CMSA and adding CBSA and CSA. **Figure 3** is an example of the new selection screen.

Action Help Session Admin Retrieval Maintenance Critical Rev Certification Batch Correct

Standard Report Criteria Selection (National Air Data Group) AMP390

Criteria Set | Monitor Selection | Area Selection | Sort Order | Report Options | Retrieve Reports

Geographical Criteria

State Code	County Code	Site Id	City Code	AQCR Code	UAR Code	CBSA Code	CSA Code	EPA Region Code

Monitor Type:

Land Use Type:

PQAO:

Protocol Criteria

Pollutant Type	Parameter Code

Date Criteria

Start Date: YYYY MM DD

End Date: YYYY MM DD

Screening Group

Screening Group Name:

Generate Report

Figure 3: Area Selection Screen

2. The Standard Report Cover Page which is the first page for all reports that displays the selection/sort criteria used now displays the CBSA or CSA criteria specified for a report.
3. Several standard reports and/or work files were modified to replace MSA with CBSA and CMSA with CSA. The specific changes for each report include:
 - a. AMP450 – Quick Look Report – Report and Workfile formats;
 - b. AMP350 – Raw Data Reports – Workfile format;
 - c. AMP460 – Raw Data Parameters by Time – Workfile format;
 - d. AMP300 – Violation Day Count Report – Report and Workfile formats;
 - e. AMP380 – Site Description Report – Report format;
 - f. AMP390 – Monitor Description Report – Report format;
 - g. AMP503 – Extract Site-Monitor Data – Workfile & XML formats;
 - h. AMP025 – Screening Group Inventory – Workfile format.
 - i. AMP410 (AQI Report) and AMP410S (AQI Summary Report)
 - 1) The AQI reports provide the ability to group by CBSA;
 - 2) The ability to group by MSA is maintained for backward compatibility;
 - 3) For the report formats, when the group by CBSA option is designated, the applicable CBSA is displayed in the header;
 - 4) For the AMP410 workfile format, when the group by CBSA option is designated, the applicable CBSA is displayed in each workfile record.

Miscellaneous Software Fixes

1. The login form has been modified to again notify users 14 days before their password will expire. This capability previously existed but was omitted during an earlier modification.
2. The Quick Look Report has been modified for CO and SO₂. For both pollutants, multiple summary records are retrieved to create a single record in the report. For CO, 1-hr and 8-hr summary records are needed. For SO₂, 1-hr, 3-hr, and 24-hr summary records are needed. Previously, if the 1-hr data was incomplete, at least one of the other records was not computed and the report omitted the incomplete single record. Now, the report will list the incomplete single record with a blank area for the missing summary data.
3. “Maintain Monitor” has been corrected. Previously, when the Monitor Basic record (“parent” record) was updated (*i.e.*, monitors were moved to production status), this did not propagate to all the subordinate (“child”) records. Now, the changes to the Monitor Basic record will be reflected in the subordinate records, and current status (*i.e.* “P”) will be displayed in reports.
4. The Quick Look PM_{2.5} work file format has been modified so that the 98th percentile value for PM_{2.5} data are not truncated.