AIRNET SPECIAL STUDIES

Purpose   This Meteorology and Air Quality Group (MAQ) procedure describes the process for setting up and operating ambient environmental air monitoring special studies.
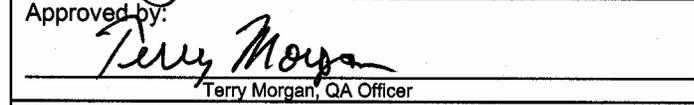
Scope   This procedure applies to the entire process of setting up and operating ambient environmental air special studies for clients and spans the entire process from handling initial requests for special monitoring through final reporting of the results to the client. It does not address stack or indoor special air monitoring.

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Hazard Control Plan   The hazard evaluation associated with this work is documented in HCP-MAQ-Office Work.

Signatures
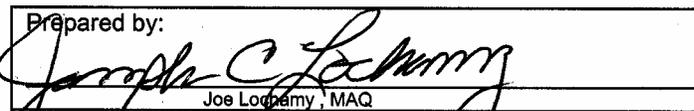
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02/11/03

General information about this procedure

Attachments   This procedure has the following attachments:

Number	Attachment Title	No. of pages
1	AIRNET Special Studies Sampling and Analysis Plan	1

History of revision   This table lists the revision history and effective dates of this procedure.

Revision	Date	Description Of Changes
0	2/28/03	New document.

Who requires training to this procedure?   The following personnel require training before implementing this procedure:

- Environmental Air Monitoring Project Leader
- AIRNET field staff involved in special monitoring
- Staff member(s) assigned to maintain the AIRNET portion of the MAQ MS® Access database
- Special monitoring data reviewers/report writers
- Any other person who uses this procedure

Training method   The training method for this procedure is "**self-study**" (reading) and is documented according to the procedure for training (MAQ-024).

Prerequisites   Depending on the specific tasks being done, those performing this procedure must have professional-level experience in applicable areas of air sampling techniques, methods, and siting; analytical methods; data management; and environmental air monitoring data interpretation/evaluation.

General information, continued

Definitions specific to this procedure

Special monitoring: Any ambient environmental air monitoring that is not a regular ongoing part of the AIRNET project as described in the Sampling and Analysis Plan for the Radiological Air Sampling Network—AIRNET (MAQ-AIRNET) or the Quality Assurance Project Plan for the Non-Radiological Air Sampling Network (MAQ-NonRadNet).

References

The following documents are referenced in this procedure:
- MAQ-QMP, "Quality Management Plan for the Meteorology and Air Quality Group"
- MAQ-AIRNET, "Sampling and Analysis Plan for the Radiological Air Sampling Network (AIRNET)"
- MAQ-NonRadNet, "Quality Assurance Project Plan for the Non-Radiological Air Sampling Network"
- MAQ-024, "Personnel Training"
- MAQ-033, "Analytical Chemistry Data Management and Review for AIRNET"
- MAQ-036, "Preparing Statements of Work for Procuring Analytical Chemistry"
- MAQ-205, "Calibration of Air Sampling Stations"
- MAQ-206, "Maintenance of Air Sampling Pumps
- MAQ-207, "Evaluation of AIRNET Sampler sites Against Siting Criteria"
- MAQ-217, "Installation of New AIRNET Stations"

Note

Actions specified within this procedure, unless preceded with "should" or "may," are to be considered mandatory guidance (i.e., "shall").

Managing requests for special ambient air monitoring

Overview

Periodically, either MAQ or an internal LANL client identifies a need for environmental air special monitoring for radiological or nonradiological constituents. The existing AIRNET program may or, more likely, may not be able to provide the special data needed. Consequently, a special monitoring project, partly or completely independent of AIRNET, may be required to meet the client's needs. This section of the procedure describes how to handle the initial request and get the special project in process. Subsequent sections of this procedure describe how to implement the special monitoring project and report the results to the client.

Important Note: Throughout this procedure, it is intended that the special project use existing or slightly modified AIRNET management systems, plans, procedures, methods, and processes to the extent practicable. Only if absolutely needed should new systems, procedures, methods, or processes be developed for special monitoring projects. It is further intended that the special monitoring project documentation, such as the sampling and analysis plan, be very brief and to the point without being unnecessarily voluminous.

Processing requests for special monitoring

The client should formally document by memo or other convenient formal documentation any request for ambient environmental air special monitoring. Alternatively, MAQ may prepare the formal request for the client's approval. If the need is identified within MAQ, an internal memo should be generated to identify the need.

The request should be forwarded to the Environmental Air Monitoring Project Leader (EAMPL) for initial determination of viability. If the project leader determines that the request is viable and that the resources to meet the need are or can be made available, the **project leader** will obtain concurrence from the MAQ group leader that the project may be pursued further. If the project is not viable, the project leader formally informs the client by memo.

If the project is viable, the **project leader** may assign a coordinator to assist with further definition of the project.

Managing requests for special ambient air monitoring, continued

Gathering information

The **coordinator** will contact the client to better define the detailed project needs. The coordinator will set up a project file and obtain *preliminary* project charge number(s) from the client for the initial project design and proposal stage.

Based on the client's input and any other applicable information the coordinator may gather, the **coordinator** will identify potential technical solutions and methods for meeting the client's needs, develop a preliminary project schedule, and estimate the budget.

Proposing a monitoring solution

After all applicable information has been gathered, the **coordinator** will prepare a **brief** proposal for the client (memo or other convenient written documentation) generally describing how the project will be done to meet the client's need. The proposal will provide a preliminary implementation and project duration schedule and a best estimate of the project budget. Final deliverables will also be identified. Any other aspects that the coordinator or client considers applicable will also be included in the proposal.

Upon formal client acceptance of the proposal and specification of final project charge numbers, the project may proceed. The next step in the project is to develop a sampling and analysis plan (SAP), which is described in the next section of this procedure.

Developing the special monitoring sampling and analysis plan

Need for a plan

Although, at this point, the special monitoring project is generally defined, a reasonably detailed, but brief, sampling and analysis plan (SAP) is needed to assure that the client's technical data needs can be met and that the project can be completed on time and within budget. Designing the SAP is equivalent to designing the project.

Structure of the plan

An SAP is much like a quality plan. MAQ has a group quality management plan (MAQ-QMP), sampling and analysis plans (SAP) for radiological and non-radiological AIRNET sampling, and other project plans already in place. To the extent practicable, the special project should be operated within the purview of the applicable parts of existing MAQ SAP/quality plans and procedures. However, the details of the special project need to be identified and documented with references to those applicable existing plans and procedures. Besides trying to use/reference applicable parts of the AIRNET and NonRadNet SAPs, use them as general guides for developing the special SAP. However, keep in mind that the special project, likely, requires only a small subset of the detail found the AIRNET SAPs. The form provided in the Appendix may be used to document the special plan. However, any SAP document format that meets the client's needs may be used.

Designing the plan

Begin the design process by describing the measurements to be made in terms of the final data desired. Determine the **data quality objectives**: What parameters are to be monitored? What measured levels and accuracy are needed for the monitored parameters? Will conservatively high values be sufficient? What are the regulatory requirements, if any? How much lost data is acceptable? This and similar information will effectively determine the type of monitoring equipment (e.g., PM10, TSP), its required reliability and maintenance level, sampling specifications (e.g., flow rates, sampling times, media), and analytical methods that will be used.

Determine generally where the samplers will be located, how many, and how long. Determine the technical and management organization for the project. Refine the schedule and budget.

Developing the special monitoring sampling and analysis plan, continued

Writing the plan

Depending on the size of the project, the SAP should be as brief and to the point as practicable. Instead of writing new or copying existing text into the SAP, reference applicable existing MAQ plans and procedures wherever possible. In rare cases, the SAP may need to contain all of the elements found in the AIRNET SAP, especially if the sampling is a regulatory requirement. However, it should contain at least the following important information and any other information the coordinator identifies as important:

- Project description
- Objectives
- Sampling system and sampling specifications
- Sample handling and custody
- Analyses
- Quality control
- Data management
- Records management
- Organization and Interfaces
- Schedule and budget

The SAP may be prepared using any convenient format. A form for documenting the SAP is provided in the attachment.

Obtaining client approval

Assuming there are no schedule or budget surprises in the SAP, it would be sufficient to provide the client with an information copy of the SAP. However, if the schedule or budget has changed, based on the more detailed analysis and information in the SAP, the coordinator will obtain formal approval of the SAP from the client. If the client requests to formally approve the SAP, regardless of the final budget and schedule, submit the SAP to the client for approval.

Note: the proposal to the client was likely based on less (well-known) information than that contained in the SAP. Therefore, it is likely that budget and/or schedule will change after the SAP is completed.

Implementing the Plan

Once the SAP is written and approved (as needed), the final budget and schedule are agreed to, and the organization is in place, the **coordinator** is ready to implement the SAP as described in the following sections.

Installing, operating, and maintaining special monitoring samplers

Sampler installation

If new sampler locations will be used, have the field staff do a sampler siting survey using MAQ-207 or a similar applicable method. Procure the necessary sampling systems and install them according to MAQ-217, if applicable. If MAQ-217 is not applicable, arrange for the field staff to have appropriate work processes (e.g., HCPs) reviewed according to MAQ-035.

Sampler operation

Provide the field staff with written operating *instructions*: media type to use, sample change frequency, sample handling/storage/transfer, maintenance requirements, and similar information. If the sampling is very similar to that done under existing procedures, those procedures may be referenced with any differences noted in writing.

Sampler maintenance

Maintain and calibrate samplers according to MAQ-206 and MAQ-205, as applicable, or provide written *instructions* to field staff.

Note on need for procedures

Unless the project is very large or is planned to operate for several years, new formal installation, operating, maintenance, and calibration *procedures* are not needed.

Analyzing special monitoring samples

Identifying analytical services

The required analyses and the laboratory where the analyses will be done should have been identified in the SAP.

Statement of work

If an existing MAQ statement of work (SOW) can be used, do so. If not, prepare a new SOW for the analytical laboratory using MAQ-036 for guidance.

Sample transport

Make arrangements for transporting samples to the analytical laboratory. As needed, arrange for sample archival or disposal after analyses are completed.

Managing special monitoring data

Electronic data transmittal

Typically, special monitoring data will be handled in a similar manner to AIRNET data. Data will be electronically transmitted to the MAQ database with a hard copy transmitted somewhat later.

Database management

In general, manage the special monitoring data according to the AIRNET database Users Guide and, as appropriate, according to MAQ-033. The database contains forms to assist in setting up special studies. If the existing database management procedures are not fully applicable, provide written *instructions* for data management. Unless the project is very large or is planned to operate for several years, new formal data management *procedures* are not needed.

Developing special monitoring reports

Deliverables
The client proposal should specify the deliverables and schedule. That information should be included in the SAP as part of the schedule.

Writing reports
Using the client-specified reporting requirements (if provided), or any convenient professional quality format, prepare a report of the analytical results and any appropriate conclusions for the client. Transmit the report to the client under a formal memo and retain a copy in the project file.

Records resulting from this procedure

Records

The following records generated as a result of this procedure are to be submitted to the records coordinator **within 4 weeks** after they are generated and all reviews are complete:

- special monitoring requests
- approved sampling and analysis plan and supporting documentation
- chain of custody documentation
- analytical data and QC documentation
- final reports

[Click here to record "self-study" training to this procedure.](#)

Meteorology and Air Quality Group
AIRNET Special Studies Sampling and Analysis Plan
This form is from RRES-MAQ-246

Client:

Project Description:

Objectives:

Sampling System and Sampling Specifications:

Sample Handling and Custody:

Analyses:

Quality Control:

Data Management:

Records Management:

Organization and Interfaces:

Schedule and Budget:

Signatures

_____   _____   _____
Preparer   Name (print)   Date

_____   _____   _____
Project Leader (Approved)   Name (print)   Date

_____   _____   _____
Client (As needed)   Name (print)   Date