Environmental Information Quality Assurance Project Plan (QAPP) Standard

2024 NAAMC QA Training Session

August 12, 2024

Presentation Topics

- Key definitions

- What is the QAPP Standard?

- How does this differ from R-5?

- Required Elements

- Best Practices for Writing QAPPs

- Coming Soon! More Guidance

Key Definitions

Environmental Protection Agency

Quality Assurance Project Plan (QAPP) Defined

Quality Assurance Project Plan

A planning document related to a project that describes in comprehensive detail the necessary QA/QC requirements and other technical activities that must be implemented to ensure that the results of the work performed will satisfy the stated performance and acceptance criteria.

• For air monitoring organizations…

Your organization's **specific** planning document for conducting a **specific** monitoring project. It is an overview of your organization's specific business rules, policies, and quality assurance/quality control (QA/QC) procedures for conducting the monitoring project – in other words, it is how your organization **plans** to **assure** the **quality** of your project's data.

Environmental Information Operations Defined

Environmental Information Operations

A collective term for work performed to collect, produce, evaluate, or use environmental information and the design, construction, operation, or application of environmental technology.

Environmental Information Defined

Environmental Information - Includes data and information that describe environmental processes or conditions which support EPA's mission of protecting human health and the environment. Examples include but are not limited to:

- direct measurements of environmental parameters or processes.
- analytical testing results of environmental conditions
- information on physical parameters or processes collected using environmental technologies.
- calculations or analyses of environmental information.
- information provided by models.
- information data compiled or obtained from databases, software applications, decision support tools, websites, existing literature, and other sources: and
- design, construction, and operation or application of environmental technology.

Data Defined

Data - A quantitative or qualitative representation of values, facts, observations, or ideas in a formalized manner capable of being transmitted, processed, stored, analyzed, interpreted, and/or communicated by some process, whether on paper or in electronic form.

- **Qualitative data** - is descriptive.

- **Quantitative data** - is numerical.

- **Primary data** - are data observed, collected, stored, or generated directly for a specific purpose.

- **Existing data** - are data that have been collected, derived, stored, or reported in the past or by other parties (for a different purpose and/or using different methods and quality criteria). Sometimes referred to as data from other sources.

- **Metadata** - Metadata is structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use, or manage an information resource.
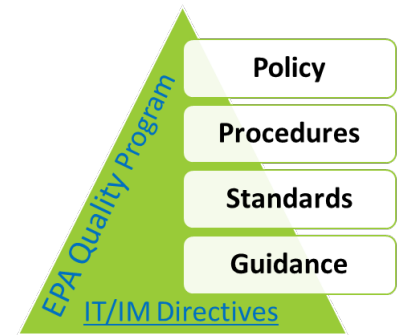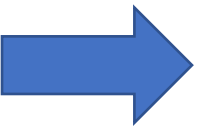
What is the QAPP Standard?

QAPP Standard
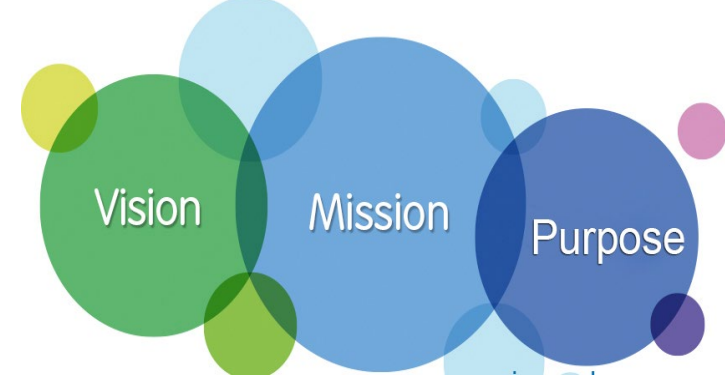
The QAPP Standard defines the minimum requirements for QAPPs for EPA and non-EPA organizations performing environmental information operations.

- Published in July 2023

- Supersedes EPA QA/R-5

Directives Explained

EPA Quality Program

Policy
Procedures
Standards
Guidance

IT/IM Directives

- ✓ **Policy:** high-level statement of principles that defines a course of action for a specific purpose and establishes broad requirements that govern EPA's decision-making

- ✓ **Procedure:** series of specified actions or discrete steps that establish a method or process to implement an EPA policy

- ✓ **Standard: authoritative technical requirement that establishes a measurable control to determine conformance with a particular EPA policy**

- ✓ **Guidance:** a document that empowers users to successfully and efficiently comply with the requirements of an EPA policy, standard, or procedure by aiding, transferring information, or offering advice

WHAT'S NEW

What's New - Directive Format

What's New - Directive Content

- Specifies content not format.
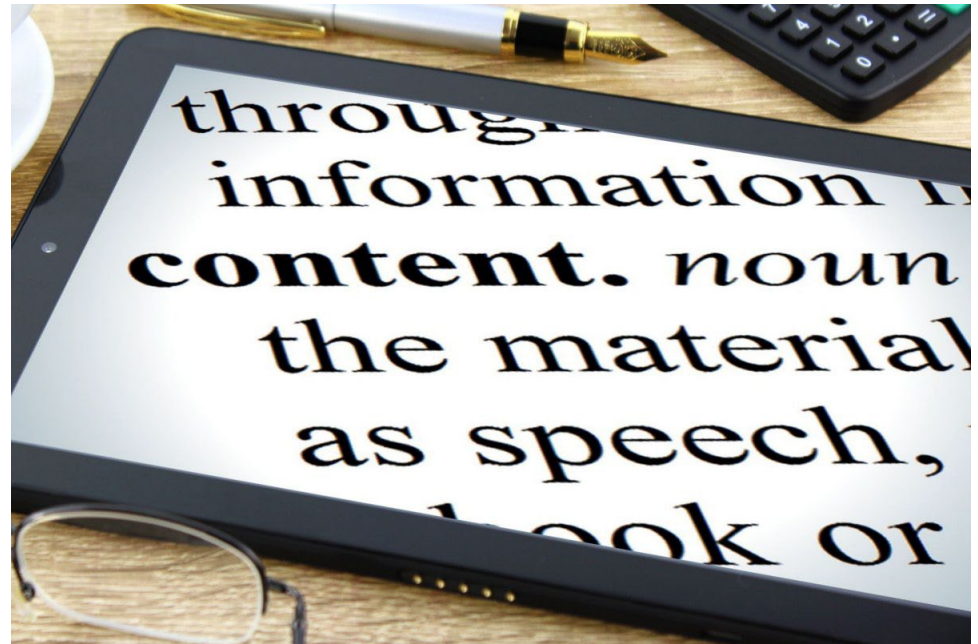
What's New - Terminology

- **MUST & SHALL** = Required

- **SHOULD** = Recommended

- **MAY** = Optional

What's New - Instructions to EPA and Non-EPA Organizations throughout

Organizations

EPA Organizations:
QAPPs shall be submitted to the QAM or designee as specified in the organization's QMP and follow internal processes for review and approval…

Non-EPA Organizations:
The QAPP shall be submitted for review and approval to the EPA official responsible for the work, who will then follow the approval procedures listed in the sponsoring organization…

Required Elements

QAPP Requirements (Section 5.B)

Section	Title
1	**GROUP A ELEMENTS:** Project Management and Information/Data Quality Objectives
2	**GROUP B ELEMENTS:** Implementing Environmental Information Operations
3	**GROUP C ELEMENTS:** Assessment and Oversight
4	**GROUP D ELEMENTS:** Environmental Information Review and Useability Determination

GROUP A Elements: Project Management and Information/Data Quality Objectives

Describes the overall plan for the monitoring project

- Group A elements address project management including project history and roles and responsibilities of the personnel involved in the project.

- These elements document that the project has defined information/ data quality objectives, that strategies are in place to help personnel understand the approach to be used, and that planning has occurred.

- QAPPs should contain all the Group A elements.

GROUP A Elements: EPA/QA-R-5 Crosswalk

AGENCY STANDARD ELEMENT	AGENCY STANDARD ELEMENT #	QA/R5 ELEMENT #
Group A: Project Management and Information/Data Quality Objectives Elements		
Title Page	A1	A1
Approval Page	A2	A1
Table of Contents, Document Format, and Document Control	A3	A2
Project Purpose, Problem Definition, and Background	A4	A5
Project Task Description	A5	A6
Information/Data Quality Objectives and Performance/Acceptance Criteria	A6	A7
Distribution List	A7	A3
Project Organization	A8	A4
Project QAM Independence	A9	A4
Project Organizational Chart and Communications	A10	A4
Personnel Training/Certification	A11	A8
Documents and Records	A12	A9

Group B Elements: Implementing Environmental Information Operations

Describes how the plan will be implemented

- Group B elements identify and address all aspects of environmental information operations to help to ensure products and services are of known and documented quality and to evaluate the products and services delivered under the project.

- This section of the QAPP describes in comprehensive detail the implementation of project-appropriate QA/QC to ensure that the results will satisfy the intended purpose, the information/data quality objectives, and performance/acceptance criteria.

- The QAPP shall address all Group B elements.
  - If an element is not applicable to the project, simply state that the element "Does not apply" and why.

GROUP B Elements: EPA/QA-R-5 Crosswalk

AGENCY STANDARD ELEMENT	AGENCY STANDARD ELEMENT #	QA/R5 ELEMENT #
Group B: Implementing Environmental Information Operations		
Identification of Project Environmental Information Oper		B1
Methods for Environmental Information Acquisition		B2, B4 and B9
Integrity of Environmental Information	B3	B3
Quality Control	B4	B5
Instrument/Equipment Calibration, Testing, Inspection, and Maintenance	B5	B6 and B7
Inspection/Acceptance of Supplies and Services	B6	B8
Environmental Information Management	B7	B10

Group C Elements for Assessment, Response Actions, and Oversight

Describes how the project will be assessed and at what frequency

- Assessments ensure that the planned project activities in the QAPP are implemented as approved. Assessments can be internal and/or external and should be conducted throughout the project to ensure that usable environmental information are obtained.

- Response actions address findings, corrective actions and non-conformances identified from the assessments.

- Oversight activities ensure that response actions and reporting mechanisms are in place to capture the project status and any QA issues that arise during implementation and through assessments.

GROUP C Elements: Assessment, Response Actions, and Oversight

AGENCY STANDARD ELEMENT	AGENCY STANDARD ELEMENT #	QA/R5 ELEMENT #
Group C: Assessment, Response Actions, and Oversight		
Assessments and Response Actions	C1	C1
Oversight and Reports to Management	C2	C2

Group D Elements for Environmental Information Review and Useability Determination

Describes how the resulting data will be evaluated

- The elements in this group address the activities associated with environmental information review for the purpose of determining whether the environmental information meets the established environmental/data quality objectives, the performance/acceptance criteria, and are useable for their intended purpose.

- Information review activities ensure that products and services resulting from the environmental information operations are of known and documented quality for their intended use(s) and that any limitations concerning their intended use is documented and communicated.

GROUP D Elements: Environmental Information Review and Useability Determination

AGENCY STANDARD ELEMENT	AGENCY STANDARD ELEMENT #	QA/R5 ELEMENT #
Group D: Environmental Information Review and Useability Determination		
Environmental Information Review		D1 and D2
Useability Determination	D2	D3

Best Practices for Writing QAPPs

Best Practices for Writing QAPPs

- Write in future tense – it's your plan, after all

- Use citations, but be specific (i.e., "See Data Validation SOP, Revision 1, Section 4.2(b)")

- Include an acronym list and define acronyms as they appear

- Include a reference list or bibliography

- Include a revision history table to track reviews and revisions to the QAPP over time

- If you are provided a model or template QAPP, only write what your organization will do, and be sure to follow your QAPP. These are tools and are not meant to constrain or dictate the exact QAPP content or your organization's practices
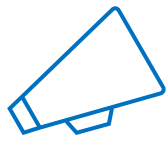
Coming Soon!

EPA QAPP Guidance

- Companion guidance to EPA's QAPP Standard

- Replacing EPA QA/G-5

- Will include examples of implementation of QAPP Standard

- Expected in later 2024

Update to Air Monitoring QAPP Guide

- Guidance for writing QAPPs for regulatory and non-regulatory ambient air monitoring projects/programs

- Replacing August 2018 guidance

- Updated to adhere to EPA's QAPP Standard

- Expected in later 2024

Helpful Resources

- [QAPP Standard](#)

- [QMP Standard](#)

- [EPA Quality Webpage](#)

- [AMTIC Quality Assurance Guidance Documents](#)

- [AMTIC Technical Memos](#)

thank you!

Questions and Contact Information

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