



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

TECHNICAL SERVICES DIVISION
QUALITY ASSURANCE PROJECT PLAN
STANDARD OPERATING PROCEDURE

DATA MGT SOP 610

PM_{COARSE}

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Kurt Malone, Supervisor
MQA Group

Date

Mark Stoelting, QA Officer
Technical Services Division

Date

Technical Services Division 939 Ellis Street San Francisco CA 94109

STANDARD OPERATING PROCEDURE
BAAQMD Technical Services Division

PM Coarse Data Management

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Purpose

The purpose of this Data Management Standard Operating Procedure (SOP) is to document data validation procedures for the PM coarse. The goal of this SOP is to define the staff persons responsible for the review, a review timeline, and the specific steps and objectives of the review process.

Background

PM coarse is required to be reported to EPA at all NCore program sites on a one-in-three day schedule. In the BAAQMD, San Jose is a designated NCore site. In the Bay Area, PM coarse is not directly measured, but is determined from subtraction of PM₁₀ and PM_{2.5} concentrations. This is an acceptable method if both the PM₁₀ and PM_{2.5} samplers are of similar design and filter media are handled similarly. At San Jose, the District has installed Low Volume PM₁₀ and PM_{2.5} samplers to measure 24-hour mass concentrations. By subtraction of the two measured, PM coarse may be determined and then submitted to the Air Quality System (AQS).

Procedure Summary

Data review begins with the Air Monitoring (AM) Section staff that installs, operates and maintains the PM₁₀ and PM_{2.5} samplers. AM is responsible for following approved PM sampling SOPs and is the final authority in determining whether the PM instruments are operating correctly and thus providing valid data. Instrument parameters (such as Start/Stop time, Run Time Duration, and Actual Flow Rate) shall be utilized by AM to assist in the data validation process. AM is responsible for noting the local sampling conditions, and inspecting the filters to determine that they meets EPA and CARB quality control standards.

A second data review is conducted by the Laboratory staff that analyzes the PM filters. The Laboratory is responsible for following approved filter handling SOPs. The Laboratory

conducts a secondary visual inspection of the filters, and reviews the field sampling parameters to determine compliance with quality control standards. The Laboratory also reviews PM data entries, and forwards the monthly PM datasets that have passed AM and Laboratory validation checks to the Meteorology and Quality Assurance Section (MQA).

A third data review is conducted by MQA. In general, MQA is responsible for all data review not specifically related to the operation of the PM samplers, but may also review instrument sampling measurements for determination of data validity.

Air Monitoring Data Review

There are no special requirements for Air Monitoring staff with respect to PM coarse because PM coarse is found from subtraction of the PM₁₀ and PM_{2.5} concentrations.

Laboratory Data Review

There are no special requirements for Laboratory staff with respect to PM coarse because PM coarse is found from subtraction of the PM₁₀ and PM_{2.5} concentrations.

MQA Data Review

A member of the Meteorology/Quality Assurance staff conducts the final review of District PM coarse data before uploading data into the EPA Air Quality System (AQS) database. The MQA reviewer shall:

- Determine PM coarse from subtraction of the PM₁₀ and PM_{2.5} concentrations.
- If either the PM₁₀ or PM_{2.5} concentration is invalid, report PM coarse with Null Code “AI” – insufficient data (cannot calculate).
- Calculate the approximate ratio of PM coarse to PM₁₀ to find any suspect outliers.
- Examine the data each month to ensure that the values appear reasonable.
- Complete review and posting of PM coarse data to AQS no later than 75 days after the end of the month.

Authors, Revisions, and Approvals

July 2012 (original)