

US EPA ARCHIVE DOCUMENT

Developing QAPPs & SAPs

QA Office Contacts

Region 9 QA Manager:

Eugenia McNaughton (415-972-3411)
mcnaughton.eugenia@epa.gov

Brownfields:

Gail Morison (415-972-3807)
morison.gail@epa.gov

General Program Resource:

David Taylor (415-972-3803)
taylor.david@epa.gov

Why do I need QA Document?

- **Federal Grant Requirement**
 - **Terms & Conditions**
- **Planning**
- **Documentation**

Types of QA Documents

- **Quality Assurance Project Plans (QAPP)**
 - **Site-Specific Field Sampling Plans (FSP)**

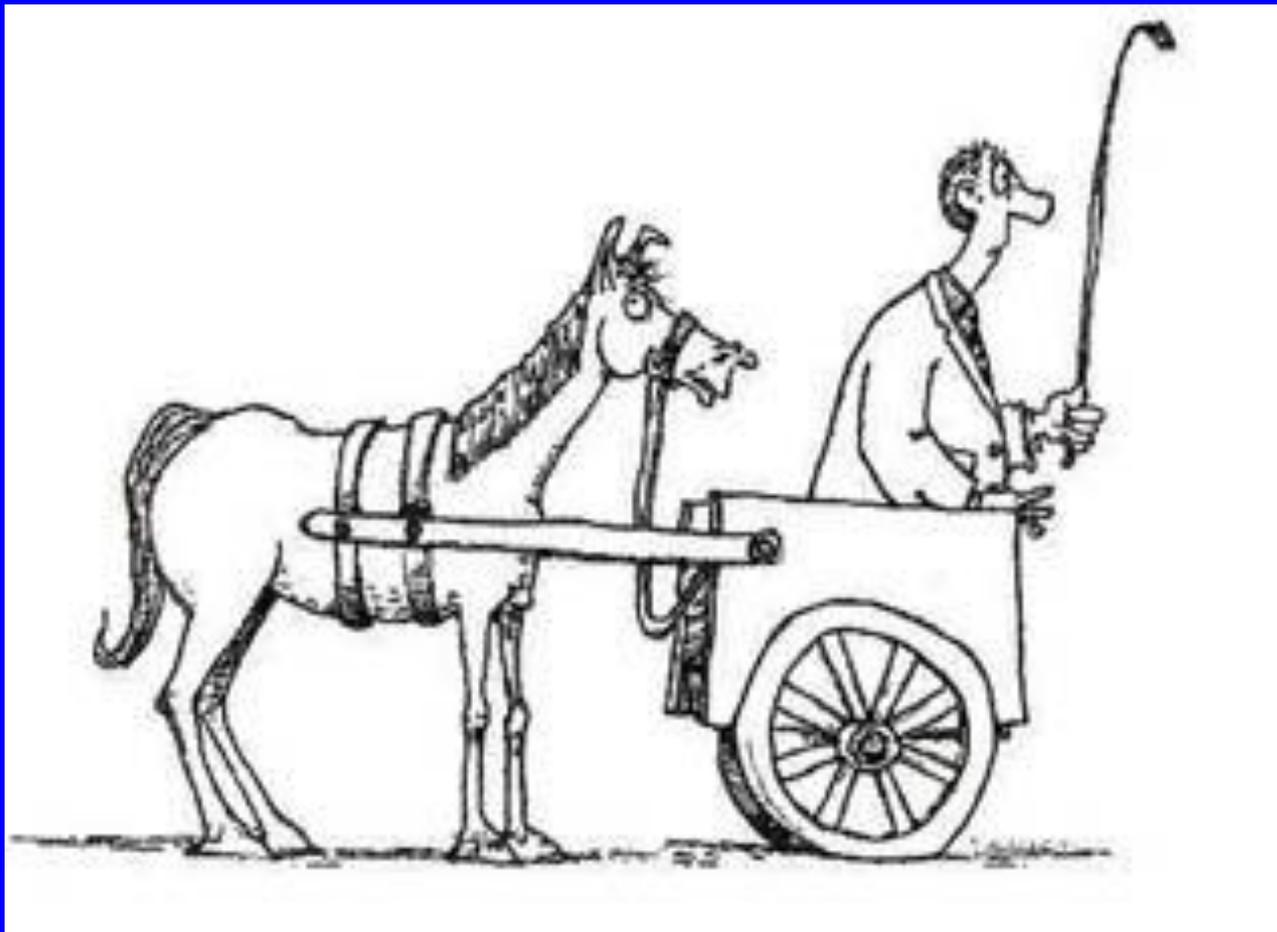
- **Site-specific Sampling and Analysis Plans (SAP)**

Types of Grants & Associated QA Documents

- **104k:**
 - **Assessment**
 - **Community-wide – QAPP w/ FSPs**
 - **Site-Specific - SAP**
 - **Cleanup/RLF– Site Cleanup Plan (SCP) w/ FSP or SAP**

- **128a – varies (QA Program Plan, QAPP/FSP, SAPs)**

Getting Started



Initial Grant Steps

- **Grantee recognizes an environmental problem and applies for a grant/cooperative agreement**
- **Grant awarded**
- **Grant paperwork prepared – if environmental measurements are planned, a grant condition is included in Terms & Conditions**
- **Work Plan prepared – approved by PO**

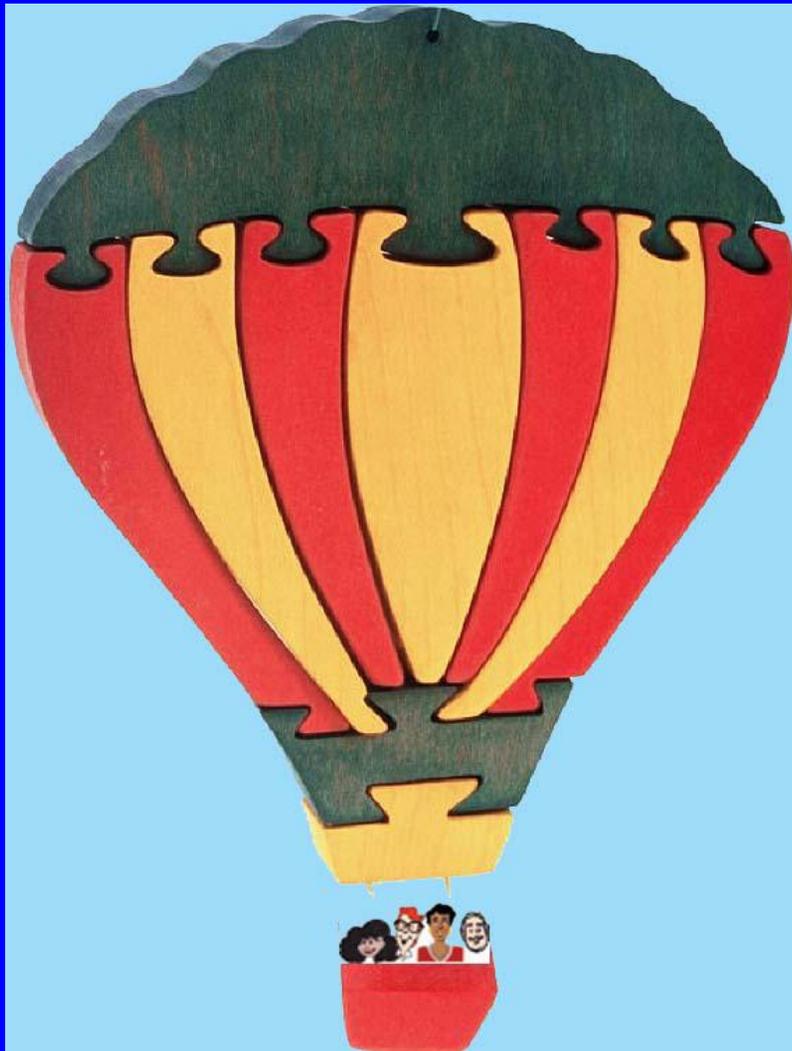
Project Planning

- **Scoping meeting held – Grantee, Project Officer, QA Office, others**
- **QA document prepared**
- **Plan submitted to QA Office and Project Officer**
- **Plan reviewed & approved by EPA**

Project Implementation

- **Samples collected & analyzed**
- **Results evaluated**
- **Decisions made**

Launch Your Project with a Scoping Meeting



- **Save Time**
- **Avoid Wasted Effort**
- **Identifies Potential Problems**
- **Alert QAO to Upcoming Projects**
- **Avoid Pesky QAO Comments**

Scoping Meeting

- **Key project participants – Grantee, EPA PO, EPA QAO, Consultant/Contractor**

- **Materials needed:**
 - **maps**
 - **site history, background**
 - **draft sampling design**
 - **proposed sampling locations**

So Who's Doing What?



The EPA Project Officer...

- **Determines site eligibility (area-wide grants)**
- **Initiates & attends scoping meeting**
- **Reviews QA plan for program compliance**
- **Reviews completed project data to ensure objectives have been met**

The Grantee...

- **Selects properties to be investigated**
- **Attends scoping meeting**
- **Writes/revises QA plan or oversees consultant**
- **Conducts/oversees sampling**
- **Makes decisions**

The EPA QA Office...

- **Attends scoping meeting**
- **Provides technical guidance and assistance as needed throughout the process**
- **Reviews QA plan, provides comments**
- **Approves QA plan when comments addressed**

Preparing a QA Document



[John White Alexander](#), Manuscript Book mural (1896), Library of Congress [Thomas Jefferson Building](#), Washington, D.C.

Quality Assurance Project Plans (QAPP)

- An overarching document covering the quality requirements for multiple similar projects.
- Describes common project objectives, decisions, analytical methods, sampling collection procedures, etc.
- Requires field sampling plan (FSP) for each sampling event.
- Life: Duration of grant.

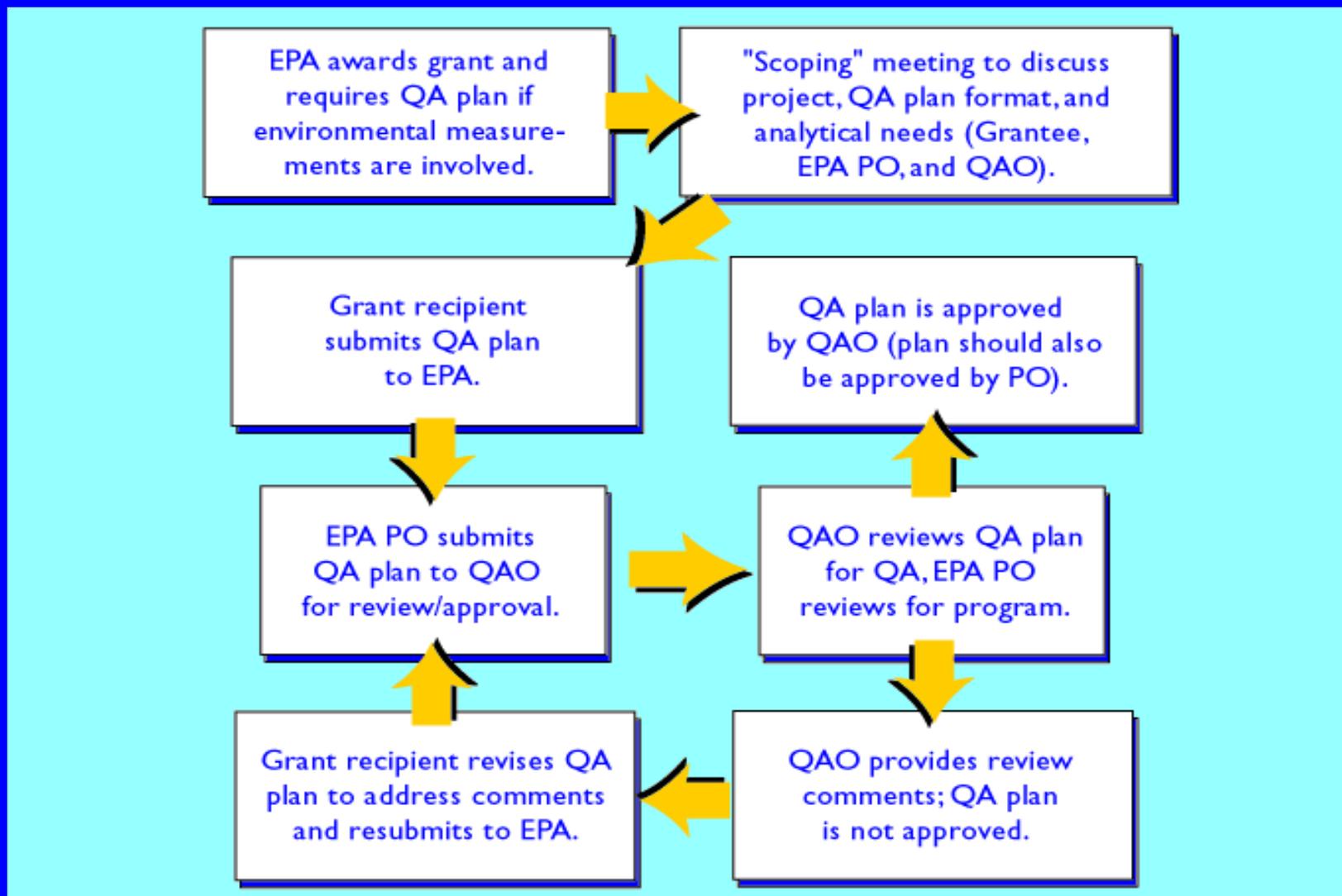
Field Sampling Plans (FSP)

- **Used in conjunction with a QAPP.**
- **Can incorporate by reference information contained in approved QAPP.**
- **Describes site-specific objectives, decisions, sampling design, etc.**
- **Life: Duration of the specific sampling event.**

Sampling and Analysis Plans (SAP)

- Used as a substitute in place of QAPP/FSP. Includes elements of both documents.
- Describes site-specific objectives, decisions, sampling design, and QA steps of a specific sampling event.
- More details required than FSP.
- Life: Duration of the specific sampling event.

Flow chart for Grant and QA Document Approval



Main Concepts

- **Why are you sampling?**
- **How are you going to generate the data?**
- **What decisions are going to be made with the data?**
- **What criteria are these decisions going to be based on?**

Key Plan Elements

- **Project & Data Quality Objectives**
- **Sampling Design & Rationale**
- **Sampling procedures and protocols**
- **Preservation, Storage, Chain-of-custody, Shipping, etc.**
- **Analytical requirements/QC acceptance criteria**
- **Data review, evaluation & assessment**

- **Completeness & Consistency**

Additional Key Points

- **Who's the audience?**
- **So what?**



Project & Data Quality Objectives

- **Project Objectives - Describes the purpose of the environmental investigation and how the data will be used. Discussion should describe how this sampling effort will support the decisions to be made at the site**
- **Data Quality Objectives (DQOs) – Qualitative and quantitative statements for establishing criteria for data quality and for developing data collection designs.**

DQIs & MQOs

- **Data Quality Indicators (DQIs) –project specific and normally defined in terms of PARCCS (precision, accuracy, representativeness, completeness, comparability and sensitivity).**
- **Measurement Quality Objectives (MQOs) – defines the acceptance criteria to determine if the data quality, as defined by the PARCCS, have been met.**

Sampling Design

Key information to be provided includes:

- **Where:** list sampling locations and depths
- **What:** list matrices and analytes
- **How many:** list by matrix and parameter
- **Rationale** for locations, depths, matrices, analytes

Analytical Requirements

- **Discuss analytical support, including:**
 - **the analyses requested, methods**
 - **analytes of concern**
 - **turnaround times**
 - **available laboratories (which samples where)**
- **Include special requests**
- **Tables recommended**

Quality Control

- **Identify field (e.g., blanks & duplicates) and laboratory quality control samples (e.g., MS/MSD) to be collected.**
- **Identify locations.**
- **Provide rationale for location.**
- **Frequency of collection.**

Data Review and Assessment

- **Discuss data review, including what organizations or individuals will be responsible for what aspects of data review and what the review will include.**
- **Discuss the process by which the evaluation of data quality will be made. Describe how data that do not meet data quality objectives will be designated.**
- **Discuss reconciliation with Data Quality Objectives.**

PARCCS

- **Precision - How reproducible do the data need to be?**
- **Accuracy/bias - How well do the measurements reflect what is actually in the samples?**
- **Representativeness - How well do the data reflect the environmental conditions?**

PARCCS

- **Comparability** - How similar do the data need to be to those from other studies?
- **Completeness** - What amount (percentage) of the data is critical/necessary to meet project needs?
- **Sensitivity** - Are the field/laboratory methods sensitive enough to detect the chemical of concern? Are the quantitation limits low enough?